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I. INTRODUCTION

Winters are getting shorter and summers are growing hotter with the United States experiencing the warmest January on record in 2020.[1] A way to limit the detrimental impacts of climate change is to reduce greenhouse gas emissions.[2] Burning fossil fuels, such as

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1. *January 2020 Was Earth's Hottest January on Record*, NAT'L OCEANIC & ATMOSPHERIC ADMIN. (Feb. 13, 2020), https://www.noaa.gov/news/january-2020-was-earth-s-hottest-january-on-record.

2. *See Climate Change Indicators: Greenhouse Gases*, ENV'T PROT. AGENCY, https://www.epa.gov/climate-indicators/greenhouse-gases (last updated Nov. 9, 2020)

coal and oil, to generate electricity is one major source of human greenhouse gas emissions due to the copious quantities of carbon dioxide produced throughout the process.[3] One approach to reduce the United States's energy dependence on fossil fuels and high-carbon output as a source of electricity is to transition to alternative, renewable energy sources like solar, wind, and hydro-electric.[4]

As the impact of the changing climate has become more severe and has increasingly become a matter of public and political concern over the last few decades, proposals encouraging the replacement of fossil fuels with renewable energy sources have similarly become more expansive. For example, in his bid for the 2020 Democratic presidential nomination, Senator Bernie Sanders proposed a $16 trillion energy plan that would require 100% of U.S. energy to come from renewable sources by 2030.[5] This is not the first time proposals with this degree of urgency have been introduced into American politics.[6] Just months after Congress passed the first residential investment tax credit ("ITC") as part of the Energy Tax Act of 1978,[7] President Jimmy E. Carter, Jr. "called [on Congress] for a quadrupling of energy supplied by solar power and renewable

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(explaining that greenhouse gas emissions lead to climate change by clouding the Earth's atmosphere and preventing heat from escaping the globe, causing the rising temperatures beneath the atmosphere).

3. *Id.* ("Carbon dioxide accounts for most of the [United States's] emissions and most of the [nation's] increase since 1990. Electricity generation is the largest source of greenhouse gas emissions in the United States . . . ."); *Electricity and the Environment*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/energyexplained/electricity/electricity-and-the-environment.php (last updated Dec. 9, 2020) ("Electric power sector power plants that burned fossil fuels or materials made from fossil fuels . . . were the source of about 33% of total U.S. energy-related CO2 emissions in 2018.").

4. *See* John Kaufmann, *Federal Income Tax Incentives for Energy from Renewable Sources*, 20 J. NAT. RES. & ENV'T. L. 163, 163–65 (2006); *What We Can Do*, CTR. FOR CLIMATE & ENERGY SOLS., https://www.c2es.org/content/what-we-can-do/ (last visited Mar. 12, 2021).

5. Gavin Bade, *Power to the People: Bernie Calls for a Federal Takeover of Electricity Production*, POLITICO (Feb. 2, 2020, 6:53 AM), https://www.politico.com/news/2020/02/02/bernie-sanders-climate-federal-electricity-production-110117; *The Green New Deal*, BERNIE SANDERS 2020, https://berniesanders.com/issues/green-new-deal/ (last visited Mar. 12, 2021).

6. *See* Edward Walsh, *Carter Proposes $100 Million Solar Energy Bank*, WASHINGTON POST (June 21, 1979), https://www.washingtonpost.com/archive/politics/1979/06/21/carter-proposes-100-million-solar-energy-bank/7d7ced0d-56ee-4e30-95c8-4f16e4c038a7/.

7. Energy Tax Act of 1978, Pub. L. No. 95-618, § 101, 92 Stat. 3174, 3175.

sources of energy [from 5% to 20%] by the year 2000."[8] As of 2021, the United States remains woefully short of Carter's goal with only 11% of total U.S. energy consumption in 2019 being derived from renewable energy sources.[9] Although Sanders's urgent call to action and the severe under-performance of the United States in transitioning to renewable energy over the last forty years suggests neglect, Congress has used the federal income tax as one method of supporting a renewable energy transition.[10]

One early approach that Congress adopted was to award non-refundable federal income tax credits for the use of renewable energy properties, encouraging individuals and commercial businesses to become personally invested in transitioning to renewable energy usage.[11] The current iteration of the residential renewable energy credit[12] was first introduced as part of the Energy Policy Act of 2005.[13] In the fifteen years since its introduction, this provision has undergone significant changes that will culminate in the credit's scheduled 2022 elimination.[14] The § 25D credit encourages U.S. residential property-users to install renewable energy sources in their homes to encourage decreased dependence on more harmful energy sources, such as fossil fuels.[15] The § 25D credit addresses this goal by offering a federal ITC equal to a percentage of the property-users renewable energy installation expenditures.[16]

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8. Walsh, *supra* note 6.

9. *How Much of U.S Energy Consumption and Electricity Generation Comes from Renewable Energy Sources?*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/tools/faqs/faq.php?id=92&t=4 (last updated May 6, 2020).

10. The United States has pursued several other approaches to encourage a transition to cleaner, low-carbon energy sources. However, regulations are most effective at creating cost pressures to alter supply side production. In contrast, tax incentives are useful for spurring consumer demand for renewable energy, which permits prices to lower and the product to proliferate across the country more rapidly. *See* Jason S. Johnston, *Regulatory Carrots and Sticks in Climate Policy: Some Political Economic Observations*, 6 TEX. A&M. L. REV. 107, 107–22 (2018).

11. I.R.C. § 25D, 48; MARGOT L. CRANDALL-HOLLICK & MOLLY F. SHERLOCK, CONG. RSCH. SERV., R42089, RESIDENTIAL ENERGY TAX CREDITS: OVERVIEW AND ANALYSIS, app. B at 16–17 (2018). *See generally* Felix Mormann, *Fading into the Sunset: Solar and Wind Energy Get Five More Years of Tax Credit with a Phase-down*, AM. BAR ASS'N TRENDS, May–June 2016, at 9.

12. *See generally* I.R.C. § 25D.

13. Energy Policy Act of 2005, Pub. L. No. 109-58, § 1335, 119 Stat. 594, 1033–36 (codified at I.R.C. § 25D); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11; Mormann, supra note 11, at 10.

14. I.R.C. § 25D(h); *see* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11.

15. I.R.C. § 25D(a); Kaufmann, *supra* note 4, at 163–66, 204–06.

16. I.R.C. § 25D(a).

Previously, when Congress has passed enabling legislation for the § 25D credit, it has included an expiration date for the credit after one or two years, and as each of those proposed expiration periods approached, Congress reevaluated the credit.[17] Until 2016, Congress consistently chose to extend and expand the § 25D credit, and as a consequence, the solar industry developed into a significant presence in the national energy market.[18] In 2016, however, Congress decided to allow the residential credit to expire through a phase out beginning in 2020.[19]

This Article addresses the development of the § 25D residential credit and its effectiveness in encouraging a nationwide transition to renewable energy, with special attention to solar energy, and offers suggestions for its future. Part II focuses on the history and development of the § 25D credit in light of the economic and political factors that have accompanied each re-evaluation of its extension. Part III examines the effectiveness of the § 25D credit in allowing residential property-holders of all economic backgrounds to take advantage of the credit. Part IV discusses the ability of community solar programs to compensate for some of the deficiencies of the § 25D credit so that individuals of all income levels and property ownership status may participate in the renewable energy market. Finally, Part V asserts that the § 25D credit should be continued and expanded to include individual investment in community solar programs to more efficiently provide the advantages of the credit to individuals of all income levels, promote the wide-spread transition to renewable energy that is necessary to effectively combat climate change, and allow Congress to take advantage of the renewable energy job growth opportunities that the credit has historically encouraged.

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17. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 16–18.

18. *Id.*; *Solar Investment Tax Credit (ITC)*, SOLAR ENERGY INDUS. ASS'N, https://www.seia.org/initiatives/solar-investment-tax-credit-itc (last visited Mar. 12, 2021) ("Since the ITC was enacted in 2006, the U.S. solar industry has grown by more than 10,000% [—] creating hundreds of thousands of jobs and investing billions of dollars in the U.S. economy in the process.").

19. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 3–4.

II. A HISTORICAL ANALYSIS OF THE U.S. RESIDENTIAL RENEWABLE ENERGY CREDIT

A. Energy and the Free Market: The Early Rise and Fall of § 25D

Congress first introduced a residential renewable energy credit in the Energy Tax Act of 1978.[20] The Act provided a non-refundable income tax credit on the first $10,000 spent on qualified renewable energy installations for the taxpayer's primary residence, offering a 30% credit on the first $2,000 of those costs and a 20% credit on any remainder of those costs up to $10,000.[21] In addition, as a non-refundable credit, the Act permitted any credit amount that exceeded the tax liability to be carried over to the next taxable year through 1987, when the credit was set to expire.[22]

President Carter had high hopes for the exploitation of renewable energy in the United States,[23] and his vision was matched by the broad provision enacted during his term.[24] Carter's policies were also prompted in part by the energy crisis that had plagued the decade with high energy costs and fuel shortages that contributed to a serious economic downturn in the United States.[25] During the Carter Administration, Democrats held both the House of Representatives and the Senate.[26] Despite this majority rule and even though Carter proposed significant energy policies during his term, those that accompanied the 1978 residential credit were among the few that he successfully implemented due to the pushback from energy industries, like oil and coal.[27] Those industries pushed to preserve dependence on fossil fuels to promote economic recovery and forestall market loss from a renewable energy

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20. Energy Tax Act of 1978, Pub. L. No. 95-618, § 101, 92 Stat. 3174, 3175 (codified as amended at I.R.C. § 25D).

21. *Id.* § 44C(b)(2), (c)(2)(A).

22. *Id.* § 44C(b)(5)–(6), 92 Stat. at 3175–76.

23. *See* Walsh, *supra* note 6.

24. *See generally* § 101, 92 Stat. at 3175.

25. *Energy Crisis*, NAT'L MUSEUM OF AM. HIST., https://americanhistory.si.edu/american-enterprise-exhibition/consumer-era/energy-crisis (last visited Mar. 12, 2021).

26. *Congress Profiles: 95th Congress (1977–1979)*, U.S. HOUSE OF REPRESENTATIVES, https://history.house.gov/Congressional-Overview/Profiles/95th/ (last visited Mar. 13, 2021).

27. *Jimmy Carter – Energy Policy*, PRESIDENT PROFILES, https://www.presidentprofiles.com/Kennedy-Bush/Jimmy-Carter-Energy-policy.html (last visited Mar. 13, 2021).

takeover.[28] Their interests were supported by President Ronald Reagan, who sought to minimize the scope of government, relying instead on the free market, leading to the residential credit's on-schedule expiration at the end of 1985.[29] Over the next two decades, there was little significant federal legislation promoting renewable energy.[30]

B. Conflict, Job Growth, and a § 25D Return: The Bush Administration

Following the two-decade gap in renewable energy legislation, the Energy Policy Act of 2005[31] provided $5.8 billion in tax incentives for energy efficiency and renewable energy investment,[32] including the reintroduction of a credit for residential renewable energy into the federal income tax code.[33] Congress's stated legislative purpose for the Act was "[t]o ensure jobs for our future with secure, affordable, and reliable energy."[34] Furthermore, after signing the Act, President George W. Bush's Administration described the goals that the Administration hoped to achieve through the legislation, including "promoting residential efficiency," "modernizing domestic energy infrastructure," and "diversifying the nation's energy supply with renewable sources."[35] Thus, Bush and the Republican majority in Congress created the Energy Policy Act to address the "competing concerns of energy security, environmental quality and economic growth."[36] The Act further

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28. *Id.*

29. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 16; John Wihbey, *Jimmy Carter's Solar Panels: A Lost History That Haunts Today*, YALE CLIMATE CONNECTION (Nov. 11, 2008), https://www.yaleclimateconnections.org/2008/11/jimmy-carters-solar-panels/.

30. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B. at 16; Wihbey, *supra* note 29.

31. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594.

32. *See* MARK HOLT & CAROL GLOVER, CONG. RSCH. SERV., RL33302, ENERGY POLICY ACT OF 2005: SUMMARY AND ANALYSIS OF ENACTED PROVISIONS 3 (2006).

33. I.R.C. § 25D (Supp. 2005); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 16.

34. 119 Stat. at 594.

35. Press Release, George W. Bush, President, United States, Fact Sheet: President Bush Signs into Law a National Energy Plan (Aug. 8, 2005), https://georgewbush-whitehouse.archives.gov/news/releases/2005/08/20050808-4.html.

36. HOLT & GLOVER, *supra* note 32, at Summary, 1 ("For example, efforts to enhance energy security by allowing oil and gas production . . . were blocked by

reflected the political pressures stemming from heightened concerns over the United States's foreign dependence on oil, particularly in light of the United States's costly conflicts in the Middle East and the steadily-rising oil prices that threatened a Unites States economic downturn.[37] Although it appears that much of the legislation was focused on creating renewable energy in forms like ethanol to combat rising gas prices,[38] Bush also stated that policies supporting renewable energy were valuable to discourage foreign dependence on natural gas imports. Bush remarked on the issue: "For the sake of our economic and national security, we must reduce our dependence on foreign sources of energy—including on the natural gas that is a source of electricity for many American homes . . . ."[39] The concern surrounding foreign energy dependence was that rising energy prices would reduce the level of income available in each American home which is necessary for a healthy level of consumerism, resulting in unstable markets and potential unemployment,[40] a factor that also supported the 2005 Act's description as promoting job growth.[41] Thus, Congress stepped into American homes through the tax credit in order to reduce renewable energy costs and deter detrimental economic consequences.[42]

At its outset, the § 25D residential energy credit allowed an individual taxpayer to receive a credit "equal to the sum of (1) 30 percent of the qualified photovoltaic property expenditures . . . , (2) 30 percent of the qualified solar water heating property expenditures . . . , and (3) 30 percent of the qualified fuel cell property expenditures made by the taxpayer during [the taxable] year."[43] The expenditures only qualified for the credit after the

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environmental concerns. Conversely, efforts to address environmental quality by restricting carbon dioxide and other greenhouse gases were stymied largely because of their potential effect on the U.S. economy . . . .").

37. *Id.* at 1; *see also Oil Prices near Record High*, CNN (May 12, 2004, 8:57 PM), http://www.cnn.com/2004/BUSINESS/05/12/oil.prices/.

38. HOLT & GLOVER, *supra* note 32, at 1–3.

39. NAT'L ECON. COUNCIL, ADVANCED ENERGY INITIATIVE, at Letter from George W. Bush (2006).

40. NEELESH NERURKAR, CONG. RSCH SERV., R41765, U.S. OIL IMPORTS: CONTEXT AND CONSIDERATIONS 9 (2011).

41. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594, 594.

42. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 3, 6; *see also* NERURKAR, *supra* note 40 (discussing the negative economic impacts of relying on foreign oil).

43. I.R.C. § 25D(a) (Supp. 2005); *see* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11; Ira B. Shepard & Martin J. McMahon, Jr., *Recent Developments in Federal Income Taxation: The Year 2005*, 8 FLA. TAX REV. 5, 29 (2006).

property's installation or original use in the case of a newly-built structure, such as a new house with solar panels, if these actions took place during the period beginning on January 1, 2006, and ending on December 31, 2007.[44] Furthermore, the taxpayer only received the credit for expenditures on qualified property for their own residence located in the United States, and although the expenditures included the cost of labor to install the qualifying property, the total amount of expenditures qualifying for the credit was limited to $6,667 for any qualifying photovoltaic or solar water heating expenditures and $1,667 for each half kilowatt of capacity for qualifying fuel-cell property for each residence.[45] Consequently, the 2005 edition of § 25D capped the credits for expenditures on qualifying photovoltaic property and solar water heating property at $2,000 and $500 for each half kilowatt of capacity for qualifying fuel cell property.[46] Finally, the § 25D credit was non-refundable, so the credit taken by the taxpayer for the taxable year could not exceed the taxpayer's tax liability for that year.[47] However, any excess credit amount was added to the credit available for the following taxable year.[48]

Despite those limitations, the credit made the use of renewable energy more accessible to private citizens. Coincident with the introduction of the § 25D credit between 2004 and 2007, capital expenditures in the renewable energy market grew from $215 million to $3.2 billion.[49] Similarly, the United States's capacity for solar energy usage increased dramatically during this period.[50] Following these successes, as part of the Tax Relief and Healthcare

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44. I.R.C. § 25D(e)(8), (g); *see* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 16; Shepard & McMahon, *supra* note 43, at 29.

45. I.R.C. § 25D(d), (e)(1), (4)(A) (stating that the maximums are applicable to the individual residence in the event that the residence is occupied by more than one taxpayer who may be eligible to claim the credit); *see* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 16; Shepard & McMahon, *supra* note 43.

46. I.R.C. § 25D(b)(1); *see* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11; Shepard & McMahon, *supra* note 43.

47. I.R.C. § 25D(c); OFF. OF ENERGY EFFICIENCY & RENEWABLE ENERGY, U.S. DEP'T OF ENERGY, HOMEOWNER'S GUIDE TO THE FEDERAL TAX CREDIT FOR SOLAR PHOTOVOLTAICS 3 (2020); *see* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 16; Shepard & McMahon, *supra* note 43.

48. I.R.C. § 25D(c); OFF. OF ENERGY EFFICIENCY & RENEWABLE ENERGY, *supra* note 47.

49. Aaron Tucker, *Government Intervention in Clean Energy Technology During the Recession*, 42 TEX. ENV'T. L.J. 347, 349 (2012).

50. *Id.*

Act of 2006,[51] Congress extended the life of the § 25D credit beyond December 31, 2007 to include expenditures for qualifying property installed through December 31, 2008.[52] However, these adjustments to the § 25D credit left the door open to its reassessment in 2009.

The economic turmoil of the 2007 financial crisis ravaged the U.S. housing market, caused substantial job loss, and left few industries unscathed, including the solar energy industry.[53] The renewable energy industry saw a significant loss in investment along with a decreased demand for solar installations.[54] Demonstrating this decline, the number of residential renewable energy credits claimed fell from over 4,000,000 in 2007 to just over 225,000 in 2008.[55]

These economy-wide declines prompted Congress to provide quick stimulus through the Emergency Economic Stabilization Act ("EESA") of 2008.[56] The EESA[57] also expanded the list of qualifying properties for which a taxpayer could claim credit under § 25D and eliminated the credit cap for qualifying solar installations.[58] This legislation was designed to encourage the renewable energy industry and, more specifically, make investments in renewable energy for residences more cost competitive with mainstream electric sources so that renewable energy might be a reasonable investment for Americans at all income levels.[59] To this end, the EESA also made the credit applicable to the Alternative Minimum Tax as well as the federal income tax.[60]

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51. Tax Relief and Healthcare Act of 2006, Pub. L. No. 109-432, § 206(a), 120 Stat. 2922, 2945.

52. I.R.C. § 25D(g); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 17; Ira B. Shepard & Martin J. McMahon, Jr., *Recent Developments in Federal Income Taxation: The Year 2006*, 8 FLA. TAX REV. 433, 453 (2007).

53. Tucker, *supra* note 49, at 350–51.

54. *Id.*

55. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 18 tbl.B-1 (showing the number of claims by year for both the § 25D ITC and the non-business ITC provided for by the non-Business Energy Efficient Property credit under I.R.C. § 25C).

56. *See generally* John B. Palmer III et al., *Summary of the Tax Provisions of the Emergency Economic Stabilization Act of 2008*, 22 J. TAX'N FIN. INST., Jan.–Feb. 2009, at 5.

57. Emergency Economic Stabilization Act, Pub. L. No. 110-343, 122 Stat. 3765 (2008).

58. *Id.* § 106, 122 Stat. at 3814–17; *see also* I.R.C. § 25D(a)–(d); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 17.

59. *See* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 6–7.

60. I.R.C. § 25D(c).

C. A Green Economic Recovery: The Obama Administration

In the interim between the EESA and the next legislation to alter the § 25D credit, the United States saw a major political shift in 2008 with Democrats seizing control of the White House and Congress.[61] With this transition and the continued economic effects of the 2007 financial crisis, President Barack H. Obama promised to promote renewable energy investment as a means of improving the climate, staying competitive with other countries similarly engaged in climate change efforts and spurring on an industry that still possessed a great deal of job growth potential.[62] In fact, in early 2009, Obama and Congress passed the American Recovery and Reinvestment Act of 2009 ("ARRA"),[63] a stimulus package in which "over $40 billion was designated for programs and tax incentives that specifically focused on energy and the environment," including the § 25D credit.[64] Specifically, the ARRA amended the § 25D credit to no longer include any caps on the amount of credit that could be received for qualifying installations for every type of technology except fuel cells.[65] In addition, § 25D was extended, applying to all installations made from 2009 through 2016.[66] Thus, the restrictions on the § 25D incentive for residential solar investment were significantly loosened in line with the Obama Administration's goal to encourage the industry's growth and improve the accessibility of renewable energy.[67]

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61. Elana Schor, *Democrats in Firm Control of Both Houses*, GUARDIAN (Nov. 5, 2008, 7:01 PM), https://www.theguardian.com/world/2008/nov/06/us-elections-2008-democrats-congress-house-representatives.

62. Tucker, *supra* note 49, at 351–53 ("[T]o Obama, clean energy was the next great growth industry[,] and it was essential that the U.S. began investing in it significantly . . . .").

63. American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115.

64. Tucker, *supra* note 49, at 352; *Track the Money*, RECOVERY.GOV, http://www.recovery.gov/Transparency/fundingoverview/Pages/fundingbreakdown.aspx [https://web.archive.org/web/20120324040507/http://www.recovery.gov/Transparency/fundingoverview/Pages/fundingbreakdown.aspx] (last visited Mar. 13, 2021).

65. I.R.C. § 25D(b); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 17; Martin J. McMahon, Jr. et al., *Recent Developments in Federal Income Taxation: The Year 2009*, 10 FLA. TAX REV. 79, 148 (2010).

66. I.R.C. § 25D(g); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 17; McMahon et al., *supra* note 65.

67. Tucker, *supra* note 49, at 351–52.

These legislative changes prompted increased use of renewable energy and helped to create a significant number of new jobs.[68] Following these changes, the number of residential renewable energy credits claimed rose from almost 226,000 in 2008 to over 6,000,000 in 2009.[69] After the number of credits claimed increased to over seven million in 2010, the claims began to taper off but remained between two and four million over the next five years.[70] By 2016, the solar industry was experiencing rapid job growth, producing one out of every seventy-eight new jobs in the nation in an industry with over 260,000 workers.[71] In addition, by 2014, there was enough solar energy production in the United States to power at least four million residences, and the growth thereafter continued to be significant from both environmental and economic perspectives.[72] It was with this background that Congress once again reevaluated the § 25D credit before its slated expiration in 2017.

D. Shifting Priorities and § 25D Phaseout: The Trump Administration

The Consolidated Appropriations Act of 2016[73] codified the deliberations of § 25D's reevaluation under a different political lens than that used in 2009 as the 2014 midterm elections brought a Republican majority in control of both chambers of Congress in

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68. Off. of the Press Sec'y, *Fact Sheet: The Recovery Act Made the Largest Single Investment in Clean Energy in History, Driving the Deployment of Clean Energy, Promoting Energy Efficiency, and Supporting Manufacturing*, WHITE HOUSE ARCHIVES.GOV (Feb. 25, 2016), https://obamawhitehouse.archives.gov/the-press-office/2016/02/25/fact-sheet-recovery-act-made-largest-single-investment-clean-energy.

69. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 18 tbl.B-1 (showing the number of claims made for both § 25C and D). "[U]nder ARRA, average credit [claims] were higher than they had been during 2006 and 2007, reflecting the [removal of the § 25D claim ceiling]." *Id.* at app. B at 18.

70. *Id.* at app. B at 18 tbl.B-1.

71. Nicole M. Provo, *Why Congress Should Extend the Expiring Solar Energy Investment Tax Credit*, FED. LAW., Mar. 2016, at 38, 39–40; Robinson Meyer, *In Trump's First Year, the U.S. Lost Almost 10,000 Solar Jobs*, ATLANTIC (Feb. 7, 2018), https://www.theatlantic.com/science/archive/2018/02/the-us-lost-almost-10000-solar-jobs-in-2017/552485/e ("Since the end of The Great Recession, two things have been true of the American solar industry: It was growing like gangbusters, and basically everyone liked it. From 2010 to 2016, the number of solar jobs in the United States nearly tripled, roaring from about 93,000 to more than 260,000.").

72. Provo, *supra* note 71.

73. Consolidated Appropriations Act of 2016, Pub. L. No. 114-113, 129 Stat. 2242 (2015).

contrast with the Democratic majority control held in 2009.[74] More susceptible to bargaining as a result of the political transition, the credit's extension occurred as part of a Republican compromise to gain Democratic support of a removal of a ban on exports of U.S. crude oil, an exchange of a low-carbon policy to balance out a more carbon-rich policy that Republicans hoped would bring greater trade and revenue to the U.S. economy.[75]

The Consolidated Appropriations Act of 2016 only extended the credit for solar energy property at its 30% rate from 2017 through 2019.[76] Although Congress extended the 30% credit for residential solar property installed through the end of 2019, the credit was scheduled to begin phasing out in 2020, providing for a 26% credit for property expenditures qualifying in 2020.[77] The phase out continues through 2022, decreasing to a 22% credit for property expenditures qualifying in 2021 and no credit for property expenditures qualifying after 2021.[78] The credit's effectiveness for

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74. *Id.* div. P, tit. III, § 304, 129 Stat. at 3039–40; Dan Roberts et al., *Republicans Win Majority in US Senate, Giving Party Full Control of Congress*, GUARDIAN (Nov. 5, 2014, 10:30 AM), https://www.theguardian.com/us-news/2014/nov/04/us-midterm-elections-republican-wins-senate-takeover.

75. *See* Joshua D. Katz & Lisa Garrett, *Washington Update: Compromise in the Consolidated Appropriations Act: Extending Renewable Energy Tax Credits and the Lifting of the Ban on the Export of Crude Oil*, 46 TEX. ENV'T L.J. 206, 206–10 (2016) (explaining that it was unclear in 2016 whether the balance of the two provisions would result in a net loss, gain, or neither in nationwide carbon output); Richard Allan, *Congress's Budget Compromise Lifts Crude Oil Export Ban and Extends Wind and Solar Tax Credits*, MARTEN L. (Jan. 21, 2016), http://www.martenlaw.com/newsletter/20160121-congress-budget-compromise [https://web.archive.org/web/20160323085354/http://www.martenlaw.com/newsletter/20160121-congress-budget-compromise]; Debbie Carlson, *To Export or Not to Export: Partisan Divide over Ban on Foreign Sales of US Oil*, GUARDIAN (Oct. 31, 2015, 9:00 AM), https://www.theguardian.com/business/2015/oct/31/us-oil-export-ban-battle-lines-drawn-republicans-democrats (discussing the difference in the Republican support of U.S. crude oil exports based on the increased production of domestic oil, among other economy spurring factors, and the Democratic concerns over the potential environmental harms of high-carbon production and the potential for increased drilling in the United States); Steven Mufson, *The Huge Political Horse Trade in the Budget that Will Change Where the U.S. Gets Its Energy*, WASHINGTON POST (Dec. 16, 2015, 11:54 AM), https://www.washingtonpost.com/news/powerpost/wp/2015/12/16/democrats-give-up-fight-on-oil-export-ban-after-40-years/.

76. I.R.C.§ 25D(g) (Supp. 2017); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 22 tbl.B-3.

77. I.R.C. § 25D(g); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 22 tbl.B-3.

78. I.R.C. § 25D(g)–(h); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 22 tbl.B-3.

other qualifying properties was set to expire in 2016, until it was readdressed in the Bipartisan Budget Act of 2018.[79] That Act reinstated the credit for the qualifying property for which the credit was set to expire under the 2016 legislation and provided such installations with the same phase-out treatment applied to solar property.[80]

The 2018 legislation that ensured the § 25D phase out followed the 2017 establishment of a Republican majority in Congress and control of the Executive Branch under the administration of President Donald J. Trump.[81] Respecting the platform on which the Administration campaigned[82] and pursuing the mandate of the working class and rural voters that enabled the party's dominance, [83] the Administration worked to remove regulatory barriers from fossil fuel production.[84] One principle target for the Administration's regulatory rollbacks was environmental regulations put in place by the Obama Administration to try to reduce the carbon output from coal and encourage a transition to low carbon, cleaner alternatives like natural gas as well as renewable energy.[85] Despite these efforts

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79. Bipartisan Budget Act of 2018, Pub. L. No. 115-123, § 40402(c), 132 Stat. 64, 148; CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 19.

80. I.R.C. § 25D(g); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at app. B at 19.

81. *Election 2016: Republicans Retain House and Senate*, BBC (Nov. 9, 2016), https://www.bbc.com/news/election-us-2016-37917345.

82. Ashley Parker & Coral Davenport, *Donald Trump's Energy Plan: More Fossil Fuels and Fewer Rules*, N.Y. TIMES (May 26, 2016), https://www.nytimes.com/2016/05/27/us/politics/donald-trump-global-warming-energy-policy.html.

83. Johnston, *supra* note 10, at 116 (explaining that Kentucky and West Virginia, the states where many coal jobs were lost during the Obama Administration, voted overwhelmingly Republican in 2017 in part because of the association of job loss with the environmental, carbon-reducing regulations imposed on the coal industry by the Obama Administration); Gary Harki, *From Blue to Red: How the Decline of the Coal Union Helped Republicans Have a Stronghold in West Virginia*, 100 DAYS IN APPALACHIA (Feb. 15, 2017), https://www.100daysinappalachia.com/2017/02/15/blue-red-decline-coal-union-helped-west-virginia-become-republican-stronghold/; *see also* Johnston, *supra* note 10, at 116–17 (likening the regulatory rollbacks of the Trump Administration to the removal of Carter administrative regulations under the Reagan Administration); *supra* Part II.A (discussing Reagan Administration rollbacks).

84. Johnston, *supra* note 10, at 116–17; Samantha Gross, *What Is the Trump Administration's Track Record on the Environment?*, BROOKINGS INST. (Aug. 4, 2020), https://www.brookings.edu/policy2020/votervital/what-is-the-trump-administrations-track-record-on-the-environment/.

85 Johnston, *supra* note 10, at 114–19 (detailing some of the specific ways that the Obama Administration's carbon regulations harmed coal and the rollback of Obama's Clean Power Plan to transition to cleaner methods of energy production and the

to honor the Administration's promise to reinvigorate the coal industry, deregulation was insufficient to offset the industry's net losses resulting from external factors like the low cost of natural gas production that permits it to be a more dominant force in the market.[86] In contrast, the solar energy industry has continued its rapid decade-long growth.[87] According to the Solar Energy Industries Association, the solar industry "experienced an average annual growth rate of 49%" in increased solar capacity in the United States between 2009 and 2019 and provided approximately 250,000 U.S. jobs by 2019.[88] Related to Congress' deliberations for extending the credit in 2016, the solar industry saw a temporary period of job loss as of 2017.[89] Leaders in the solar industry argue that the

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plan's dismantling under the Trump Administration); Gross, *supra* note 84 (noting that the regulation reversals apply to regulations for clean water, air, and wetlands among other areas of environmental concern and attempt to help other industries, like oil production and the auto industry as well); Nadja Popovich et al., *The Trump Administration Rolled Back More Than 100 Environmental Rules*, N.Y. TIMES, https://www.nytimes.com/interactive/2020/climate/trump-environment-rollbacks-list.html (last updated Jan. 20, 2021) (providing a list of the regulations removed as of January 20, 2021).

86. Gross, *supra* note 84; *see also* Lucien Georgeson & Mark Maslin, *US Green Economy Growth Dwarfs Donald Trump's Highest Hopes for the Fossil Fuel Industry*, CONVERSATION (Oct. 15, 2019, 11:35 AM), https://theconversation.com/us-green-economy-growth-dwarfs-donald-trumps-highest-hopes-for-the-fossil-fuel-industry-123062) (arguing that the emphasis by nations around the world to grow a robust green energy market is causing green energy growth to outpace that of the fossil fuel industry).

87. *National Solar Job Census*, SOLAR FOUND. (Feb. 2020), https://www.thesolarfoundation.org/national/ ("American solar jobs have increased 167% over the past decade, adding 156,000 jobs."); *Solar Industry Research Data*, SOLAR ENERGY INDUS. ASS'N, https://www.seia.org/solar-industry-research-data (last visited Mar. 14, 2021) (stating that the number of jobs in 2019 represents a 100% increase between 2019 and 2012).

88. *Solar Industry Research Data*, *supra* note 87 (attributing ITCs as a contributing factor to the growth of the solar industry); *see also National Solar Job Census*, *supra* note 87 (defining the 249,983 U.S. solar workers "as those who spend 50% or more of their time on solar related work" and noting that there are 94,549 U.S. solar workers engaging in solar work for less than 50% of their time). *See generally infra* Part V and accompanying notes (presenting the industry data for 2020 separately in part because of the anomalous nature of unemployment during the COVID-19 pandemic throughout 2020 and to discuss the necessity for growth in the solar industry).

89. Meyer, *supra* note 71; *see also National Solar Job Census*, SOLAR FOUND., https://www.thesolarfoundation.org/solarjobscensusarchives/ (last visited Mar. 21, 2021) (providing that the almost 4% of job loss in 2017 primarily occurred in "demand-side sectors," including "installation . . . and project development"); *Solar Jobs up Nationwide and in 31 States After Two Years of Losses*, SOLAR FOUND. (Feb.

uncertainty surrounding the credit's impending 2016 expiration caused the industry to experience a surge of demand in 2016 from individuals hoping to take advantage of the credit's incentives in their remaining time.[90] Consequently, a vacuum in installation demand created a slump beginning in 2017.[91] The 2019 solar job increases "in installation and project development"[92] indicate that the certainty regarding § 25D's duration in 2018[93] and increased demand, driven in part by lowering solar prices, permitted the solar market to return to its earlier growth.[94]

At present, the fate of the § 25D credit looks grim absent the success of a congressional initiative to extend the credit. The residential credit began its step-down in 2020, giving a credit at a rate of 30% of expenditures for installations made prior to 2020, 26% for installations made throughout 2020, and 22% for installations made during the year 2021.[95] The credit is set to expire for any installations made after 2021.[96] It is clear, however, that throughout its history the fate of § 25D has been inextricably linked to the goal of U.S. job growth.[97]

E. Plans for § 25D Revival and Expansion

Proposals to alter this phase out were made amidst yet another period of tumultuous political upheaval with Democrats regaining control of the House in 2018 and continued partisan division in the run-up to the 2020 presidential election. In this atmosphere, bills were proposed in both chambers of Congress in July 2019 to extend the renewable energy credit with a gradual step-down through

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19, 2020), https://www.thesolarfoundation.org/solar-jobs-up-nationwide-and-in-31-states-after-two-years-of-losses/.

90. Meyer, *supra* note 71; *Solar Jobs up Nationwide and in 31 States After Two Years of Losses*, *supra* note 89.

91. Meyer, *supra* note 71; *Solar Jobs up Nationwide and in 31 States After Two Years of Losses*, *supra* note 89.

92. *Solar Jobs up Nationwide and in 31 States After Two Years of Losses*, *supra* note 89.

93. *See* Meyer, *supra* note 71 (noting interview with Trevor Houser, a Rhodeum Group economist, and discussing the slumps that wind energy production experiences each time its corresponding credit is cut).

94. *Solar Jobs up Nationwide and in 31 States After Two Years of Losses*, *supra* note 89.

95. I.R.C. § 25D(g).

96. *Id.* § 25D(h).

97. *See generally supra* Part II and accompanying notes.

2025.[98] The bills, which were primarily Democratic proposals with only a few Republican proponents, ultimately lacked the sufficient level of bipartisan support to become law.[99] The legislative rejection of the bills occurred despite the significant lobbying efforts of environmental and industry leaders[100] as well as support from local government authorities.[101]

Resembling the economy-stimulating goals of the 2009 ARRA, the GREEN Act is a recent proposition from Democrats that recommends bolstering the renewable energy industry as one important method of recovering from the severe economic downturn and job losses resulting from the 2020 COVID-19 pandemic.[102] As part of the larger transportation and infrastructure Moving Forward Act,[103] the GREEN Act was passed by the House in July 2020 and offers provisions that would delay the § 25D expiration through the end of 2027.[104] In particular, the Act would provide for the extension of the 30% credit on expenditures for qualified property installed

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98. S. 2289, 116th Cong. (2019); H.R. 3961, 116th Cong. (2019); Christian Roselund, *5-year ITC Extension Introduced in U.S. House, Senate*, PV MAG. (July 25, 2019), https://pv-magazine-usa.com/2019/07/25/breaking-5-year-itc-extension-introduced-in-u-s-house-senate/.

99. Nichola Groom, *Disappointment for Clean Energy Firms at U.S. Spending Bill*, REUTERS (Dec. 17, 2019, 11:20 AM), https://www.reuters.com/article/us-usa-budget-renewables/disappointment-for-clean-energy-firms-at-u-s-spending-bill-idUSKBN1YL1XU; Roselund, *supra* note 98.

100. Doug Sword, *House Democrats Unveil Energy Package with More Than 20 Tax Incentives*, CQ ROLL CALL (Nov. 19, 2019), https://1.next.westlaw.com/ (search "2019 WL 6125010").

101. *Hundreds of Mayors Call on Congress to Extend Solar Investment Tax Credit*, SOLAR ENERGY INDUS. ASS'N (Oct. 22, 2019), https://www.seia.org/news/hundreds-mayors-call-congress-extend-solar-investment-tax-credit.

102. H.R. 7330, 116th Cong. § 302 (2020) (referred to the U.S. House of Representatives Ways and Means Committee); MIKE THOMPSON, GROWING RENEWABLE ENERGY AND EFFICIENCY NOW (GREEN) ACT (n.d.) (asserting that a goal of the proposed Act was to "[b]uild[] on current successful tax incentives that promote the deployment of green energy technologies, while providing new incentives for activities that reduce greenhouse gas emissions").

103. H.R. 2, 116th Cong. § 90422(a) (2020); Press Release, Mike Thompson, Rep., U.S. House of Reps., Thompson Votes to Pass Moving Forward Act (July 1, 2020), https://mikethompson.house.gov/newsroom/press-releases/thompson-votes-to-pass-moving-forward-act (quoting Representative Mike Thompson (CA-D), who said of the $1.5 trillion "comprehensive transportation and infrastructure" Act, "This legislation will . . . help create good-paying jobs that we need now more than ever as we face recovery from the Coronavirus pandemic. . . . [A]nd help tackle the threat of climate change.").

104. H.R. 2, 116th Cong. § 90422(a).

through the end of 2025, after which the credit would lower to 26% for qualified property installed through 2026, 22% for property installed through 2027, and 0% thereafter.[105] However, like the attempts that have come before it in recent years, the Act has been stalled by both Senate and executive opposition, and it is unlikely to survive the current political field.[106]

Moving into 2021, as the Joseph R. Biden, Jr. Administration settles in, federal policy is likely to experience a dramatic and substantial emphasis towards mitigating central causes of climate change and supporting clean and renewable sources of energy, a shift away from the fossil fuel industry encouragement of the preceding administration.[107] In particular, Biden's transition plan promises to invest in U.S. infrastructure, including restructuring U.S. energy production "to generate clean, American-made electricity to achieve a carbon pollution-free power sector by 2035" and encouraging the construction of sustainable homes, both goals which would be aided by the investment incentive of the § 25D credit.[108] In addition to the immediacy of the threats of the climate

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105. *Id.* (proposing amendments to I.R.C. § 25D(g)–(h)).

106. Justin Harclerode, *What They Are Saying About the Speaker's Partisan Infrastructure Wish List*, COMM. ON TRANSP. & INFRASTRUCTURE (July 1, 2020), https://republicans-transportation.house.gov/news/documentsingle.aspx?DocumentID=404945 (explaining that opposition from House Republicans manifested in part because Democrats used their House majority to push the Act through rather than seeking additional bipartisan support despite the expressed concerns of conservative leaders and interest groups that the Act spent too much and would not provide the necessary improvements to existing infrastructure in all parts of the country); Sergei Klebnikov, *Senate Sleeps on House Democrats' $1.5 Trillion Infrastructure Bill—Here's Why It's Doomed*, FORBES (July 3, 2020, 1:58 PM), https://www.forbes.com/sites/sergeiklebnikov/2020/07/03/senate-sleeps-on-house-democrats-15-trillion-infrastructure-bill-heres-why-its-doomed/?sh=720b87856ee8 (quoting Senate Majority Leader Mitch McConnell, who stated, "This so-called infrastructure bill would siphon billions in funding from actual infrastructure to funnel into climate change policies," and President Trump, who promised to veto the bill, calling the Act "full of wasteful 'Green New Deal' initiatives").

107. *The Biden Plan for a Clean Energy Revolution and Environmental Justice*, JOEBIDEN.COM, https://joebiden.com/climate/ (last visited Mar. 14, 2021) (stating that the Biden Administration would reverse the tax policies of the preceding administration and "end[] subsidies for fossil fuels" within the tax code); *The Biden-Harris Administration Immediate Priorities*, WHITEHOUSE.GOV, https://www.whitehouse.gov/priorities/ (last visited Mar. 14, 2021); *see supra* Part II.D and accompanying notes (discussing energy policies support under the Trump Administration.).

108. *The Biden Plan to Build a Modern, Sustainable Infrastructure and an Equitable Clean Energy Future*, JOEBIDEN.COM, https://joebiden.com/clean-energy/ (last visited Mar. 14, 2021).

crisis, the promises of the Biden plan are also clearly attributable to the significant job losses facing the country as a result of the COVID-19 pandemic that spread across the globe throughout 2020.[109] Expanding tax provisions like § 25D is one tool that the incoming administration has noted as a means of achieving these goals.[110]

III. SECTION 25D DEFICIENCIES AND DISPARITIES

Although the § 25D credit was intended to encourage more residential property holders to invest in renewable energy, and although the market has seen an overall increase since § 25D's 2005 inception, the overall transition to renewable energy has not been as significant as Congress may have hoped.[111] The Congressional Research Service ("CRS") in analyzing this provision notes that "[a] rational consumer would be expected to invest in an energy-efficiency technology if the savings that resulted from using the property were greater than the cost of the property."[112] If consumers were to act according to this principle, residential investment in renewable energy would achieve economic efficiency such that everyone capable of investing in renewable energy would do so.[113] However, the CRS notes that instead of economic efficiency, residential property users in the United States have engaged in "the energy-efficiency paradox" by not investing in renewable energy despite its potential long-term savings benefits.[114] According to CRS, the "energy-efficiency paradox" may be explained in part by several market failures that the § 25D credit fails to adequately address, resulting in inadequate investment in renewable energy.[115] These

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109. *Id.*; *see infra* Part V discussion of COVID-19 related job loss.

110. *The Biden Plan to Build a Modern, Sustainable Infrastructure and an Equitable Clean Energy Future*, *supra* note 108 (stating that the Biden campaign proposed "[r]eform[ing] and extend[ing] the tax incentives we know generate energy efficiency and clean energy jobs" as a means of transitioning to a system of clean electricity across the country and encouraging job growth in that industry).

111. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 2–4.

112. *Id.* at 4.

113. *Id.*

114. *Id.*

115. *Id.* at 4–5 ("25D credits do not directly correct for some of the market failures and market barriers . . . which may limit their impact on increasing energy efficiency."); PAUL W. PARFOMAK ET AL., CONG. RSCH. SERV., R40670, ENERGY EFFICIENCY IN BUILDINGS: CRITICAL BARRIERS AND CONGRESSIONAL POLICY 4–5 & tbl.I (2009).

market failures include misapplied advantages between high and low-income individuals, such as renters and landlords, an inadequacy of knowledge and information sharing, and access to capital failures for lower-income individuals.[116]

The first market failure not addressed by the § 25D credit is the problem of misapplied advantages whereby those who have the greatest incentive to take advantage of the credit do not have the necessary means or opportunities to do so and those who have the means to take advantage of the credit have little incentive to act.[117] The credit is available to any taxpayer who makes the qualifying improvements to their residence.[118] Nevertheless, a market failure arises because renters are likely to face barriers to reaping the full benefits of the credit.[119] Although it is not expressly stated that renters may be eligible for the credit, the statute distinguishes the qualification of fuel cell property from the other forms of § 25D qualifying property by requiring that it be installed in "a principal residence (within the meaning of [I.R.C. §] 121)"[120] which addresses the sale of property owned by the taxpayer.[121] Other aspects of § 25D apply to any principal residence rather than just those within the meaning of § 121.[122] This distinction indicates that for all property qualifying for the § 25D credit, excluding fuel cell property, there are no limitations on the ownership status of the residence besides that the taxpayer resides there for some period of time (i.e., that the property be their principal residence).[123] Therefore, it may be

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116. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 4–6; Melissa Powers, *An Inclusive Energy Transition: Expanding Low-Income Access to Clean Energy Programs*, 18 N.C. J.L. & TECH. 540, 544–45 (2017). *See generally* Shelley Welton & Joel Eisen, *Clean Energy Justice: Charting an Emerging Agenda*, 43 HARV. ENV'T L. REV. 307 (2019) (discussing the potential inequities of cost and access faced by low-income individuals that may inherently result from a transition to clean energy absent some intervening measures to better disperse the benefits).

117. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 4–9; PARFOMAK ET AL., *supra* note 115, at 5–6.

118. Section 25D only requires that the residence be a principal residence of the taxpayer with regard to fuel cell property. I.R.C. § 25D(d)(3); INTERNAL REVENUE SERV., NOTICE 2013-70: Q&A ON TAX CREDITS FOR SECTIONS 25C AND 25D 3–4 (2013).

119. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 8–9; PARFOMAK ET AL., *supra* note 115, at 6.

120. I.R.C. § 25D(d)(3); INTERNAL REVENUE SERV., *supra* note 118; *see* I.R.C. § 121(a).

121. I.R.C. § 121(a).

122. *Id.* § 25D(d); INTERNAL REVENUE SERV., *supra* note 118; *see* I.R.C. § 121(a).

123. I.R.C. § 25D(d); INTERNAL REVENUE SERV., *supra* note 118.

reasonably inferred that both homeowners and renters may be eligible to claim the § 25D credit.[124] Renters are more likely to be younger and have lower incomes than most homeowners, and therefore, they represent the portion of the resident population who could most benefit from the § 25D credit's ability to reduce the cost of investments in energy-efficient property.[125]

A number of factors, however, diminish the value of the investment incentives that the credit may offer to renters.[126] First, renters may face structural restrictions such as the unavailability of a roof or yard in an apartment building on which to install a solar panel or contractual restrictions such as a lease's limitations on a tenant's ability to modify the property.[127] Second, many renters are more transient than homeowners and are less likely to stay in a residence long enough to take advantage of the long-term savings that would make an investment in energy efficient property worthwhile.[128] Finally, for a renter that does not pay utility costs directly, the renter's landlord as the utility-payer will be the beneficiary of any savings gained from an investment in energy efficient property.[129] Furthermore, because the landlord may claim a credit for energy-efficient property investments in the rental property under I.R.C. § 48,[130] the landlord could benefit both from the § 48 credit and some of the utility savings generated from any solar investments on the property which may or may not benefit the

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124. *See* I.R.C. § 25D(d); INTERNAL REVENUE SERV., *supra* note 118.

125. *See* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 9–10 (stating that low-income individuals only make up approximately 11% of residential energy ITC claims which includes both § 25C and § 25D ITCs); Anthony Cilluffo et al., *More U.S. Households Are Renting than at Any Point in 50 Years*, PEW RSCH. CTR. (July 19, 2017), https://www.pewresearch.org/fact-tank/2017/07/19/more-u-s-households-are-renting-than-at-any-point-in-50-years/.

126. *See* Welton & Eisen, *supra* note 116, at 339 (noting that the lack of a suitable rooftop or renting conditions may prevent some individuals from taking advantage of rooftop solar programs, and this is relevant to the discussion of solar panels in general even though this Article specifically discusses state net metering programs).

127. Sarah Golden, *What's New with Community Solar?*, GREEN BIZ (Apr. 5, 2019), https://www.greenbiz.com/article/whats-new-community-solar; *Community Solar*, SOLAR ENERGY INDUS. ASS'N, https://www.seia.org/initiatives/community-solar (last visited Mar. 15, 2021).

128. *See* Cilluffo et al., *supra* note 125.

129. *See* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 8–9; PARFOMAK ET AL., *supra* note 115, at 5–6.

130. I.R.C. § 48(a)(3).

renter in the form of reduced rent.[131] It is evident, however, that renters may struggle to receive the full benefits of § 25D, and the credit thus falls short of its intended reach to low-income individuals.[132]

Additionally, a renter who pays utility costs directly may only take advantage of energy savings for as long as the renter stays in the property because the renter is unlikely to be able to transfer those benefits to subsequent residences. Thus, some of the renter's expected energy savings will instead benefit the renters that follow.[133] For these reasons, the § 25D credit fails to advantage individuals who would most rely on the incentive to make investment worthwhile and instead advantages individuals for whom the incentive is less valuable.[134] Furthermore, this deficiency becomes increasingly concerning when viewed in light of the increasing number of U.S. taxpayers residing in rental property.[135] One method of correcting the credit's failures may be to more fully embrace the opportunities offered by community solar programs.[136]

Second, the CRS found that the § 25D credit is insufficient because it fails to overcome the financial burdens faced by low-income individuals.[137] CRS argued that because of the substantial initial payments that must be made to install renewable energy property, those investments are practically unavailable to low-income taxpayers who cannot afford the large upfront costs regardless of the potential future savings generated by the investment.[138] In addition, the CRS recognized that low-income individuals may face further economic strain as a result of obtaining the necessary funds for renewable energy property investments, such as the added debt from interest on a loan or a loss of savings

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131. *See* PARFOMAK ET AL., *supra* note 115, at 5–6.

132. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 8–9; *see* PARFOMAK ET AL., *supra* note 115, at 5–6.

133. *See* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 8–9.

134. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 6–9; *see* PARFOMAK ET AL., *supra* note 115, at 5–6.

135. Cilluffo et al., *supra* note 125.

136. *See infra* Part IV and accompanying notes (describing the potential benefits of community solar programs with regard to § 25D).

137. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 5–8; PARFOMAK ET AL., *supra* note 115, at 5–7.

138. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 5–8; *see* PARFOMAK ET AL., *supra* note 115, at 6–8 (discussing the cost planning that many builders and developers undergo in choosing energy efficient property to install); Powers, *supra* note 116.

that may have been allocated for another purpose.[139] Although the § 25D credit does help alleviate some of these initial costs by allowing the claim to be made for the same year that the installation was made,[140] the credit still would not provide an immediate relief because the credit cannot be received until the claims for that taxable year have been filed and processed.[141] In addition, because the credit is non-refundable, a taxpayer may only receive the credit to the extent that it does not exceed the individual's tax liability for that taxable period.[142] Any credit exceeding the liability for that taxable year is then added to the credit that may be earned in the subsequent taxable year.[143] This means that low-income individuals may not benefit from larger investments intended to result in larger energy savings because individuals with lower taxable incomes may not receive the full benefit of the credit until subsequent years, if at all.[144] Furthermore, because of the 2017 doubling of the standard deduction, the tax liability for many low-income individuals has been reduced, making it even more difficult for these low-income taxpayers to take advantage of the § 25D credit in the same year that the high initial cost payments are made.[145] Despite the potential delay in the receipt of the credit's full benefit, the energy savings from the qualifying property installations should be received by the taxpayer immediately upon the installation's initial use.[146] Nevertheless, the return on investment for energy-efficient property is earned throughout the long term, and immediate returns are unlikely to compensate for the high initial investment costs without

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139. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 6 n.14 (arguing that the difficulties in obtaining loans for some low-income individuals will exacerbate the problem of initial high costs, stating, "Low income borrowers that are given loans are likely to face higher interest rates. Since low income individuals face higher interest rates, they are likely to use a higher discount rate when evaluating energy-saving investments. . . . [And] fewer projects will appear to have long-run cost savings.").

140. I.R.C. § 25D(e)(8) (stating in subsection (A) that the expenditure may be claimed when the energy-efficient property is installed; further stating in subsection (B), the expenditure may be claimed whenever newly-built or rebuilt residential property and its energy efficient property are put into use by the taxpayer).

141. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 8–9.

142. I.R.C. § 25D(c); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 10; OFF. OF ENERGY EFFICIENCY & RENEWABLE ENERGY, *supra* note 47.

143. I.R.C. § 25D(c); CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 10; OFF. OF ENERGY EFFICIENCY & RENEWABLE ENERGY, *supra* note 47.

144. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 6.

145. Act of Dec. 22, 2017, Pub. L. No. 115-97, § 11021, 131 Stat. 2054, 2072–73 (codified as amended at I.R.C. § 63).

146. *See* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 6–8.

some § 25D aid.[147] The inability of § 25D to overcome the financial burdens of low-income individuals is illustrated by the sparsity of § 25D claims that have actually been filed by low-income individuals.[148]

In addition to these § 25D deficiencies, CRS also argued that information gaps for potential investors—uncertainty about actual installation costs, long-term maintenance costs, and accurate potential savings estimates—restrict the level of investment that the credit should otherwise promote.[149] Therefore, with multiple failings, the § 25D credit clearly serves a regressive function by benefitting higher income individuals, particularly homeowners, over low-income taxpayers who might benefit more significantly from an effective renewable energy credit.[150]

IV. COMMUNITY SOLAR

Despite these market failures, the § 25D credit has been highly successful in encouraging the expansion of and job growth in renewable energy industries, especially the solar industry.[151] To further encourage renewable energy investment at the local level and perhaps reach residents that the § 25D credit cannot, many state and local governments have adopted their own policies to provide relief for the costs of renewable energy investment.[152] For example, several states like Arizona have adopted their own forms of renewable energy credits, resembling the § 25D credit closely, offsetting state taxes.[153] However, these programs are similarly plagued by the regressive and disparate benefit to wealthy

147. *See id.*

148. *Id.* at 6–10.

149. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 7–9; PARFOMAK ET AL., *supra* note 115, at 6–7.

150. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 9–10 (stating that "tax units with the highest income level receive on average a credit that is approximately seven times the average credit value for the lowest income tax unit" and discussing both the § 25C and § 25D credits); Dan Quinley, *More Power to the Wealthy: Renewable Energy Tax Programs, Market Distortions, and the Ramifications on the Cost of Electricity*, 40 ENV'T L. & POL'Y J. 185, 199–200, 213–14 (2017).

151. Provo, *supra* note 71, at 39; *see* Meyer, *supra* note 71.

152. Quinley, *supra* note 150, at 198 (stating with regard to many types of renewable energy tax incentive programs beyond residential ITCs, "Among the fifty states, there have been numerous other tax programs. [As of 2017], there are 230 different state programs . . . .").

153. *Id.* at 199–200.

homeowners that has accompanied the federal § 25D credit.[154] In seeking alternatives, many state and local governments have engaged in a more communal approach to renewable energy investment, allowing for greater cost-sharing and investment access to all levels of income.[155]

In the last three years, the United States has seen significant growth in the number of community solar programs.[156] A community solar program "refers to local solar facilities shared by multiple community subscribers who receive credit on their electricity bills for their share of the power produced."[157] Community solar programs may take many forms including those owned by utility companies in which members of the public may voluntarily participate, those sponsored through a collaboration of individual investors using a special purpose entity, and those owned and operated by a non-profit organization.[158]

Music City Solar is a community solar program that was introduced in 2018 to service residents of Nashville, Tennessee.[159] The program was created through a public-private partnership between local and state utility providers and prominent business leaders in the area.[160] Music City Solar offers residents and commercial businesses two opportunities to invest in solar energy.[161] First, individuals may pay a one-time subscription fee of $215 to become subscribed to a single solar panel for a twenty-year period.[162] Then, for the duration of the subscription term, the subscriber receives an electric bill credit tied to the amount of energy produced by their panel.[163] The subscriber's electrical bill for each month will

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154. *Id.* at 199–200, 209–11.

155. Golden, *supra* note 127; *Community Solar*, *supra* note 127.

156. Golden, *supra* note 127; *Community Solar*, *supra* note 127.

157. *Community Solar*, *supra* note 127.

158. JASON COUGHLIN ET AL., OFF. OF ENERGY EFFICIENCY & RENEWABLE ENERGY: U.S. DEP'T OF ENERGY, A GUIDE TO COMMUNITY SOLAR: UTILITY, PRIVATE, AND NON-PROFIT PROJECT DEVELOPMENT 6 (2010).

159. Nate Rau, *Nashville's First Community Solar Power Project Heading to Madison*, TENNESSEAN, https://www.tennessean.com/story/money/2018/01/05/nashville-community-solar-project-madison-music-city/1004909001/ (last updated Jan. 5, 2018, 9:46 AM).

160. *Id.*

161. *Frequently Asked Questions*, NASHVILLE ELEC. SERV., http://gosolarmusiccity.com/faq/ (last visited Mar. 17, 2021).

162. *Id.* (adding that additional applicable fees may apply and that the fee "covers the cost of construction, operations, and maintenance and administrative fees for the entire length of the [twenty-]year program").

163. *Id.*

then be reduced by the amount of the solar energy credit for that month.[164] As a second investment option, Music City Solar allows individuals to donate towards subscription fees for low-income individuals seeking to participate or gift a panel subscription to other individuals so that they may receive the benefit of the credit on their own electric bill.[165] At its opening in 2018, the program made 17,020 solar panels available for public subscription on a first-come-first-serve basis.[166] Those attempting to subscribe after panel availability has been depleted are placed on a waiting list to await future availability.[167] As of March 27, 2020, Nashville Electric Service reported that approximately 15,000 solar panels remained available for subscription, and of the approximately 2,000 panels subscribed to as of March 2020, the majority of subscribers were residential citizens rather than commercial businesses.[168]

The IRS has not yet made it clear whether and to what extent the § 25D credit is available to individual participants in community solar programs.[169] In one private letter ruling, the IRS did conclude that the credit may apply to the investments of an individual who has a direct interest in solar panels that the individual purchased and installed as part of a community array of panels purchased and installed by other individuals.[170] In contrast, participants in a community solar program like Music City Solar only hold an indirect interest in solar panels that were purchased and installed by another entity, and the ruling does not address whether investment in such an indirect interest qualifies for the § 25D credit.[171] Further,

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164. *Id.*

165. *Id.*

166. *Music City Solar*, NASHVILLE ELEC. SERV., https://www.nespower.com/content.aspx?page=musiccitysolar [https://web.archive.org/web/20201112025533/https://www.nespower.com/content.aspx?page=musiccitysolar] (last visited Mar. 17, 2021).

167. *Frequently Asked Questions*, *supra* note 161.

168. E-mail from Holden Sheriff, Commc'ns Specialist II, Nashville Elec. Serv., to Kelsey C. Morgan, Student, Univ. of Tenn. Coll. of L. (Mar. 27, 2020, 09:58 AM) (on file with author).

169. *Does the Federal Investment Tax Credit (ITC) Apply to Community Solar Projects?*, GEO. WASH. UNIV. SOLAR INST., https://solar.gwu.edu/does-federal-investment-tax-credit-itc-apply-community-solar-projects (last visited Mar. 17, 2021). *But see* I.R.S. Priv. Ltr. Rul. 201536017, at 3–4 (Sept. 4, 2015) (stating that non-resident solar panels qualified for the § 25D tax credit in certain specific circumstances).

170. I.R.S. Priv. Ltr. Rul. 201536017, at 2–4.

171. *See id.*; *see also* I.R.S. Priv. Ltr. Rul. 201718017, at 2–8 (May 5, 2017) (indicating that the IRS views the utility-owned community solar program addressed

an IRS private letter ruling is only precedential to the taxpayer for whom it is issued, and therefore, the rulings do not provide a generally-applicable rule regarding the availability of the credit to community solar participants.[172] Without an express decision to assure participants that they may receive the benefits of the § 25D credit, individuals unable to access the incentives of residential renewable energy installations may face similar incentive barriers to participation in community solar programs.[173]

Despite the difficulties in applying the § 25D credit to community solar investments, programs like Music City Solar can address those inefficiencies that plague the § 25D credit as it is applied to conventional at-home installations. First, unlike § 25D, community solar programs distribute the economic advantages of investment to all participants.[174] Any individual, whether renter, landlord, or homeowner, may invest in a community solar program, whether for themselves or another, and receive the same benefit from the savings as any other investor.[175] In contrast, although any resident may claim the § 25D credit for a residential installation, many renters may be unable to take full advantage of the investment incentive that the credit offers due to structural or contractual restrictions on the installation itself or because the renter is unlikely to receive the long-term energy savings that such an investment promises.[176] However, unlike the more permanent installations that § 25D rewards, community solar programs remove the structural and contractually-based restrictions on renewable energy installations by allowing individuals to invest in subscriptions that follow the person, not their property, throughout

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by the letter to be owned by the utility company and not subscribers to the program); *Does the Federal Investment Tax Credit (ITC) Apply to Community Solar Projects?*, *supra* note 169 ("[S]ince these projects vary in structure, claiming the tax credit may lead to additional complications due to other relevant tax rules.").

172. *See* I.R.S. Priv. Ltr. Rul. 201718017, at 8 ("This ruling is directed only to the taxpayer who requested it. Section 6110(k)(3) of the Code provides it may not be used or cited as precedent."); I.R.S. Priv. Ltr. Rul. 201536017, at 4 (same). *But see Does the Federal Investment Tax Credit (ITC) Apply to Community Solar Projects?*, *supra* note 169 ("While technically a private letter ruling only applies to its intended recipient, it is often interpreted as precedence for how the IRS would rule in similar circumstances.").

173. OFF. OF ENERGY EFFICIENCY & RENEWABLE ENERGY, *supra* note 47.

174. *See* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 5–6; PARFOMAK ET AL., *supra* note 115, at 5–6.

175. *Frequently Asked Questions*, *supra* note 161.

176. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 7; *see* INTERNAL REVENUE SERV., *supra* note 118.

the geographic area that the utility program serves.[177] This program allows an individual to carry their investment from one residence to the next with much greater mobility within a utility district than the § 25D credit allows. Furthermore, unlike the installations of individual homeowners, community solar programs allow individuals to invest in a community benefit rather than a personalized benefit.[178] The program seeks to inspire collective action for community climate change that would allow any subscriber to receive a common good benefit even if not a direct financial one.[179] Because there are generally more renters than homeowners in the United States[180] it is clear that community solar is able to give greater access to a significant portion of U.S. taxpayers that have been previously underserved by § 25D.

Community solar also eliminates some of the initial cost burdens and uncertainties that cause some low-income individuals to decline taking advantage of § 25D.[181] As in the case of Music City Solar, the cost of an initial subscription fee to a community solar program is generally less than the cost of installation and maintenance of a rooftop solar panel even with the § 25D credit.[182] However, the long-term energy savings between the two systems should not differ significantly as the same amount of energy is being produced by the solar panels, whether at home or at a community solar location, and thus, the similar energy savings should be retained.[183] Programs like Music City Solar also allow individuals to participate in a transition to renewable energy to whatever degree they are able and do not

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177. *Frequently Asked Questions*, *supra* note 161.

178. Golden, *supra* note 127; *Community Solar*, *supra* note 127; *Frequently Asked Questions*, *supra* note 161.

179. *See* Golden, *supra* note 127; *Community Solar*, *supra* note 127; *Frequently Asked Questions*, *supra* note 161.

180. Cilluffo et al., *supra* note 125.

181. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 5–7; *Frequently Asked Questions*, *supra* note 161. *But see* Powers, *supra* note 116, at 560–64 (arguing that without some form of policy adjustment, community solar projects run through net-metering programs may create cost burdens that disadvantage low-income individuals); Welton & Eisen, *supra* note 116, at 338–42 (discussing the benefits of policy support for renewable energy programs like community solar).

182. *See Community Solar*, *supra* note 127; *Frequently Asked Questions*, *supra* note 161; *How Much Does a Solar Panel Installation Cost?*, ENERGYSAGE, https://news.energysage.com/how-much-does-the-average-solar-panel-installation-cost-in-the-u-s/ (last visited Mar. 18, 2021) ("The cost of solar panels in 2021 is about $20,000 after tax credits ($2.81/Watt for a 10 kW system[).]").

183. *See Community Solar*, *supra* note 127; *Frequently Asked Questions*, *supra* note 161.

require individuals to be financially responsible for the full initial cost burden of the installation or subsequent maintenance costs.[184] In addition, although the benefits of energy-savings may be realized as early as the next month's electric bill, regardless whether an investment is made in at-home installations or community solar programs, a community solar program investor is unlikely to face as high an initial cost or the recurring maintenance costs that an at-home installation may require.[185] Therefore, the low initial investment costs that community solar provides would reduce the financial burdens caused by the delayed recovery of the § 25D investment return.[186]

Community solar also provides the benefit of being a more transparent and public program that can more effectively encourage a community-wide transition to renewable energy than the § 25D credit for private investment could promote.[187] In this manner, community solar programs allow individuals to participate to whatever degree they desire and enter the investment with lower initial costs.[188] Similarly, information gaps are significantly reduced with community solar because there is a greater amount of data available to a community-wide project to predict the actual energy savings that may result from the subscription which is unlike the savings uncertainty faced by an individual homeowner.[189] Thus, the community-wide effort to transition to renewable energy provides

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184. *Frequently Asked Questions*, *supra* note 161.

185. *Frequently Asked Questions*, *supra* note 161; *see* Golden, *supra* note 127; *Community Solar*, *supra* note 127. For the Music City Solar program, "[b]ased on preliminary energy output calculations, the annual solar credit is approximately $11.88 per panel." *Frequently Asked Questions*, *supra* note 161. Based on this estimate, it would take a little over eighteen years before a subscriber could recover the $215 subscription fee without considering any additional applicable fees. This permits twenty-year subscribers to earn only a minimal profit on their investment. Therefore, although one benefit of participation in the community solar program is to join a community-wide effort to transition to renewable energy, these estimates make it clear that the addition of the § 25D credit would aid in making the recovery of a monetary benefit from community solar participation more profitable.

186. *See* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 8–9; *Frequently Asked Questions*, *supra* note 161.

187. *See* Golden, *supra* note 127; *Community Solar*, *supra* note 127; *Frequently Asked Questions*, *supra* note 161.

188. *See* Golden, *supra* note 127; *Community Solar*, *supra* note 127; *Frequently Asked Questions*, *supra* note 161.

189. *See* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 7–9; PARFOMAK ET AL., *supra* note 115, at 6–8; *Community Solar*, *supra* note 127.

greater opportunities and security for low-income individuals to participate more effectively in a renewable energy investment.

V. NEXT STEPS FOR § 25D

The history of the § 25D credit indicates that one of its more essential legislative functions has been to promote industry and job growth.[190] Beginning in early 2020, this function of a credit expansion became increasingly valuable to necessary economic growth as nations across the globe rapidly began to shutter society in an effort to resist the devastating spread of COVID-19.[191] For much of March through May 2020, strict social distancing and stay-at home orders were issued by U.S. state and local governments, forcing many businesses to shut down during that period.[192] Between March and April 2020, the U.S. unemployment rate rose to 14.7% from its 4.4% rate in March 2020 in conjunction with the loss of 20.5 million jobs.[193] As the first wave of pandemic infections ebbed

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190. *See* Provo, *supra* note 71; Meyer, *supra* note 71.

191. *Coronavirus: The World in Lockdown in Maps and Charts*, BBC (Apr. 6, 2020), https://www.bbc.com/news/world-52103747 ("Well over 100 countries worldwide had instituted either a full or partial lockdown by the end of March 2020, affecting billions of people. And many others had recommended restricted movement for some or all of their citizens."); *Timeline: How the Global Coronavirus Pandemic Unfolded*, REUTERS (June 28, 2020, 6:07 PM), https://www.reuters.com/article/us-health-coronavirus-timeline/timeline-how-the-global-coronavirus-pandemic-unfolded-idUSKBN23Z0UW.

192. Amanda Moreland et al., *Timing of State and Territorial COVID-19 Stay-at-Home Orders and Changes in Population Movement*, CTR. FOR DISEASE CONTROL & PREVENTION (Sept. 4, 2020), https://www.cdc.gov/mmwr/volumes/69/wr/mm6935a2.htm ("During March 1–May 31, 42 [U.S.] states and territories issued mandatory stay-at-home orders, affecting 2,355 (73%) of 3,233 U.S. counties.").

193. The Econ. Daily, *Payroll Employment Down 20.5 Million in April 2020*, U.S. BUREAU OF LAB. STAT. (May 12, 2020), https://www.bls.gov/opub/ted/2020/payroll-employment-down-20-point-5-million-in-april-2020.htm; The Econ. Daily, *Unemployment Rate Rises to Record High 14.7 Percent in April 2020*, U.S. BUREAU OF LAB. STAT. (May 13, 2020), https://www.bls.gov/opub/ted/2020/unemployment-rate-rises-to-record-high-14-point-7-percent-in-april-2020.htm?view_full (explaining that the increased rate reflects an increase in "[t]he number of unemployed persons . . . by 15.9 million to 23.1 million . . . ."; further noting that the April 2020 unemployment rate was "the highest rate and the largest over-the-month increase in the history of the data (available back to January 1948)" and "reflect[s] the effects of the COVID-19 pandemic and efforts to contain it."); *see also* Scott Horsley, *One for the History Books: 14.7% Unemployment, 20.5 Million Jobs Wiped Away*, NPR (May 8, 2020, 8:35 AM) ("[T]he headline unemployment figure includes only people who are actively looking for work and those on temporary furlough, ignoring millions more who have been involuntarily idled by the pandemic. A broader government

only slightly during the summer months, some businesses were able to reopen under strict social-distancing guidelines. However, a surge of infections has accompanied the fall and winter months, and the public health crisis has spurred a new round of economically-damaging shutdowns across the country.[194]

Although several months of learning to navigate a COVID-19 world have allowed some unemployment recovery with the unemployment rate decreasing to 6.7% as of November 2020, the rate nevertheless demonstrates that there is significant progress to be made particularly when compared with the 3.5% unemployment rate of November 2019 just one year prior.[195] The U.S. economy has also descended into a deep recession in terms of other metrics, including a steep decline in national gross domestic product.[196]

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measure that includes people who've given up looking for work and those who are working less than they would like climbed to 22.8%."). The solar industry alone lost approximately 65,000 jobs between February and May of 2020. *COVID-19 Erases Five Years of Solar Job Growth*, SOLAR ENERGY INDUS. ASS'N (May 18, 2020), https://www.seia.org/news/covid-19-erases-five-years-solar-job-growth.

194. David J. Lynch, *Raging Virus Triggers New Shutdown Orders and Economy Braces for Fresh Wave of Pain*, WASHINGTON POST (Nov. 14, 2020, 6:03 PM), https://www.washingtonpost.com/business/2020/11/14/coronavirus-shutdown-orders-economy/#main-content.

195. *Employment Situation News Release*, BUREAU OF LAB. STAT., (Dec. 4, 2020, 8:30 AM), https://www.bls.gov/news.release/archives/empsit_12042020.htm. The same BLS survey data reveals that the unemployment rate has decreased from 14.7% to 6.7% between April and November 2020. *See id.* However, 36.9% of unemployed individuals have been unemployed for twenty-seven weeks or more; at this level, the twenty-seven weeks or more unemployed population is the category with the largest share of the unemployed population, which is a shift from April 2020 when about half of the unemployed population were those who had been unemployed for five weeks or less. The Econ. Daily, *36.9 Percent of Unemployed Jobless 27 Weeks or More as Pandemic Continues*, BUREAU OF LAB. STAT. (Dec. 9, 2020), https://www.bls.gov/opub/ted/2020/36-point-9-percent-of-unemployed-jobless-27-weeks-or-more-as-pandemic-continues-november-2020.htm. This indicates that although the unemployment rate has improved in that six-month period, much of the November 2020 unemployment problem is likely a continuing result of the early shutdowns during the pandemic crisis. *Id.*

196. Linda Yueh, *Looking Ahead to 2021 and the Economic Impact of Covid-19*, FORBES (Dec. 15, 2020, 5:46 AM), https://www.forbes.com/sites/lbsbusinessstrategyreview/2020/12/15/looking-ahead-to-2021-and-the-economic-impact-of-covid-19/?sh=1985c8e01720 (arguing that individual national recoveries will vary based on how much capital the national government is able to expend to return output production back to pre-COVID-19 levels); *see also* Lauren Bauer et al., *Ten Facts About COVID-19 and the U.S. Economy*, BROOKINGS INST. (Sept. 17, 2020), https://www.brookings.edu/research/ten-facts-about-covid-19-and-the-u-s-economy/ (discussing U.S. losses in production throughout the pandemic, the severity of which

While the global administration of vaccines may be able to ease the fears of future uncertainty driving consumers and businesses toward economic caution, national stimulus efforts are necessary to revive the economy back to its pre-pandemic levels.[197]

It is clear that the economic recovery from months of nationwide shutdown will require extraordinary recovery efforts.[198] Residential renewable energy credits have been a part of economic recovery efforts from 1978 to 2009,[199] and it would be imprudent for Congress to allow any incentive that encourages job and industry growth such as § 25D to slip away in the midst of what will likely be a long global economic recovery.[200] In addition, the significant employment toll of 2020 and the strain on the U.S. health care system is going to require substantial labor and infrastructure recoveries.[201] These necessary efforts may be most effectively addressed by investing in the potential long-lasting growth of the renewable energy industry.[202] Renewable energy investment would not only contribute sustainable ways of engaging the long-term struggle against climate

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varies by industry and are more significant for those industries requiring a physical labor presence).

197. *See generally* Elaine Marie Tomko-DeLuca, *What Will Work and the Economy Look Like After COVID-19*, EMP. ALERT, Sept. 2020, at 3 (2020) (summarizing Dr. Ira Kalish's argument at the "World At Work's 2020 Total Resilience Virtual Conference" on July 29, 2020, that consumer and business fear of the uncertain economic climate and the infectious pandemic are causing these entities to save rather than spend, contributing to the relative halt of economic forces, that the creation and administration of a vaccine may help ease some of these fears and allow some return to normalcy, and that adjustments to current economic structures may also be required).

198. *See supra* notes 193–97 and accompanying text.

199. *See supra* Part II.

200. *See* WORLD BANK GRP., GLOBAL ECONOMIC PROSPECTS 5–6 (2020) (estimating that as of June 2020, the economic recovery in 2021 would be slow if conditions improved over the next several months). This report's optimism is noteworthy given that as of December 2020, COVID-19 infection rates have risen, and shutdowns have been reinstituted around the world.

201. Yueh, *supra* note 196 ("In terms of the recovery, the spending should be tailored to jobs. . . . For advanced economies, the recovery spending can also be designed to support longer-term growth aims (e.g., green growth) and address long-standing challenges . . . . In their latest World Economic Outlook, the IMF estimated that during periods of high uncertainty such as a global pandemic, 1% of GDP spent on public infrastructure will . . . raise employment by 1.2% after two years . . . . [C]reating jobs and boosting greener growth would focus the extraordinary amounts of government spending on both near term-needs and longer-term aims.").

202. *'Green Recovery' from COVID-19 Can Slow Climate Change: UN Environment Report*, UN NEWS (Dec. 9, 2020), https://news.un.org/en/story/2020/12/1079602.

change but would also permit a new wave of opportunities for the labor market and communities for whom renewable energy is more accessible.[203] Further, even as the COVID-19 pandemic exacerbates societal pressures, the climate is not a policy area that the United States can afford to neglect moving forward.[204] Thus, because the § 25D credit has demonstrated a meaningful ability to stimulate job growth and address imperative carbon emission reduction progress, it is an incentive opportunity that may not be discarded without significant potential costs.[205] In cooperation with the incoming Biden Administration, Congress should therefore embrace proposals to extend the § 25D credit and work together to mold the credit to best

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203. Ken Silverstein, *Want to Jump-start the Economy? Include a Green New Deal in the Stimulus Package*, FORBES (Mar. 19, 2020, 8:30 AM), https://www.forbes.com/sites/kensilverstein/2020/03/19/want-to-stimulate-the-economy-include-a-green-new-deal-in-the-coronavirus-bill/?sh=53f6db824386 ("[Renewable energy] projects . . . would go into at-risk communities as well as those that are now dependent on coal. Consumer sentiment is already driving this movement."); *see* Powers, *supra* note 116, at 556–64 (arguing renewable energy transition policies should be designed to correct the disparities between energy costs in high and low-income communities); *see also* John Fitzgerald, *COVID-19 Quick Take: California Transitions Green New Deal to COVID-19 Recovery*, WESTLAW HEALTH DAILY BRIEFING (May 8, 2020), https://1.next.westlaw.com/ (search "2020 WL 2297525") (explaining that California shifted the California Assembly Bill No. 1839, a modified proposed investment package from January 2020, to operate as a COVID-19 recovery package with a focus on investment for green jobs and industry growth).

204. Inger Anderson, UNITED NATIONS ENV'T PROGRAMME, EMISSIONS GAP REPORT 2020, at XIII (2020) (commenting on the full UN report, writing, "Governments must go greener in the next stage of COVID-19 fiscal interventions . . . . [S]tronger action must include facilitating, encouraging[,] and mandating changes in consumption behavior by individuals and the private sector . . . ."); Jamey Keaten & Frank Jordans, *UN Says 2020 is 'Last Best Chance' for Addressing Climate Change*, PBS (Nov. 26, 2019, 6:40 AM), https://www.pbs.org/newshour/world/un-says-2020-is-last-best-chance-for-addressing-climate-change; *see also Joe Biden Says 'No Time to Waste' as Climate Team Unveiled*, BBC (Dec. 20, 2020), https://www.bbc.com/news/world-us-canada-55382209 (discussing the nominees for Biden's newly created Climate and Energy Team, and quoting the president-elect, who said, "We're in a crisis[.] . . . Just like we need to be a unified nation to respond to Covid-19, we need a unified national response to climate change.").

205. *See supra* Part II. Further research on methods to ensure that job growth in the solar industry is representative of the diversity in the U.S. workforce, which is beyond the scope of this Article, would be useful in crafting renewable energy policy that encourages equitable opportunities for all U.S. workers through that industry's job growth. *But see* Welton & Eisen, *supra* note 116, at 334–37 (expressing concern about the lack of diversity found in the renewable energy workforce); *National Solar Job Census*, *supra* note 87 (reporting that as of 2019 "[w]omen make up 26% of the solar workforce[,] Latinos/Hispanic workers . . . 17%, Asian workers . . . 9%, and black or African American workers . . . 8%").

meet the needs of the current economic climate in a manner that provides stability for the vital renewable energy industry in the coming recovery period.[206]

Principle among these adjustments must be the expansion of the § 25D credit to apply to community solar investments.[207] One of the primary arguments for providing the § 25D credit is to encourage greater investment in renewable energy property.[208] Community solar programs allow low-income individuals to participate in a communal effort to engage in renewable energy investment, but the § 25D credit has not been made expressly and fully applicable to these investments.[209] By allowing the credit for community solar programs, more individuals will have an opportunity to invest in renewable energy, and such programs will be able to expand, making solar panels a more ubiquitous source of renewable energy and causing solar energy to become increasingly more affordable.[210] Furthermore, given the greater opportunities that community solar programs could provide the renewable energy industry if § 25D were expanded, it is clear that the full potential of the § 25D credit has not yet been reached by its current form.

In order to remedy the deficiencies of the credit, Congress should expand the § 25D credit to fully and clearly include community solar investments. This would include allowing the credit in full for investments in community solar programs of any type, not just utility-run programs.[211] Congress should extend the credit for

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206. *See* De Vann Sago, *Too Much, Too Soon: A Case for Slowing the Rate or Degree of Withdrawing Federal Regulatory Incentives for Photovoltaic Cells*, GEO. ENV'L. L. REV. ONLINE (Feb. 24, 2020), https://www.law.georgetown.edu/environmental-law-review/blog/too-much-too-soon-a-case-for-slowing-the-rate-or-degree-of-withdrawing-federal-regulatory-incentives-for-photovoltaic-cells/ ("The hasty repeal and reduction of federal policy incentives for the [photovoltaic ("PV")] solar industry will shock the markets . . . . The sticker shock . . . will deter investments and slow the growth of installation of PV systems. Ideally, . . . the already-enacted ITC phasedown . . . would be delayed . . . to permit the industry more time to decrease hard and soft costs so that PV-solar systems[] . . . remain[] competitive."); *see also supra* notes 89–94. *See generally supra* Part II; *supra* notes 191–204 and accompanying text.

207. *See generally supra* Part IV and accompanying text; *infra* notes 208–13 and accompanying text.

208. CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 9.

209. I.R.S. Priv. Ltr. Rul. 201536017, at 3–4 (Sept. 4, 2015); *see also* Golden, *supra* note 127; *Community Solar*, *supra* note 127.

210. *See* Golden, *supra* note 127; *Community Solar*, *supra* note 127.

211. *See* I.R.S. Priv. Ltr. Rul. 201536017, at 3–4; *Does the Federal Investment Tax Credit (ITC) Apply to Community Solar Projects?*, *supra* note 169.

several years to allow the industry to continue to grow.[212] The extension period should be long enough to provide a secure market for the industry's further development and for community solar programs to proliferate throughout the United States, taking advantage of the new investors that arise from the credit's expansion.[213]

VI. CONCLUSION

The § 25D credit began its descent toward its scheduled 2022 expiration in January 2020 with the credit for qualifying renewable energy residential property expenditures lowering from 30% to 26% in 2020 and again to 22% in 2021. However, Congress should not allow § 25D to expire in 2022 for two important reasons. First, because § 25D has historically been effective at encouraging job and industry growth, the economic difficulties arising from the onslaught of the COVID-19 pandemic demand that Congress not neglect any opportunity to support the long recovery ahead. Second, by expanding the credit which currently disproportionately advantages high-income homeowners to include investments in community solar programs, which are more practical sources of investment for low-income individuals, persons of all income levels may be more efficiently served, and the essential transition from fossil fuel to renewable energy may occur more quickly. The § 25D credit not only must be maintained but also should be expanded to protect the environment, improve the U.S. economy, and provide economic support for U.S. citizens.

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212. *See* CRANDALL-HOLLICK & SHERLOCK, *supra* note 11, at 12–13.

213. Sago, *supra* note 206 (arguing that there are costs involved with solar installations that still require additional support to be lowered and that removing federal supports like the ITC may cause solar installations in general to become uncompetitive).