

EVOLUTION OF US POLICY ON CLIMATE CHANGE: FROM PRESIDENT OBAMA TO PRESIDENT TRUMP

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WHAT IS CLIMATE CHANGE?

The US Department of Ecology defines climate as the “*average weather*” in a particular place. It consists of markings of precipitation (rain and snow), temperature, wind, humidity and seasons...¹ Due to man-made causes, the prevailing climate in the last few decades has changed rapidly: this phenomenon is known as climate change. The change can be characterised as, “The increasing levels of carbon dioxide, methane and nitrous oxide have increased the Earth’s temperature, which is leading to melting of glaciers, droughts and rising sea levels...”² While Climate Change (CC) is a relatively new phenomenon, its genesis can be traced back to the 1800s during the era of the Industrial Revolution. The issue actually owes its origin to the

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1. “What is Climate Change”, Department of Ecology: State of Washington, Official Website, Available at <http://www.ecy.wa.gov/climatechange/whatis.htm>. Accessed on August 18, 2017.
2. “Preparing for a Changing Climate”, Department of Ecology: State of Washington, April, 2012 Available at <https://fortress.wa.gov/ecy/publications/publications/1201004b.pdf>. Accessed on August 18, 2017.

In the year 1859, John Tyndall, an Irish physicist, discovered that carbon dioxide, ozone, and water vapour absorbed heat radiation; he subsequently argued that variations in carbon dioxide and water vapour could lead to a possible change in environmental conditions which later came to be known as climate change.

environmental movement in the US and worldwide. It is for this purpose that a brief overview of the history of environmentalism in the US becomes imperative.

It is argued by scientists that the Industrial Revolution contributed to climate change by an increased level of carbon dioxide, methane, and nitrous oxide in the atmosphere by activities such as burning of coal and deforestation during 1800-70. In the year 1859, John Tyndall, an Irish physicist, discovered that carbon dioxide, ozone, and water vapour absorbed heat radiation; he subsequently argued that variations in carbon dioxide and water vapour could lead to a possible change in environmental conditions which later came to be known as climate change.³ In the 1870s, a second Industrial Revolution further accelerated the growth of fertilisers and synthetic chemicals such as nylon, rayon, and polyester which led to further environmental degradation.⁴ This change in the environment was recognised by the environment movement, already emerging in the US and elsewhere such as in the United Kingdom, with the birth of conservation groups such as the Common Preservation Society, Royal Society, Kyrle Society for the Protection of Birds (RSPB) and Garden City movement.⁵

ENVIRONMENT MOVEMENT IN THE UNITED STATES OF AMERICA

In the United States, the birth of the environment movement can be traced to the 1850s when Henry David Thoreau published the book, *Walden* (1848) that raised awareness about environmental sensitivity. In the subsequent

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3. Steve Graham, "John Tyndall (1820-1893)", Nasa Earth Observatory, Official Website, October 8, 1999, Available at <https://earthobservatory.nasa.gov/Features/Tyndall/>. Accessed on July 9, 2017.
 4. Rachel Carson, *Silent Spring* (Cambridge, Massachusetts: The Riverside Press, 1962), pp. 16, 21.
 5. Dhanasree Jayaram, *Breaking Out of the Green House: Indian Leadership in Times of Environmental Change* (New Delhi: KW Publishers Pvt Ltd, 2012), p. 114.

years, another environment thinker, John Muir created an environmental organisation in San Francisco, known as the Sierra Club on May 28, 1892.⁶ As an environmental organisation, the Sierra Club became one of the most prominent organisations for activism and eventually contributed to the protection of millions of acres of wilderness, and was further responsible for the enactment of powerful laws such as the Clean Air Act (1970), Clean Water Act (1972) and Endangered Species Act (1973).⁷

The environment movement was recognised by US presidents. For example, in 1916, President Woodrow Wilson founded the National Park Service, which exhibited the major milestones of environmentalism. In fact, during the during the 1920s and 1940s, two significant events – the opening up of the oil fields in Texas and the use of the Dichlorodiphenyltrichloroethane (DDT) pesticide and its disastrous effects on the ecosystem – were issues that played a big role in shaping up environmentalism in the US.⁸ In fact, by the year 1945, the US Office of Naval Research began funding several fields of science, some of which helped in understanding environmental concerns.⁹ The environmental impacts such as water degradation, air pollution, and destruction of wildlife habitats started creating awareness among the people and the government. All this led to the establishment of major environmental laws in the US from the 1960s.

The Making of Major Environmental Policies in America

While there existed much awareness about environmental issues in the 1800s and the 1940s, it can be argued that actual environmentalism in the US began only in the 1960s. In 1960, an American marine biologist, Rachel Carson, published a book, called *Silent Spring* which created widespread awareness in the US about the use of DDT and how it was posing a threat to the ecology as well as human health. In 1972, due to public concerns about DDT,

6. Ibid.

7. "Who We Are", Sierra Club, Official Website. Available at <http://www.sierraclub.org/about>. Accessed on July 9, 2017.

8. "Texas in the 1920s", Texas State Historical Association (TSHA), Official Website, June 15, 2010, Available at <https://tshaonline.org/handbook/online/articles/npt01>. Accessed on 9 July 2017.

9. "The History of Climate Change", *Live Science*, January 31, 2007. Available at <https://www.livescience.com/1292-history-climate-change-science.html>. Accessed on July 9, 2017.

It is said that the United States experienced the “golden era” of environmental lawmaking from 1964-80. In 1964, during the Administration of President Lyndon Johnson, the US Congress passed 22 crucial laws concerning pollution control, wildlife, and management of public and private lands. The pollution control laws expanded the power of the government and gave the federal government a major role in protecting and upgrading the water and air quality.

to the environmental laws.¹¹

the Environmental Protection Agency (EPA) banned its use¹⁰ It is said that the United States experienced the “golden era” of environmental lawmaking from 1964-80. In 1964, during the Administration of President Lyndon Johnson, the US Congress passed 22 crucial laws concerning pollution control, wildlife, and management of public and private lands. The pollution control laws expanded the power of the government and gave the federal government a major role in protecting and upgrading the water and air quality. The environmental movement of the 1960s and 1970s not only raised many questions for the implementing agencies but also created various opportunities and spaces for action for the US Congress, and the courts in giving meaning

The climate change policies of the American presidents show the different perceptions of the two political parties towards climate change, though climate change was a matter of concern for both Republicans and Democrats. In 1969, the US saw environmental policies being enacted to tackle climate change. President Nixon introduced the National Environment Policy Act (NEPA) in 1969, with the aim to protect the environment and biosphere, galvanise the welfare and health of man, and create a Council on Environmental Quality. A Cabinet Committee on Environment was also set up in 1970.¹²

10. Jayaram, n.6, p. 114.

11. Christopher Mc Grory Klyza and Davis Sousa, *American Environmental Policy, 1990-2006 Beyond Gridlock* (Champaign, Illinois: Massachusetts Institute of Technology, 2008), pp. 1-2.

12. National Environmental Policy Act (NEPA), (1970), “Public Law 91-190-Jan. 1, 1970” - US GPO, Available at <https://www.gpo.gov/fdsys/pkg/STATUTE-83/pdf/STATUTE-83-Pg852.pdf>. Accessed on July 11, 2017.

On April 22, 1970, the first Earth Day was celebrated in which more than 20 million Americans participated. In the following year, 1970, President Nixon officially established the Environmental Protection Agency (EPA). The EPA was a big development in the environmental history of the US, as the agency started regulating laws on serious environmental issues such as air, water, and land pollution which were degrading the environment and human health. The agency's tasks included federal research, enforcement activities and monitoring.¹³ Nixon also proposed the formation of the National Oceanic and Atmospheric Administration (NOAA) for protecting lives and property from natural disasters.¹⁴ On December 31, 1970, the Clean Air Act was passed wherein the American Congress authorised the EPA to set emission standards for the gases responsible for climate change such as hydrocarbons, carbon monoxide, and nitrous oxide. In 1973, a major international climate event took place, the Stockholm Conference, which was the United Nations Conference on Human Environment that further galvanised the environment movement internationally.¹⁵ The Stockholm Conference contained a section on the acceptance of pollutants which were of importance and the most important part of the declaration was that it raised the problem of climate change for the first time.¹⁶ The US also participated among the 113 delegates, and its delegation comprised 63 members, including 28 technical advisers. President Nixon, in 1972, gave an Environment Message to Congress and

13. EPA History, United States Environmental Protection Agency, Official Website, April 4, 2017. Available at <https://www.epa.gov/history>. Accessed on July 12, 2017.

14. About the Agency (2017), National Oceanic and Atmospheric Administration (NOAA), Official website. Available at <http://www.noaa.gov/about-our-agency>. Accessed on July 12, 2017.

15. The Rio Earth Summit (1992), Summary of the United Nations Conference. Available at <http://publications.gc.ca/Collection-R/LoPBdP/BP/bp317-e.htm#A>. History of the Summit(txt). Accessed on August 19, 2017.

16. "From Stockholm to Kyoto: A Brief History of Climate Change", *UN Chronicle*, June 2007. Available at <https://unchronicle.un.org/article/stockholm-kyoto-brief-history-climate-change>. Accessed on August 19, 2017.

The first-ever treaty to save the stratospheric ozone layer by discontinuing the fabrication and utilisation of Ozone-Depleting Substances (ODS) was signed – known as the Montreal Protocol. It was a global agreement and the first treaty in the United Nations to get universal consensus: it was signed by 197 countries.

introduced a voluntary Environment Fund which supported the movements of the UN Secretariat. The US willingly contributed to the fund on a suitable basis with the other nations by paying 40 percent of a five-year amount of \$100 million. The US also recommended a plan, which was approved by the Conference by the Earthwatch Programme to increase the working monitoring systems, so that pollution could be calculated around the world. The Stockholm Conference or the First Earth Summit created awareness about the need of protecting the planet globally which led

to similar international conferences in the 1980s. The US took a leading role in putting forward its proposals for tackling climate change. The aim was basically to warn the governments of all the countries about the effects of climate change. Another major international event which took place during President Reagan's Administration was the Montreal Protocol which was influenced by the Earth Summit.

The Montreal Protocol (Another Milestone)

Subsequently, by 1987, the first-ever treaty to save the stratospheric ozone layer by discontinuing the fabrication and utilisation of Ozone-Depleting Substances (ODS) was signed – known as the Montreal Protocol.¹⁷ It was a global agreement and the first treaty in the United Nations to get universal consensus: it was signed by 197 countries. The Montreal Protocol was important because the Earth's ozone layer (which absorbs the sun's ultraviolet radiation) was getting depleted due to the greenhouse gases. This became a matter of concern for the world as the depletion would lead

17. The Montreal Protocol on Substances that Deplete the Ozone Layer, U.S. Department of State, Official Website. Available at <https://www.state.gov/e/oes/eqt/chemicalpollution/83007.htm>. Accessed on July 18, 2107.

to life-threatening diseases. The United States signed the Protocol in 1987 and the EPA contributed by creating innovations and successful approaches to save the ozone layer.¹⁸ President Reagan ratified on the Montreal Protocol in 1987 by stating: "In this historic agreement, the international community undertakes cooperative measures to protect a vital global resource. The United States played a leading role in the negotiation of the Protocol. United States ratification is necessary for entry into force and effective implementation of the Protocol. Early ratification by the United States will encourage similar action by other nations whose participation is also essential."¹⁹

The Clinton-Gore Administration encouraged new environmentally friendly technologies and implemented strict environmental policies. President Clinton gave attention to climate change issues which resulted in many developments such as the Climate Change Technology Initiative and National Environmental Technology Strategy.

CLIMATE CHANGE ERA: 1993-95

The American 103rd Congress

By the late 1970s and 1980s, the issue of climate change had entered the presidential campaign. In the year 1976, Al Gore held the first congressional hearings on climate change while running for the House of Representatives and talked about global warming. Al Gore, who became the vice president, later on, wrote a book on environmental conservation in 1988. Bill Clinton chose Al Gore for the presidential campaign in 1992 and in the year 1993, Gore's book, *Earth in the Balance: Ecology and the Human Spirit* was published. The Democratic President, Bill Clinton came into office with the thinking

18. Ibid.

19. "Transmittal to the Senate of the Montreal Protocol on Substances that Deplete Ozone Layer", Action Memorandum, November 18, 1987. Available at <http://nsarchive.gwu.edu/NSAEBB/NSAEBB536-Reagan-Bush-Recognized-Need-for-US-Leadership-on-Climate-Change-in-1980s/documents/Document%207.pdf>. Accessed on July 19, 2017.

that the environment and economy go together. Vice-President Al Gore pushed President Clinton to implement the carbon tax and decrease fossil fuel consumption, which was partially implemented.²⁰ The Clinton-Gore Administration encouraged new environmentally friendly technologies and implemented strict environmental policies. President Clinton gave attention to climate change issues which resulted in many developments such as the Climate Change Technology Initiative and National Environmental Technology Strategy. The Clinton-Gore Administration increased the implementation of environmental laws.²¹ However, Al Gore came in for a lot of criticism for his non-scientific statements on climate change. Many critics argued that he was a politician rather than a climate scientist.²² The Clinton Administration was also involved in the negotiations regarding the Kyoto Protocol, yet climate change was not a domestic priority²³ as the Republicans dominated the Congress for twelve years which was a significant setback for the environmental policy in the Democrat Administration.²⁴

The Republicans and the Kyoto Protocol

As mentioned earlier, the political deadlock during the Clinton Administration created various problems for President Bush. In the subsequent years, the Administration of President Bush considered climate change as a low priority; various Acts such as the Clean Air Act, Clean Water Act, ESA and forest management laws were a concern for the Congressional Conservatives (a congressional group comprising conservative and liberal Republicans). President Bush chose a plain

20. Jessica Aldred and Lauren Goodchild, "Timeline: Al Gore", *The Guardian*, 2017. Available at <https://www.theguardian.com/environment/2007/oct/12/climatechange1>. Accessed on August 19, 2017.

21. "The Clinton-Gore Administration: A Record of Progress", The White House. Available at <https://clintonwhitehouse5.archives.gov/WH/Accomplishments/eightyears-08.html>. Accessed on July 24, 2017.

22. "Is Al Gore's Inconvenient Truth Accurate?" (2017) *Skeptical Science*. Available at <https://www.skepticalscience.com/al-gore-inconvenient-truth-errors-intermediate.htm>. Accessed on August 19, 2017.

23. Emilio Cerdá and Xavier Labandeira, *Climate Change Policies: Global Challenges and Future Prospectus* (Cheltenham Glos: Edward Elgar Publishing Limited, 2010), p.268.

24. Klyza and Sousa, n. 11, p.71.

track by increasing the total budgets for pollution check and natural resources. The funding in environmental programme areas was reduced to the 2002 levels as the Republican-dominated Congress made little legislative progress on major issues of climate change.²⁵ The Republican Congress made some legislative implementations on major environmental problems. The most important climate change policies during the Bush Administration were the revisions to the Clean Air Act; he called the Act the "Clear Skies." The Clear Skies initiated 'cap-and-trade' which was a powerful solution for curbing the greenhouse gases in the atmosphere. The cap was supposed to curb the pollution and industries were to be penalised if they crossed the limit. The trade pact was market-based for the industries to sell and buy shares which allowed them to emit only a specific amount of greenhouse gases.²⁶ The other side of the climate change policy, during the Bush Administration, was the rejection of the Kyoto Protocol, the international treaty that extends the United Nations Convention on Climate Change (UNCCC).²⁷ President Bush wrote a letter to the US Senate in 2001 on the Kyoto Protocol: "I oppose the Kyoto Protocol because it exempts 80 percent of the world, including major population centers such as China and India, from compliance, and would cause serious harm to the US economy. I support a comprehensive and balanced national energy policy that takes into account the importance of improving air quality."²⁸ President Bush believed that a well maintained domestic energy policy could tackle climate change by curbing greenhouse gases. President Bush's climate change policies were influenced by his party's mainly ideological priorities concerning the responsibility of the private sector and government laws.²⁹

25. Ibid., p. 102.

26. Ibid., p. 103.

27. Kyoto Protocol (2014) United Nations Framework on Climate Change. Available at http://unfccc.int/kyoto_protocol/items/2830.php. Accessed on August 19, 2017.

28. Letters to Members of the Senate on the Kyoto Protocol on Climate Change- 444, (2001) US Government Publishing Office, March 13, 2001. Available at <https://www.gpo.gov/fdsys/pkg/WCPD-2001-03-19/pdf/WCPD-2001-03-19-Pg444-2.pdf>. Accessed on July 25, 2017.

29. Graham Pugh, "Clean Energy Diplomacy from Bush to Obama", *Issues In Science and Technology*, 2017. Available at <http://issues.org/31-3/clean-energy-diplomacy-from-bush-to-obama/>. Accessed on July 25, 2017.

President Obama aimed at the economic transformation of the country by not depending on imports of oil from West Asia, instead, generating energy from renewable resources such as solar and wind in a sustainable manner.

TACKLING CLIMATE CHANGE IN THE OBAMA GOVERNANCE

The election of Barack Obama as President in November 2008 brought many changes. Tackling climate change was one of the important promises made by him during his presidential campaign. President Obama aimed at the economic transformation of the country by not depending on imports of oil from West Asia, instead, generating energy from renewable resources such as solar and wind in a sustainable manner.³⁰ His Administration enhanced the new

EPA to permit the states to adopt new automobile standards: by allowing California's refusal under the Clean Air Act, the EPA also coordinated the new federal levels with the California plan, which consisted of stricter laws on automobile air pollution than the federal laws and, thus, made the state rules the new law of the land. In 2009, President Obama pledged that by 2020, America would decrease its greenhouse gases, if all the other countries decreased their emissions as well.³¹ On December 7, 2009, nations gathered in Copenhagen to decide on a post-Kyoto climate era, where the EPA made clear that GHGs were harmful to human life and welfare—which was an important way for curbing emissions under the Clean Air Act rules. The EPA's advancement gave a boost to President Obama in the Copenhagen negotiations. The American 111th Congress pressed on with a climate and energy approach which led to the introduction of the climate and energy Bill, which was known as the American Clean Energy and Security Act of 2009 (HR2154).³² The reason behind the introduction of the Bill was to make environmental laws more strict and to curb carbon emissions from industries in a more effective way.

30. Cerdá and Labandeira, n. 23, p. 269.

31. The President's Climate Action Plan: Executive Office of the President (2013) The White House Washington, June 2013. Available at <https://obamawhitehouse.archives.gov/sites/default/files/image/president27climateactionplan.pdf>. Accessed on July 26, 2017.

32. Cerdá and Labandeira, n. 23, p. 270.

H.R. 2454: The Climate Bill

The House Representatives Henry Waxman and Ed Markey introduced the Bill – HR 2454, the main feature of which was the *cap-and-trade* programme; apart from the programme, the law also had standards for spreading use of renewable energy, and efficiency.³³ The Bill contained many sections regarding: clean energy, clean transportation, smart grid advancement, nuclear and advanced technologies, reducing global warming pollution, and so on and so forth.³⁴ The third section of the Bill required the EPA administrator to inform the Congress annually on the status of adoption of GHG emissions standards by India and China.

Climate Action Plan³⁵

President Obama's promise in 2009 to reduce GHG emissions by 2020, paved the way for more climate change actions on the US' part. President Obama introduced the Climate Action Plan to prevent carbon pollution which would further help in business transformation to remodel the power plants, reducing oil imports, which would help in the creation of more jobs and American-made energy. The plan had three main factors:

- **Cut Carbon Pollution in America:** By 2009, the US was going through a huge issue of carbon emissions and the use of renewable energy became one of the goals. This feature mainly focussed on clean energy in all forms. The carbon reduction from the power plants was the most important task as power plants comprised the largest source of carbon emissions in the US. The aim was to concentrate only on alternative energy and to encourage local governments and state governments to take a lead in the use of alternative energy. President Obama also issued a Presidential Memorandum and instructed the EPA to monitor and regulate the carbon pollution standards of the power plants. Another focus area in cutting carbon was *expanding and modernising the electric grid* whereby electricity would become more dependable, with a reduction

33. Ibid., p. 270.

34. H.R. 2454- American Clean Energy and Security Act of 2009, Congress, June 26, 2009. Available at <https://www.congress.gov/bill/111th-congress/house-bill/2454>. Accessed on July 28, 2017.

35. n.31.

The Obama Administration took international initiatives also, along with the domestic policies, as it was important to spread awareness internationally—this included bilateral negotiations with India and China.

in the people's energy bills. The transportation sector was also an important area wherein heavy-duty automobiles were producing GHGs: in response to this, President Obama in 2011 decided to increase the Fuel Economy Standard for the years 2014-18. The curbing of emissions of Hydrofluorocarbons (HFCs) was another major issue as the emissions of HFCs were expected to triple by 2030. By reducing the emission rate of HFCs, America would take the lead in the international negotiations and the domestic affairs as well. The plan to reduce

carbon pollution also included the role of forests in mitigating climate change. America's forest cover plays an important role in tackling climate change by erasing 12 percent of America's GHGs.

- **Prepare the United States for the Impacts of Climate Change:** This factor was included because the impacts of climate change were leading to several other issues such as displacement of people and destruction of property; in this case, disaster management became necessary. The Obama government created an Interagency Climate Change Adaptation Task Force in 2009. In 2010, the Task Force arranged the first National Climate Adaptation Summit, gathering stakeholders from the regional and local levels. The federal agencies came out with a Climate Change Adaptation Plan in 2013, for protection from the effects of climate change. The Department of Homeland Security analysed the impacts on the Arctic region and the national borders of America. Another interesting method for climate change awareness was the creation of a toolkit for climate resilience which provided an easy approach to monitor the rising sea level and detect storms.
- **Lead International Efforts to Global Climate Change:** The Obama Administration took international initiatives also along with the domestic policies, as it was important to spread awareness internationally—this included bilateral negotiations with India and China. The US-India Partnership to Advance Clean Energy (PACE) focussed on low carbons

by giving support to research and clean energy. It further aimed at developing clean energy innovations through private-public cooperation. The US-China Clean Energy Research Centre (CERC) aimed at increasing research and development of clean energy technologies. It included engagement with scientists and engineers from the best universities and institutions. The Strategic Energy Dialogue with Brazil was another bilateral climate initiative. Another area of focus comprised the mobilising of climate finance. The climate finance was one of the important sectors in the international initiative to cut carbon emissions. The commitment of the US, with other developed countries, along with the Copenhagen Accord, provided \$30 billion as assistance to the developing countries from 2010 to 2012. In 2011, at the climate meeting in Durban, the nations agreed on negotiating a new climate agreement by the end of 2015.

The plan was to cut carbon emissions by 30 percent from the 2005 levels as the power plants in US emit one-third of all GHGs. The plan also focussed on reducing pollution leading to smog and soot by 25 percent by the year 2030.

Clean Power Plan

On June 2, 2014, the Obama government, along with the EPA, proposed a national plan to cut carbon emissions from the coal-fired power plants which are the major contributors to climate change. The plan aimed at power plants in 47 states. But Hawaii, Vermont, and Alaska, which do not have power plants, were also under the regulation. The plan was to cut carbon emissions by 30 percent from the 2005 levels as the power plants in the US emit one-third of all GHGs. The plan also focussed on reducing pollution leading to smog and soot by 25 percent by the year 2030. The Clean Power Plan also created health benefits, circumventing premature deaths and asthma attacks in children. It allowed states flexibility in selecting how to achieve their goals.³⁶

36. "Overview of the Clean Power Plan: Cutting Carbon Pollution from Power Plants (2014)", EPA Fact Sheet: Clean Power Plan, June 2, 2014. Available at <https://www.epa.gov/sites/production/files/2014-05/documents/20140602fs-overview.pdf>. Accessed on July 29, 2017.

The Moratorium on Federal Coal Leasing

President Obama introduced another initiative to curb climate change during his tenure, apart from his two plans. The Interior Department of the United States came up with reforms for the federal coal programme. This step was taken by the president to handle the fossil fuel issue and aim for a clean energy economy. The Programmatic Environmental Impact Statement (PEIS) was formed to take care of issues of where, how and when to lease; how to report for the public health; and environmental impacts of federal coal production. The Interior Department also came up with good governance reforms to enhance the transparency in the federal coal programme. The reforms also established a transparent database for the people for monitoring the carbon emissions from fossil fuels created on public lands, which required the Bureau of Land Management offices to post online the issues of coal leasing and the steps being taken to capture waste mine methane.³⁷

Climate Change: A Threat to National Security

According to President Obama, climate change was leading to climate insecurity encompassing food security, extreme weather conditions, and resource scarcity. His Administration established a Climate National Security Working Group in 2016, which directed the federal sections to implement specific functions which included climate change impacts on the development of national security, plans and policies. The memorandum also stated that federal support was necessary for the non-federal civil authorities and the US military as climate change was affecting the military operations, facilities and training.³⁸

37. "Secretary Jewell Launches Comprehensive Review of Federal Coal Program", US Department of the Interior, May 10, 2017. Available at <https://www.doi.gov/pressreleases/secretary-jewell-launches-comprehensive-review-federal-coal-program>. Accessed on July 29, 2017.

38. Presidential Memorandum – Climate Change and National Security (2016), The White House: President Barack Obama, September 21, 2016. Available on <https://obamawhitehouse.archives.gov/the-press-office/2016/09/21/presidential-memorandum-climate-change-and-national-security>. Accessed on July 29, 2017.

*The Arctic Model*³⁹

On March 10, 2016, President Obama and Canadian Prime Minister Justin Trudeau released a joint statement on tackling climate change in the Arctic region. The Arctic region plays an important role in the world's climate, and climate changes in the Arctic such as melting of ice due to GHGs and rise of sea levels would lead to destruction of ecosystems and also affect the local communities. The Arctic leadership had four main objectives:

- **Conserving Arctic Biodiversity through Science-Based Decision-Making:** The US and Canada declared their national goals of saving the land and the marine areas by 2020. The two leaders also stated that conservation goals would be established for climate science and a pan-Arctic marine protection area network was also proposed.
- **Incorporating Indigenous Science and Traditional Knowledge into Decision-Making:** Canada and the US showed their dedication towards cooperating with the Arctic governments and communities so that traditional knowledge could be included in the decision-making. This would help in understanding climate change better.
- **Building a Sustainable Arctic Economy:** Commercial activities such as fishing, shipping, and gas and oil inspection were to be based on scientific affirmation. The commercial activities would take place only after going through environmental and safety measures which included indigenous rights as well. The leaders also focussed on the low impact shipping corridors, abundant Arctic fish, and a science-based approach to oil and gas.
- **Supporting Strong Arctic Communities:** This approach was taken to reinforce the indigenous people and to respect their rights. The other challenges such as education, mental wellness, and indigenous language

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39. Joint Statement: U.S. Canada on Climate, Energy, and Arctic Leadership (2016) The White House: Office of the Press Secretary, March 10, 2017. Available at <https://obamawhitehouse.archives.gov/the-press-office/2016/03/10/us-canada-joint-statement-climate-energy-and-arctic-leadership>. Accessed on July 30, 2017.

were also addressed. The leaders also pledged to engage in a bilateral dialogue on scientific research through the Arctic Council.

- President Obama also banned offshore oil drilling in the Arctic and Atlantic Oceans as this releases methane and hydrocarbons which comprise the GHGs leading to climate change.⁴⁰

The US Enters the Paris Agreement

Another major landmark in the climate history was the Paris Agreement which entered into force on November 4, 2016. The United States ratified the Paris Agreement on April 22, 2016, The president made a Joint Presidential Statement with Chinese President Xi Jinping as China is one of the growing economies, thereby defining the implementation for post-2020 emissions of both countries.⁴¹ President Obama remarked on the Paris Agreement: "...the investments that we made to allow for incredible innovation in clean energy and the strong, principled diplomacy over the course of years that we were able to see pay off in the Paris Agreement. The United States and China were central to that effort. Over the past few years, our joint leadership on climate has been one of the most significant drivers of global action."⁴² President Obama also instituted 'Mission Innovation', which showed dedication to work for climate change by allocating funding which was around \$30 billion for five years for Research and Development (R&D) in clean energy. The Obama Administration promised \$3 billion to help the Green Climate Fund (GCF), which was one of the important features of the Paris Agreement to reduce carbon emissions and strengthen the developing countries, specifically the poorest nations.⁴³

40. Fact Sheet: President Obama Protects 125 Million Acres of the Arctic Ocean (2016), The White House: Office of the Press Secretary. Available at https://www.doi.gov/sites/doi.gov/files/uploads/2016_arctic_withdrawal_fact_sheet_for_release.pdf. Accessed on August 22, 2017.

41. White House, U.S. Department of the Interior, *U.S. Climate Policy: Change of Power – Change of Heart – New Presidential Order vs. Laws & Actions of the Former President, A Review of the New Presidential Orders as Opposed to the Legacy of the Former President* (Madison and Adams Press, 2017), p. 9.

42. Tanya Somanader, "President Obama: The United States Formally Enters the Paris Agreement", The White House: President Barack Obama, April 22, 2016. Available at <https://obamawhitehouse.archives.gov/blog/2016/09/03/president-obama-united-states-formally-enters-paris-agreement>. Accessed on July 30, 2017.

43. n. 41, p. 9.

The climate change legacies of the Obama Administration show how important climate change was for the president and how he implemented the policies to curb carbon pollution from all dimensions. The Obama governance ended on January 20, 2017, which led to the rise of the Republicans, and Donald J Trump became the 45th president of the US. President Trump reversed the climate policies of President Obama and established new policies which have been criticised in the US and by other world leaders as well.

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PRESIDENT TRUMP'S STATEMENTS ON CLIMATE CHANGE

Pre-Presidential Campaign

In the year 2009, Trump signed a full-page advertisement in the *New York Times*, asking President Obama to act on climate change.⁴⁴ The open letter stated: "As business leaders, we are optimistic that President Obama is attending Copenhagen with emissions targets. We support your effort to ensure meaningful and effective measures to control climate change, an immediate challenge facing the United States and the world today. If we fail to act now, it is scientifically irrefutable that there will be catastrophic and irreversible consequences for humanity and our planet."⁴⁵ This letter of President Trump contradicts the present climate policy reversals.

44. Madeleine Sheehan Perkins and Rebecca Harrington, "President Trump Doesn't Believe in Climate Change: Here's What He's Said About It in the Past", *Business Insider*, June 2, 2017. Available at <http://www.businessinsider.in/president-trump-doesnt-believe-in-climate-change-heres-what-hes-said-about-it-in-the-past/articleshow/58953357.cms>. Accessed on August 1, 2017.

45. Ben Adler and Rebecca Leber, "Donald Trump Once Backed Urgent Climate Action. Wait, What?" *Grist*, American non-profit online magazine, June 8, 2017. Available at <http://grist.org/politics/donald-trump-climate-action-new-york-times/>. Accessed on August 1, 2017.

President Trump may have had an open mind for addressing climate change in the year 2016, though during the presidential campaign he promised to cancel payments to UN climate funds, claiming that the money would be used to fix the domestic issues of water and the environment.

By 2010, President Trump had changed his stance, instead criticising Al Gore for cleaning up the plants and factories to protect people from global warming, but also criticising China for not paying attention to global warming.⁴⁶ Another instance, when President Trump addressed global warming was when the Trump International Golf Links and hotels in Ireland were affected by coastal erosion. The company was permitted to construct a seawall prevent the sea from advancing on to the land) to safeguard the property from “global warming”.⁴⁷ This case was also one of contradiction, as President Trump did not

believe in global warming but was willing to protect his property from its effects. President Trump has connected the climate change issue to China several times.⁴⁸

During Presidential Campaign

In 2016, President Trump signalled, “There is still much that needs to be investigated in the field of climate change. Perhaps the best use of our limited financial resources should be in dealing with making sure that every person in the world has clean water. Perhaps we should be focused on developing energy sources and power production that alleviate the need for dependence on fossil fuels.”⁴⁹ President Trump may have had an open mind for addressing climate change in the year 2016, though during the

46. Jeremy Schulman, “A Timeline of Every Ridiculous Thing Trump Has Said About Climate Change,” *Newsweek*, April 2, 2017. Available at <http://www.newsweek.com/timeline-every-ridiculous-thing-trump-has-said-about-climate-change-576238?amp=1>. Accessed on August 1, 2017.

47. Ben Schreckinger, “Trump Acknowledges Climate Change—At His Golf Course”, *Politico*, May 23, 2016. Available at <http://www.politico.com/story/2016/05/donald-trump-climate-change-golf-course-223436>, Accessed on August 1, 2017.

48. Sheehan Perkins and Harrington, n. 44.

49. 2016 Presidential Q&A (2017) Science Debate. Available at <https://www.sciencedebate.org/2016-answers-release>. Accessed on August 1, 2017.

presidential campaign he promised to cancel payments to UN climate funds, claiming that the money would be used to fix the domestic issues of water and the environment. He also promised to lift the restrictions on American energy reserves such as natural gas, clean coal, and oil.⁵⁰

During the Presidency

Reversal of Obama's Clean Power Plan

Reversal⁵¹

The first climate policy which has been reversed in the Trump era is the Clean Power Plan. According to President Trump, the past climate policy had burdened the Americans with an expensive law that was affecting energy production and American jobs. The Clean Power Plan went up to \$39 billion a year and electricity prices increased in 41 states by 10 percent in the Obama era. The present Administration claims that the plan would decrease coal production by 242 million tons, as stated by the National Mining Association. President Trump made clear that: "27 states, 24 trade associations, 37 rural electric co-ops, and 3 labor unions are challenging the Clean Power Plan in Federal Courts." The Trump Administration's Executive Order instructed the EPA to "*suspend, revise, or rescind*" the Clean Power Plan. President Trump also instructed the attorney general to request for relief from the courts "*over pending litigation*" over the Clean Power Plan. The Executive Order also asked the agencies to go through plans that stress on energy production and "*suspend, revise or rescind actions that are not mandated by law.*" President Trump has signed

The main aim of reversing the Clean Power Plan was to bring coal mining jobs back to America and introduce more fossil fuel industries, as the Clean Power Plan had increased the use of alternatives such as natural gas rather than coal.

50. "Seven Actions to Protect American Workers: Donald Trump's Contract with the American Voter" (2016). Available at https://assets.donaldjtrump.com/_landings/contract/O-TRU-102316-Contractv02.pdf. Accessed on August 19, 2017.

51. President Trump's Energy Independence Policy (2017), The White House: Office of the Press Secretary, March 28, 2017. Available at <https://www.whitehouse.gov/the-press-office/2017/03/28/president-trumps-energy-independence-policy>. Accessed on August 2, 2017.

The Arctic policies of the current president are unclear, though one of the Executive Orders of President Trump has removed the Obama-era idea which was given by Alaska's native villagers: it focussed on safeguarding the Bering Sea marine life and helping people cope with extreme weather conditions there.

four sections of legislation to remove the pressure from the expensive energy production from the past Administration and also created a "Regulatory Reform Task Force" to understand the expensive rules for modification. The main aim of reversing the Clean Power Plan was to bring coal mining jobs back to America and introduce more fossil fuel industries, as the Clean Power Plan had increased the use of alternatives such as natural gas rather than coal.

Climate Change Not a Threat to National

Security

The current US president's "*Energy Independence*" Executive Order reverses the memorandum of the past president. President Trump believes that climate change does not affect the national security, and that extreme weather conditions such as droughts, hurricanes, and rising sea level are no threat to the national security. Section 3 of the "*Energy Independence*" Executive Order: "Recession of Certain Energy and Climate-Related Presidential and Regulatory Actions" revokes the "Presidential Memorandum of September 21, 2016 (Climate Change and National Security)." ⁵²

The Arctic Climate Policy in the Trump Era

The Arctic policies of the current president are unclear, though one of the Executive Orders of President Trump has removed the Obama-era idea which was given by Alaska's native villagers: it focussed on safeguarding the Bering Sea marine life and helping people cope with extreme weather

52. Presidential Executive Order on Promoting Energy Independence and Economic Growth (2017) The White House: Office of the Press Secretary, March 28, 2017. Available at <https://www.whitehouse.gov/the-press-office/2017/03/28/presidential-executive-order-promoting-energy-independence-and-economy-1>. Accessed on August 3, 2017.

conditions there.⁵³ The local governments might come up with new Arctic roles—a declaration by the mayors of the cities of Canada, Alaska, Finland, Norway and Iceland has promised to “expand economic diversification, opportunity and local benefits, build cutting edge infrastructure, assume responsibility and provide leadership in our adaptation to a changing climate, govern using the best available science, knowledge and technology and promote healthy equitable communities through inclusion and cooperation.”⁵⁴ President Trump also issued an Executive Order on the “*First Offshore Energy Strategy*” which reversed the former president’s Arctic leasing ban: “This executive order starts the process of opening offshore areas to job-creating energy exploration.”⁵⁵

On the international level, President Trump withdrew from the Paris Accord which the Obama Administration had accepted. For President Trump, this agreement was not important and he claimed that it was damaging the US economy due to the climate funds.

Withdrawal from the Paris Agreement

On the international level, President Trump withdrew from the Paris Accord which the Obama Administration had accepted. For President Trump, this agreement was not important and he claimed that it was damaging the US economy due to the climate funds. President Trump gave a statement on the Paris Accord: “The United States will withdraw from the Paris Climate Accord, but begin negotiations to reenter either the Paris Accord or a really entirely new transaction on terms that are fair to the United States, its businesses, its workers, its people, its taxpayers. So we’re getting out. But

53. Yereth Rosen, “With Trump Administration Intentions Unclear, Alaskans Might Have to Fill the Void on Arctic Policy”, *Alaska Dispatch News*, May 22, 2017. Available at <https://www.adn.com/arctic/2017/05/21/with-trump-administration-intentions-unclear-alaskans-might-have-to-fill-the-void-on-arctic-policy/>. Accessed on August 3, 2017.

54. “Declaration of Arctic Mayors (2017)”, Institute of the North. Available at http://www.institutenorth.org/assets/images/uploads/files/Arctic_Mayors_Declaration.pdf. Accessed on August 3, 2017.

55. Remarks by President Trump at Signing of Executive Order on an America- First Offshore Energy Strategy (2017), The White Office: Office of the Press Secretary, April 28, 2017. Available at <https://www.whitehouse.gov/the-press-office/2017/04/28/remarks-president-trump-signing-executive-order-america-first-offshore>. Accessed on August 7, 2017.

The reversal of the Clean Power Plan which was one of the most important policies of President Obama, accelerated the legal process by the states and local governments.

we will start to negotiate, and we will see if we can make a deal that's fair. And if we can, that's great. And if we can't, that's fine. This includes ending the implementation of the nationally determined contribution and, very importantly, the Green Climate Fund which is costing the United States a vast fortune."⁵⁶ The exit from the Paris Agreement and reversal of Obama's policies have opened the door for criticism from various fields.

Opposition Building in US Congress against Trump's Reversal

As President Trump reversed the climate legacy of the former president, the US Congress deliberated upon some legislative actions on his orders on coal, oil and gas, to challenge this reversal.⁵⁷ A top EPA official resigned from the EPA as President Trump's reversals showed lack of interest in the climate change issue for which the EPA had made strict laws in the past. In the Trump Administration, the EPA has displayed a weakened stance on environmental laws. The EPA official stated: "It may take a few years and even an environmental disaster, but I am confident that Congress and the courts will eventually restore all the environmental protections repealed by this Administration because the majority of the American people recognize that this protection of public health and safety is right and it is just."⁵⁸ Apart from legal actions, public protests have gained momentum against the reversals of President Trump. Both the people and the states in the US, took an independent stand on climate

56. Statement by President Trump on the Climate Accord (2017) The White House: Office of the Secretary, June 1, 2017. Available at <https://www.whitehouse.gov/the-press-office/2017/06/01/statement-president-trump-paris-climate-accord>. Accessed on August 4, 2017.

57. Marianne Lavelle, "How Congress Is Cementing Trump's Anti-Climate Orders into Law", *Inside Climate News*, July 31, 2017, *Lost Light Projects Inc.US*. Available at <https://insideclimatenews.org/news/31072017/trump-climate-change-executive-orders-congress-turning-into-law-via-budget>. Accessed on August 5, 2017.

58. Betsy Farwell Message, "PEER: Protecting Employees Who Protect Our Environment", August 1, 2017. Available on https://www.peer.org/assets/docs/epa/8_1_17_Betsy_farewell_message.pdf. Accessed on August 5, 2017.

change after the policy reversals. The reversal of the Clean Power Plan which was one of the most important policies of President Obama, accelerated the legal process by the states and local governments. The states and local governments of the US wrote a letter to Vice-President-Elect Pence stating: "We joined in EPA's defense of the Clean Power Plan in court mindful of the grave threats that carbon pollution poses to our residents, economies, infrastructure, and natural resources."⁵⁹ All these cases show how Trump's reversals are affecting the people, states and local bodies in the US. The other issue in the climate movement comprises the lobbying against the climate regulations by the firms or industries which will be affected by the tough regulations. The US Chamber of Commerce, which is America's largest lobbying organisation, spent \$90 million on climate legislation in 2014. Lobbying is conducted not only by the firms but also by those who want to bring changes in the system if it turns rigid.⁶⁰ Lastly, the exit from the Paris Agreement saw many protests from many environmental organisations such as Greenpeace. Greenpeace stated: "Trump's isolationist stance at a critical moment in history is morally reprehensible, but his attempt to derail the global progress on climate change will fail. The Paris Agreement will remain in force, with or without the US government, and transition to clean energy will continue."⁶¹ The Paris Agreement clearly shows that US presidents, both former and current, have acted according to their own choice about the agreement, without the approval of Congress. Article II Section 2 of the American Constitution demands two-thirds majority of the Senate. When presidents act without the consent of Congress, the

59. Final Letter, Scribd, December 28, 2016. Available at https://www.scribd.com/document/335302186/20161228-Final-Letter#fullscreen&from_embed. Accessed on August 6, 2017.

60. Magali Delmas, "Research: Who's Lobbying Congress on Climate Change", *Harvard Business Review*, October 27, 2016. Available at <https://hbr.org/2016/10/research-whos-lobbying-congress-on-climate-change>. Accessed on August 6, 2017.

61. "Trump Announces U.S. 'Withdrawal' From Paris Climate Agreement - Greenpeace Response", (2017), Greenpeace, June 1, 2017. Available at <http://www.greenpeace.org/usa/news/trump-announces-u-s-withdrawal-from-paris-climate-agreement-greenpeace-response/>. Accessed on August 6, 2017.

The reversal of the climate policies of the former president, which lasted for eight years, by President Trump, will have to cross the legal and political boundaries. Apart from these two dimensions, the people and the environmental organisations have been protesting and taking legal action against President Trump.

orders themselves become vulnerable and can be reversed.⁶²

CONCLUSION

The timeline of the American climate policies gives a picture of different actors who helped in spreading awareness on climate change and its impacts. The Americans' environmentalism pushed the American presidents to implement laws that showed climate change as a threat not only to the US but to the world as well. The man-made greenhouse gases which are the most important emissions

and tough to reduce, became a matter of concern for the US. Laws such as the Clean Air Act passed by the EPA during President Nixon's time clearly gave a picture of tackling climate change from the roots. America's involvement with international agreements in the past, with a few exceptions such as President Bush's rejection of the Kyoto Protocol, brought out the importance of climate change. The American implementation of climate policies also threw light on the beliefs of the presidents regarding the phenomenon of climate change. President Obama's milestones on the issue showed how important it was for him. The initiatives which he took such as the Clean Power Plan and banning offshore drilling for oil in the Arctic were major counters for climate change as well as for America.

The reversal of the climate policies of the former president, which lasted for eight years, by President Trump, will have to cross the legal and political boundaries. Apart from these two dimensions, the people and the environmental organisations have been protesting and taking legal action against President Trump. The federal agencies such as the EPA might face

62. Davis Davenport, "Climate Change Reversals Remind Us: We Live in a Roller Coaster Executive Order World", *Forbes*, June 2, 2017. Available at <https://www.forbes.com/sites/daviddavenport/2017/06/02/climate-change-reversal-reminds-us-we-live-in-a-roller-coaster-executive-order-world/#13bd28fe5bf2>. Accessed on August 6, 2017.

tough times though, due to the low funding and unpredictable leadership. On the international level, the US' withdrawal from the Paris Agreement has raised concerns worldwide. The absence of the US has left a gap in the expected carbon emissions standards. The question that arises here is: how will the US fill the gap? President Obama had set the reduction targets for 2025 between 26 and 28 percent below the 2005 levels. The European Union (EU) has responded to President Trump's withdrawal by stating that the EU would not make extra reductions in the carbon emissions and would not fill the gap which the US has left.⁶³

The future of American climate policies lies in the states, local governments, civil society and corporate giants taking the lead. They will have to work on the carbon footprints. It will be a massive task for these actors to tackle the climate change issue as the US is the second highest emitter of greenhouse gases after China. Hurricanes such as Harvey and Irma reflect the impact of climate change. There is an urgent need for change in climate diplomacy so that extreme weather conditions may be brought under control.

63. Daniel Boffey, "EU Says No Extra Emission Cuts to Fill the Gap Left by the US After Paris Withdrawal", *The Guardian*, June 6, 2017. Available at <https://www.theguardian.com/environment/2017/jun/06/european-leaders-scale-up-climate-change-efforts-trump-paris-deal>. Accessed on August 22, 2017.