

Green Tech And IP From Obama Through Biden: What's Next?

By **J. Douglas Miller and Matthew Dills** (December 7, 2023, 6:06 PM EST)

Like the change in the tides, governmental policies ebb and flow depending on the presidential administration in power. This is especially true for a polarizing issue such as climate change, which has been at the forefront of American politics the past few decades.

President Barack Obama and his administration were particularly dedicated to putting forth policies combating climate change and encouraging investment in alternative energy and other green technologies.

However, during President Donald Trump's term in office, many of the Obama-era policies promoting the development and investment in sustainable green technologies to fight climate change were reversed and rolled back.

How has this affected investment in sustainable green technologies in the U.S.? How has this affected intellectual property strategies? What might future intellectual property strategies regarding sustainable green technologies in the U.S. look like? These questions and more are discussed in this article.

Investment in sustainable green technologies in recent history has been substantial. Sustainable green technology is an admittedly broad topic; however, the development of clean energy is one of the most comprehensively funded fields within sustainable green technology.

In 2022 alone, the solar industry generated around \$35 billion of private investment in the U.S.[1] With regard to energy generated by wind power, 2023 is projected to be a strong year for investment, with a 15% year-over-year growth expected from 2022.[2]

In May, the U.S. announced a \$600 million investment to modernize and advance the use of hydroelectric power and marine energy throughout the country.[3] Finally, in 2022, \$6 billion was earmarked to maintain and upgrade systems the nuclear power plant system.[4]

However, renewable energy is not the only field within the scope of sustainable green technology that has received significant investment.

Electric vehicles play a large part in the investment into green technology. As of April, there were 135,000 public electric vehicle chargers and more than 3 million electric vehicles on the road across the U.S.[5]

In addition, \$100 billion in investments was announced for battery manufacturing in the past year.[6] The water conservation and treatment field, in April, received a \$140 million investment from the U.S. government for water conservation and efficiency projects.[7]

In addition, the U.S. Department of Agriculture, in April, provided more than \$46 million to the Sustainable Agriculture Research and Education program.[8] Lastly, in November, the secretary of energy announced the availability of \$350 million in funding for long duration



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energy storage.[9]

Before the Trump administration took office, the Obama administration was focused on combating climate change by providing incentives and policies promoting the development of sustainable green technologies and renewable energy sources. His administration passed the American Recovery and Reinvestment Act, providing more than \$90 billion in clean energy investments and tax incentives.[10]

The Obama administration also was able to leverage \$150 billion in private capital for clean energy development.[11] Moreover, the Advanced Research Projects Agency-Energy invested approximately \$1.1 billion across more than 400 potentially transformational energy technologies during Obama's administration.[12]

Finally, the Obama administration launched a new Clean Energy Impact Investment Center, facilitated investments by charitable foundations in clean energy technologies, improved financing for small businesses producing clean energy technologies, and garnered \$4 billion in commitments to finance clean energy innovations.[13]

The Obama-era policies and investments led to an intellectual property strategy in the U.S. clean energy sector that was focused on encouraging innovation.

Under the Obama administration, thousands of patent applications were filed in the renewable energy sector. Since 2009, more than 26,000 patents related to renewable energy were granted by the U.S. Patent and Trademark Office. [14]

The clean energy sector fostered international cooperation through partnerships, information-sharing, and joint research efforts, such as the Paris Agreement and Mission Innovation.[15]

Other programs, such as the Growth Accelerator Fund Competition, were launched to support clean energy startups and entrepreneurs.[16] These investments, incentives and programs created a strong motivation to develop and patent sustainable green technologies at a rapid rate in the U.S.

However, with the change in a presidential administration comes the ebb and flow of policy. Trump and his administration pursued a deregulatory agenda in respect of combating climate change and promoting sustainable green technology developments, which included rolling back several environmental policies and regulations aimed at promoting clean energy and sustainability.

Trump unraveled controls on the release of hydrofluorocarbons into the atmosphere, scaled back emissions standards for vehicles, weakened restrictions on methane emissions from oil and gas production, and opened more than 9.3 million acres of Alaskan forest for logging.[17]

As Trump's term ended, he rolled back more than 125 rules and policies aimed at protecting the nation's air, water and land, with 40 more rollbacks in the pipeline.[18] Trump also withdrew the U.S. from the Paris climate agreement.[19]

In the end, the Trump administration showed less support for renewable energy sources. Further examples of this lack of support include the sending of retroactive rent bills during the pandemic to wind and solar companies with projects on public lands; [20] and, in 2019, the repealing and replacing of the Clean Power Plan, a policy at the center of the Obama

administration's Climate Action Plan.[21]

The Trump administration also proposed significant budget cuts to agencies responsible for environmental protection and research, such as the U.S. Environmental Protection Agency and the U.S. Department of Energy.

By 2021, Trump requested congressional approval to cut funding for 73 federal programs including a 26% cut of the EPA budget.[22] Other cuts included a \$392 million cut to Advanced Research Projects Agency-Energy, a \$2.1 billion cut to the Office of Energy Efficiency and Renewable Energy, and a \$285 million cut of the National Oceanic and Atmospheric Administration's climate research project.[23]

The Trump administration's focus on revitalizing the coal industry and promoting fossil fuel extraction had the potential to divert investments and job opportunities away from the clean energy sector.

By June 2020, between effects of the Trump administration on the renewable energy industry and the COVID-19 pandemic, the renewable energy industry was expected to lose 850,000 jobs.[24] These rollbacks had a significant impact on the renewable energy and sustainable green technology sector, but what about the impacts on investment and intellectual property in this sector?

Despite Trump policy changes aimed at curtailing renewable energy, renewable energy continued to grow in the U.S., driven by falling costs, state-level initiatives, and private sector investments. For example, clean energy investment in the U.S. surged to a fresh record of \$55.5 billion in 2019.[25]

In addition, after Trump's presidency, the U.S. experienced a shift in its intellectual property strategy concerning the clean energy sector. The number of patents issued in fields related to cutting carbon emissions climbed from 15,970 in 2009 to approximately 35,000 in 2014.[26] In the following years, according to the World Intellectual Property Organization, the number of patents issued relating to clean energy and sustainable green technology dropped significantly.[27]

Before the Trump administration, it was worthwhile for companies and inventors to aggressively file patent applications in the U.S. pertaining to sustainable green technology due to the incentives and investment that existed at the time. Even though the investment remained, the Trump rollbacks induced a decrease in willingness to develop and patent sustainable green technologies.

The Biden administration has prioritized a return to the Obama era with regard to combating climate change and incentivizing investments and development in sustainable green technologies.

The Biden administration has proposed significant investment into clean energy research, development, and deployment through the clean energy tax provisions in the Inflation Reduction Act, the Electric Vehicle Acceleration Challenge and other guidance released on the development of renewable technology.[28] In addition, under Biden, the U.S. is working to strengthen its intellectual property strategy in the clean energy sector.

The U.S. Patent and Trademark Office announced this year that it launched a special category of its Patents for Humanity Program for green energy inventions.[29] Also, the establishment of a Climate Change Mitigation Pilot Program is designed to positively affect

the climate by accelerating the examination of patent applications for innovations that mitigate climate change.[30]

The Biden administration is also emphasizing the importance of international collaboration on clean energy and intellectual property. The Office of International Patent Cooperation was established in 2014 to support and improve the international patent system, according to the USPTO.[31]

In addition, in 2022, the U.S. became a technology partner in WIPO GREEN, an online platform for technology exchange.[32] Finally, the Biden administration reentered the U.S. into the Paris Climate Agreement, further solidifying international relations regarding sustainable green technology.

Looking to the future, as clean energy technologies continue to advance and become more economically viable, there will likely be an increased focus on protecting intellectual property rights in the sector. Given the global nature of the clean energy challenge, collaboration and technology sharing are likely to continue to play a crucial role in IP strategy.

To encourage innovation in the clean energy sector, more countries may establish expedited patent examination processes specifically tailored for green technologies, joining the U.S. and other countries.[33]

In the pursuit of rapid clean energy deployment and widespread adoption, there may be a push toward open innovation and the development of common industry standards. Governments may continue to provide policy incentives and funding support to encourage clean energy innovation. Finally, given the international nature of clean energy challenges, there may be efforts toward harmonizing intellectual property laws and regulations related to clean energy technologies.

In conclusion, even though there were some bumps in the road with respect to the Trump administration and its policies regarding climate change and the investment and development in sustainable green technologies, it appears the U.S. is once again encouraging and supporting innovation in the sector.

Specifically, investment in and development of sustainable green technologies and renewable energy has been strong recently, encouraging patent applications to be filed and supporting stronger intellectual property strategies. From the U.S. perspective, it will be interesting to see how the next administration handles the issue of climate change, and how that will affect future intellectual property strategies within the renewable energy and green technology sector.

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- [1] See Solar Industry Research Data, Solar Energy Indus. Ass'n, <https://www.seia.org/solar-industry-research-data> (last visited Dec. 3, 2023).
- [2] See U.S. Department of Energy Projects Strong Growth in U.S. Wind Power Sector, Dep't of Energy (Aug. 24, 2023), <https://www.energy.gov/articles/us-department-energy-projects-strong-growth-us-wind-power-sector#:~:>.
- [3] See Biden-Harris Administration Releases Nearly \$600 Million to Modernize and Advance Water Power Across America, Dep't of Energy (May 8, 2023), <https://www.energy.gov/articles/biden-harris-administration-releases-nearly-600-million-modernize-and-advance-water-power>.
- [4] See Civil Nuclear Credit Program, Grid Dev. Program (Mar. 6, 2023), <https://www.energy.gov/gdo/civil-nuclear-credit-program#:~:>.
- [5] See FACT SHEET: Biden-Harris Administration Announces New Private and Public Sector Investments for Affordable Electric Vehicles, White House (Apr. 17, 2023), <https://www.whitehouse.gov/briefing-room/statements-releases/2023/04/17/fact-sheet-biden-harris-administration-announces-new-private-and-public-sector-investments-for-affordable-electric-vehicles/>.
- [6] See id.
- [7] See Biden-Harris Administration Announces Over \$140 Million for Water Conservation and Efficiency Projects in the West, U.S. Dep't of the Interior (Apr. 21, 2023), <https://www.doi.gov/pressreleases/biden-harris-administration-announces-over-140-million-water-conservation-and#:~:>.
- [8] See USDA Invests Over \$46M in Sustainable Agriculture Research and Education, U.S. Dep't of Agric. (Apr. 19, 2023), <https://www.usda.gov/media/press-releases/2023/04/19/usda-invests-over-46m-sustainable-agriculture-research-and>.
- [9] See Biden-Harris Administration Announces Nearly \$350 Million For Long-Duration Energy Storage Demonstration Projects, Dep't of Energy (Nov. 14, 2022), <https://www.energy.gov/articles/biden-harris-administration-announces-nearly-350-million-long-duration-energy-storage>.
- [10] See FACT SHEET: How the Recovery Act Helped Save Us from a Second Great Depression and Made Critical Investments in our Long-Term Competitiveness, White House (Feb. 25, 2016), <https://obamawhitehouse.archives.gov/the-press-office/2016/02/25/fact-sheet-how-recovery-act-helped-save-us-second-great-depression-and>.
- [11] See Barack Obama and Joe Biden: New Energy for America, Dep't of Energy, https://www.energy.gov/sites/prod/files/edg/media/Obama_New_Energy_0804.pdf (last visited Dec. 3, 2023).
- [12] See FACT SHEET: How the Recovery Act Helped Save Us, *supra* note 10.
- [13] See FACT SHEET: Obama Administration Announces More Than \$4 Billion in Private Sector Commitments and Executive Actions to Scale up Investment in Clean Energy Innovation, White House (June 16, 2015), <https://obamawhitehouse.archives.gov/the-press-office/2015/06/16/fact-sheet-obama-administration-announces-more-4-billion->

private-sector.

[14] See Annual Renewable Energy Patents Granted, CBINSIGHTS, <https://www.cbinsights.com/research/renewable-energy-patents-trends-corporates/#:~:> (last visited Dec. 3, 2023).

[15] See Mission Innovation, CBINSIGHTS, <https://www.cbinsights.com/company/mission-innovation> (last visited Dec. 3, 2023) ("Mission Innovation is a global initiative to accelerate public and private clean energy innovation to address climate change, make clean energy affordable to consumers, and create green jobs and commercial opportunities.").

[16] See SBA Announces 2023 Growth Accelerator Fund Competition Stage One Winners, U.S. Small Bus. Admin. (May 17, 2023), <https://www.sba.gov/article/2023/05/17/sba-announces-2023-growth-accelerator-fund-competition-stage-one-winners> ("Growth Accelerator Fund Competition aims to bring together organizations, entities, groups, and individuals beyond geographic boundaries to support innovators and innovation needed to confront the challenges of today from inequity and climate change, to supporting national defense and community-driven economic prosperity.").

[17] See Nadja Popovich et al., The Trump Administration Is Reversing Nearly 100 Environmental Rules, N.Y. Times (Oct. 15, 2020), <https://www.nytimes.com/interactive/2020/climate/trump-environment-rollbacks.html>; see also Juliet Eilperin et al., Trump Rolled Back More Than 125 Environmental Safeguards, Wash. Post (Oct. 30, 2020), <https://www.washingtonpost.com/graphics/2020/climate-environment/trump-climate-environment-protections/>.

[18] See Juliet Eilperin et al., Trump Rolled Back More Than 125 Environmental Safeguards, Wash. Post (Oct. 30, 2020), <https://www.washingtonpost.com/graphics/2020/climate-environment/trump-climate-environment-protections/>.

[19] See President Trump Announces Withdrawal From Paris Agreement, Columbia L. Sch., <https://climate.law.columbia.edu/content/president-trump-announces-withdrawal-paris-agreement-0> (last visited Dec. 3, 2023).

[20] See Nicole Gentile & Kate Kelly, The Trump Administration Is Stifling Renewable Energy on Public Lands and Waters, CAP 20 (June 25, 2020), <https://www.americanprogress.org/article/trump-administration-stifling-renewable-energy-public-lands-waters/>.

[21] See Rob Jordan, Goodbye, Clean Power Plan: Stanford Researchers Discuss the New Energy Rule, Stanford (June 21, 2019), <https://news.stanford.edu/press-releases/2019/06/21/goodbye-clean-power-plan-understanding-new-energy-rule/>.

[22] See Trump Budget Slashes EPA Funding, Environmental Programs, The Hill (Feb. 10, 2020, 2:18 PM), <https://thehill.com/policy/energy-environment/482352-trump-budget-slashes-funding-for-epa-environmental-programs/>.

[23] See \$27.4 Billion Cut in Funding for Energy and Environment Programs Proposed by White House, Columbia L. Sch., <https://climate.law.columbia.edu/content/274-billion-cut-funding-energy-and-environment-programs-proposed-white-house> (last visited Dec. 3, 2023).

[24] See Gentile, *supra* note 21.

[25] See Silvio Marcacci, Renewable Energy Prices Hit Record Lows: How Can Utilities Benefit From Unstoppable Solar And Wind?, *Forbes* (Jan. 21, 2020, 7:10 AM), <https://www.forbes.com/sites/energyinnovation/2020/01/21/renewable-energy-prices-hit-record-lows-how-can-utilities-benefit-from-unstoppable-solar-and-wind/?sh=7acfe5e02c84#:~:>.

[26] See Amanda G. Ciccattelli, Slump in Clean Energy Patents Causes Concern, *IPWatchdog* (May 18, 2017, 6:15 AM), <https://ipwatchdog.com/2017/05/18/slump-clean-energy-patents-causes-concern/id=83312/>.

[27] See James Nurton, Patenting Trends in Renewable Energy, *WIPO* (Mar. 2020), https://www.wipo.int/wipo_magazine/en/2020/01/article_0008.html.

[28] See FACT SHEET: Biden-Harris Administration Announces New Private and Public Sector Investments, *supra* note 5.

[29] See Patents for Humanity: Green Energy, *USPTO*, <https://www.uspto.gov/ip-policy/patents-humanity-green-energy#:~:> (last visited Dec. 3, 2023).

[30] See Climate Change Mitigation Pilot Program, *USPTO*, <https://www.uspto.gov/patents/laws/patent-related-notices/climate-change-mitigation-pilot-program> (last visited Dec. 3, 2023).

[31] See International Patent Cooperation, *USPTO*, <https://www.uspto.gov/patents/basics/international-patent-cooperation> (last visited Dec. 3, 2023).

[32] See USPTO Becomes a Partner in International Green-Technology Platform, *WIPO GREEN*, *USPTO* (July 21, 2022), <https://www.uspto.gov/about-us/news-updates/uspto-becomes-partner-international-green-technology-platform-wipo-green-0#:~:>.

[33] See Accelerated Examination, *USPTO*, <https://www.uspto.gov/patents/initiatives/accelerated-examination> (last visited Dec. 3, 2023).