
AN ALTERNATIVE APPROACH TO CLIMATE CHANGE LITIGATION:
FUNDAMENTAL CLIMATE RIGHTS & DECENTRALIZED RENEWABLE
PROGRAMS

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I. Introduction

It is imperative, now more than ever, that undivided attention be placed on those capable of effectuating change.¹ One organization capable of effectuating such change is the International Panel on Climate Change (“IPCC”), established by the United Nations (“UN”) in 1988 and delegated with the authority of generating and facilitating scientific assessments on climate change.² The global response to this

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¹ See *How Do We Know that Humans Are the Major Cause of Global Warming*, UNION OF CONCERNED SCIENTISTS (Aug. 1, 2017), *archived at* <https://perma.cc/ER6J-LK7V> [hereinafter *How Do We Know*] (emphasizing that recent studies have found roughly two-thirds of atmospheric impacts and ocean temperature increases are “confidently attributed to anthropogenic forcing.”); see also Merriam-Webster, Inc., *Anthropology*, DICTIONARY (Oct. 12, 2019), *archived at* <https://perma.cc/8PAR-ZYM5> (defining anthropology as, “the study of human beings and their ancestors through time and space and in relation to physical character, environmental and social relations, and culture.”).

² See The International Panel on Climate Change, *History of the IPCC*, ABOUT (Oct. 12, 2019), *archived at* <https://perma.cc/K873-7JQC> [hereinafter *History of the IPCC*] (discussing the implementation of the International Panel on Climate Change). The United Nations General Assembly Resolution of December 1988 pioneered the international compliance of climate change initiatives through its implementation of the IPCC. *Id.* The IPCC has provided both ‘scientific and technical’ climate change analysis to entities such as the United Nations Framework Convention on Climate Change (UNFCCC), as well as other governmental and

scientific research led to the implementation of international agreements such as the Montreal Protocol, the Kyoto Protocol, and the Paris Agreement.³ Largely due to the ineffectiveness of these international agreements, studies have shown a necessity to inquire into the relationship between domestic policies, and the historical failure to achieve an equitable transition to viable renewable resources.⁴ Ultimately, this initiative will require employing various components that have been successfully applied in other domestic and foreign jurisdictions, in order to facilitate an imminent transition away from fossil fuels and towards more responsible energy generation.⁵

Increasing political pressure on domestic governmental bodies will create a window of opportunity for more active steps towards informed policy decisions regarding the implementation of renewable energy.⁶ Part II of this note will outline the history of various

nongovernmental organization to guide climate change initiatives over the past 40 years. *Id.*

³ See Stephen Leahy, *Without the Ozone Treaty You'd Get Sunburned in 5 Minutes*, NAT'L GEOGRAPHIC (Sep. 25, 2017), archived at <https://perma.cc/EAH5-JTKR> (discussing the scope of the Montreal Protocol, which focuses on eradication of substances that deplete the Ozone layer); see United Nations, *Climate Change*, GLOBAL ISSUES (Oct. 14, 2019), archived at <https://perma.cc/4PTP-5XNB> [hereinafter United Nations Climate Change] (highlighting the 1995 Kyoto Protocol which attempted to impose commitments on both industrialized and developing nations by implementing pollution reduction plans).

⁴ See Rb. Den Haag, 24 juni 2015, ECLI:NL:RBDHA:2015:7196 (Urgenda Foundation/The State of the Netherlands (Chamber of Commercial Affairs) (Neth.) [hereinafter Urgenda] (recognizing that “the state should not hide behind the argument that the solution to the global climate problem does not depend solely on the Dutch efforts. Any reduction of emissions contributes to the prevention of dangers of climate change and as a developed country the Netherlands should take the lead in this.”). See *Juliana v. United States*, No. 6:15-cv-01517-TC, 2016 U.S. Dist. LEXIS 156014, at *7, *20–21 (D. Or. Nov. 10, 2016) (discussing the government’s association with subsidizing the fossil fuel industry, promoting favorable revenue code provisions, and authorizing fossil fuel combustion in the energy, refiner, transportation, and manufacturing sectors).

⁵ See Urgenda, *supra* note 4, at P 2.6–7 (discussing the legal basis which ultimately led to a judicial ruling requiring affirmative government intervention regarding more aggressive steps to combat climate change). See Keely Boom et al., *Climate Justice: The International Momentum Towards Climate Litigation*, Climate Justice Programme Report 17 (2016) (analyzing the many examples of climate litigation, and the various legal theories which have either facilitated effective or ineffective results).

⁶ See Rachel Moloney, “We will not keep silent”: Brick Court QC’s call to lawyers at *Extinction Rebellion*, THE LAWYER, Oct. 11, 2019 (stressing to other concerned constituents to not keep silent, but rather, “strive to give the judges the tools they

international responses to climate change, and discuss the legal theories used by climate activists in both foreign and domestic litigation.⁷ Part III will address ongoing climate change litigation in the United States, how the litigants have configured their legal claims, and the alternative options towards effectuating redress.⁸ Part IV will argue that a domestic, localized approach towards implementing decentralized renewable generation will serve as the preliminary infrastructure for the renewable grid.⁹ Pursuant to the climate findings discussed in Part II, and the litigation tactics described in Part III, the asserted injuries premised on an unenumerated right to a sustainable environment should be tailored around a feasible transition to net metering and other decentralized renewable generation mechanisms as the appropriate means for redress.¹⁰

need to do right by all manner of people, globally . . . and in the new and relatively uncharted waters of climate change.”). *See also* Michael Burger et al., *Legal Pathways to Reducing Greenhouse Gas Emissions under Section 115 of the Clean Air Act*, 28 GEO. ENV'T'L. L. REV. 359, 361 (2016) (highlighting the mechanism which would allow for an across the board tax on fossil fuels); James Hansen et al., *The Case for Young People and Nature: A Path to a Healthy, Natural, Prosperous Future*, COLUM. UNIV., 22 (2011) [hereinafter *The Case For Young People And Nature*] (emphasizing a tax on fossil fuel emissions as a way to further facilitate a transition to renewable energy generation).

⁷ *See infra* Part II(A) (providing historical context to the international forums which have provided significant traction towards intensifying the response in accordance with climate change). This section will then explore the international and domestic sources of litigation which will serve as the legal basis for addressing the current state of climate litigation in the United States. *See infra* Part II(B).

⁸ *See infra* Part III (discussing the ongoing litigation of *Juliana v. United States*, as well as a less robust approach towards addressing the transition to decentralized renewable generation).

⁹ *See infra* Part IV (arguing an alternative approach towards effectuate governmental compliance in implementing decentralized renewable technology).

¹⁰ *See infra* Part V (concluding that a finely tailored due process claims—combined with an approach that includes an increasing “carbon tax” and local decentralized renewable programs—will serve as the initial infrastructure during pending litigation, which will ultimately allow for a feasible national remedial plan, like that requested in *Juliana*).

II. History

A. *The International Forum & Guidance of the IPCC*

The recognition and scientific discoveries related to climate change date back several decades prior to the implementation of the IPCC.¹¹ The UN bolstered this effort by providing an international forum for legitimate, informed, and transparent scientists to guide the international community in accomplishing the goals of the climate change movement.¹² The primary responsibility of the IPCC has been to clarify and correct the ‘technical and scientific’ findings surrounding climate change, and to take the necessary steps to ameliorate issues on a global scale.¹³ The IPCC recognizes the

¹¹ See *History of the IPCC*, *supra* note 2 (providing information on the history prior to the implementation of the IPCC, along with the current role of the IPCC).

¹² See *History of the IPCC*, *supra* note 2 (stating that “since the creation of the IPCC, each Assessment Report has fed directly into international climate policymaking.”). The IPCC’s First Assessment Report (FAR) (1990) “played a decisive role in the creation of the UNFCCC, the key international treaty to reduce global warming and cope with the consequences of climate change.” *Id.* The Second Assessment Report (SAR) (1995) which provided necessary information which governments would use in complying with the Kyoto Protocol, was ultimately implemented two years later with the purpose of binding signatory countries to emission reduction standards. *Id.* The Third Assessment Report (TAR) (2001) was geared toward addressing the impacts of climate change with corresponding adaptation measures—whereas the Fourth Assessment Report (AR4) (2007) analyzed the scientific importance of limiting global warming by 2°C, as opposed to the previous threshold, which was set at 1.5°C. *Id.* The Fifth Assessment Report (AR5) served a similar purpose as SAR, this report provided scientific information to governmental bodies in order to properly prepare both domestic policy and economic institutions to comply with the Paris Agreement. *Id.* The Sixth Assessment Report, expected to be ‘finalized in 2022,’ will include three Special Reports, most notably, as of September 2019, the Special Report on the Ocean and Cryosphere in a Changing Climate (SROCC). *Id.* The Sixth Assessment Report is expected to be prepared in time for the first global stocktake—an initiative incorporated into the Paris Agreement, which serves as a checkpoint for signatory countries to address their progress, and what is still necessary to achieve the goals of this Agreement. *History of the IPCC*, *supra* note 2. See Eliza Northrop et al., *Insider: Designing the Global Stocktake under the Paris Agreement: The Catalyst for Climate Action*, WORLD RES. INST. (May 1, 2017), archived at <https://perma.cc/4PBZ-FW6Y> (stating that “[T]he global stocktake is a key element in the ambition mechanism of the [A]greement; it will provide countries with the basis for strengthening their actions and submitting new national climate commitments in the two years following each successive global stocktake.”).

¹³ See United Nations Climate Change, *supra* note 3 (expressing the current goals of the AR5 and understanding how to combat the predicted sixty-three centimeter rise

legitimacy of most issues causing climate change, and has even established corresponding levels of confidence to signify the certainty of their findings.¹⁴ These discoveries serve as the pillars of international agreements, including the Montreal Protocol, Kyoto Protocol, and Paris Agreement.¹⁵ Although these agreements have well-suited intentions, non-compliance by many developed nations raise questions as to the effectiveness of these agreements.¹⁶

in sea level within the next century). The report further concludes that the appropriate threshold for drastic and deadly ecological changes should be closer to the 2°C temperature increase, as opposed to the previously believed, 1.5°C temperature increase. *Id.* AR5 provides findings which make clear that combating climate change will require “‘rapid and far-reaching’ transitions in land, energy, industry, buildings, transport, and cities.” *Id.* “Global net human-caused emissions of carbon dioxide (CO₂) would need to fall by about 45 percent from 2010 levels by 2030, reaching ‘net zero’ around 2050.” *Id.*

¹⁴ See *How Do We Know*, *supra* note 1 (highlighting that the most recent findings released by the IPCC establishes a change in consensus among scientists from 1995, which originally found a discernible human influence on climate—but in 2013, it determined that the anthropogenic influence on greenhouse gas emissions was extremely likely (at least 95% chance) to be responsible for more than half of Earth’s temperature increase since 1951). See *History of the IPCC*, *supra* note 2 (emphasizing the utility of the IPCC’s discoveries which are imbedded in many of the international climate change agreements). See Mastrandrea, M.D., et. al., 2010: *Guidance Note for Lead Authors of the IPCC Fifth Assessment Report on Consistent Treatment of Uncertainties*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 1, 1 (2010) (explaining that the IPCC uses specific language in reference to their discoveries to establish degrees of certainty). The IPCC’s confidence metric employs the use of “calibrated language to communicate certainty in key findings.” *Id.* at 4.

¹⁵ See United Nations Climate Change, *supra* note 3 (providing a brief history along with the contemporary state of climate science and international climate agreements). See *id.* (highlighting the 1995 Kyoto Protocol which attempted to impose commitments on both industrialized and developing nations by implementing pollution reductions plans). Thereafter, in 2015, the Paris Agreement attempted to make strides in recognizing the human induced impact on climate change, and in response, sought to “accelerate and intensify the action and investments for a sustainable low carbon future.” See *id.* (expressing the “central aim” of the Paris Agreement as decreasing global temperature increases by 1.5°C through renewed or increased objectives and commitments pursuant to the 2019 Climate Change Summit). See also The International Panel on Climate Change, *Global Warming of 1.5°C*, SPECIAL REPORT (Oct. 12, 2019), archived at <https://perma.cc/V97E-53G9> [hereinafter *Global Warming of 1.5°C*] (highlighting the implication of the 1.5°C threshold as necessary to stabilize net-zero temperature increases throughout the remainder of the century).

¹⁶ See Cass R. Sunstein, *Of Montreal and Kyoto: A Tale of Two Protocols*, 31 HARV. ENV’T L. REV. 1, 4–6 (Aug. 2007) (emphasizing the differences between the

1. The Montreal Protocol

The Montreal Protocol on Substances That Deplete the Ozone Layer was prompted by the findings of the IPCC and studies from various academics such as Sherwood Rowland and Mario Molina.¹⁷ These scholars suggested that chlorofluorocarbons (“CFC’s”) emitted into the atmosphere would destroy the ozone.¹⁸ Three years prior to the academia published by Rowland and Molina, “it had been suggested that a 1% ozone loss would cause an additional 7000 cases of skin cancer each year.”¹⁹ The cost of “a mere \$21 billion” to the United States to comply with this agreement, contrasted against a sharp increase in skin cancer rates, was a motivating factor contributing to the success of this initiative.²⁰

The idea that the Montreal Protocol presented a “prisoners dilemma” in regards to eradicating CFC’s should not be overlooked without discussing the United States motivation in pioneering international compliance, which effectively maximized their

Montreal Protocol, which focused on the purpose of reducing o-zone depleting chemicals, and the Kyoto Protocol, which focused on combating certain pollutants and greenhouse gases in accordance with the climate change movement). Sunstein stresses that “the success of the Montreal Protocol and the mixed picture for the Kyoto Protocol were largely driven by the decisions of the United States, and those decisions were driven in turn by a form of purely domestic cost-benefit analysis.” *Id.* at 25.

¹⁷ See Mario J. Molina & F. S. Rowland, *Stratospheric Sink for Chlorofluoromethanes: Chlorine Atom-Catalysed Destruction of Ozone*, 249 NATURE 810 (1974) (discussing the atmospheres “finite capacity” for CFC’s which can lead to the destruction of the atmospheric ozone).

¹⁸ See Sunstein, *supra* note 16 (discussing that even small contributions of CFC’s can ultimately contribute to devastating results, deadly to both the environment as well as the public health and welfare).

¹⁹ See Stephen J. DeCanio, *Economic Analysis, Environmental Policy, and Intergenerational Justice in the Reagan Administration: The Case of the Montreal Protocol*, 3 INT’L. ENV’T’L. AGREEMENTS: POL., L. & ECON. 299 (2003) (discussing that the primary reason for domestic compliance was supported by the “projected health risks to the U.S. population from stratospheric ozone depletion.”).

²⁰ See Sunstein, *supra* note 16 (expressing that compliance by the United States was motivated by a significant public health concern, in combination with the low cost of combating the expected results). The United States used the international forum to display their aggressive compliance with this somewhat-costly initiative, which in turn, sparked further international compliance by other under-persuaded nations. *Id.* This ultimately tripled the health benefits resulting from this international agreement, as opposed to what may have resulted had the United States not served as a unilateral pioneer in the reduction of CFC emissions. *Id.*

investment for complying with the agreement.²¹ As articulated by Cass Sunstein, Professor at The University of Chicago Law School, international agreements can present “a prisoner's dilemma in which all or most nations will do badly if each acts in its individual self-interest, but gain a great deal if all are able to enter into a binding agreement.”²² However, the motivating factor of profit maximization, in addition to altruistic concerns, was absent in the implementation of the Kyoto Protocol.²³

2. The Kyoto Protocol

While the Montreal Protocol sought to regulate the reduction of ozone depleting substances such as hydrochlorofluorocarbon (“HCFC’s”) and chlorofluorocarbons (“CFC’s”), this inherently required the replacement of HCFC’s and CFC’s with hydrofluorocarbons (“HFC’s”). While HFC’s are not ozone depleting pollutants, they are an extremely similar to GHG’s, precisely what the Kyoto Protocol attempted to combat—although not technically classified as a GHG.²⁴ Therefore, both the Montreal and Kyoto

²¹ *See id.* (providing that health benefits were not the sole factor which triggered compliance by other developed nations, rather, aggressive compliance by the United States incentivized further traction towards accomplishing the goals of this agreement by engaging the remainder of the international community).

²² *See id.* at 5 (explaining why the United States was motivated to comply with the Montreal Protocol, whereas with the Kyoto Protocol, “to the United States alone, prominent analyses suggested that the monetized benefits of the Kyoto Protocol would be dwarfed by the monetized costs.”).

²³ *See id.* at 6 (highlighting many alarming ways in which CFC emissions mobilized commercial and consumer behavior in the Montreal Protocol; whereas the Kyoto Protocol was ineffective in motivating similar behavior to tackle GHG emissions). The perceived cost of the Kyoto Protocol far exceeded the expenses of the Montreal Protocol by roughly \$300 billion, and because the Kyoto Protocol excluded the participation of developing nations, it was far more difficult to solve the prisoner’s dilemma. *See Sunstein, supra* note 16 at 6.

²⁴ *See* Stephen O. Anderson et al., *A Global Response to HFCs through Fair and Effective Ozone and Climate Policies*, CHATHAM HOUSE 2 (July 2014) (discussing the effect of replacing CFCs and HCFCs, with HFCs, and its impact on compliance with the Montreal Protocol and Kyoto Protocol); *see also* Daniel G. McCabe, *Resolving Conflicts Between Multilateral Environmental Agreements: The Case of the Montreal and Kyoto Protocols*, 18 *FORDHAM ENVTL. L. REV.* 433 (discussing that HFC’s, CFC’s, and GHG’s all have a high potential of contributing to global warming). Although, HFCs are not regulated under the other ‘ozone depleting substances’ pursuant to the Montreal Agreement, they are very powerful GHG’s, up

Protocols present issues in achieving compliance—unfortunately, these obstacles proceeded further procedural hardships.²⁵ Scientists and scholars have articulated that the Montreal and Kyoto Protocols must provide a cooperative approach to “effectively regulate the global atmosphere.”²⁶

The Kyoto Protocol sought to reduce GHG’s by implementing a regime where signatory nations would implement unenforceable pledges, varying in adequacy and efficacy between the signatory nations.²⁷ Only 36 of 196 world countries, responsible for less than 40 percent of world carbon emission, were subject to these pledges—roughly 130 other nations including the United States, China and India, categorically outside of Annex I, were not subject to this agreement.²⁸ The abstention from the Kyoto protocol by the very developed nations who served as signatories to the Montreal Protocol can be readily explained by the “domestic cost-benefit analysis.”²⁹ Notwithstanding

to thousands of times more damaging to the climate than carbon dioxide. McCabe, *supra* at 440.

²⁵ See Anderson et. al., *supra* note 24, at 2 (noting that the Kyoto Protocol explicitly list’s GHGs under its authority, although, other emissions which contribute to global warming, like HFC’s, have no specific regulatory measures under the current climate change agreements).

²⁶ See McCabe, *supra* note 24, at 436 (advocating a cooperative initiative between the Montreal and Kyoto Protocol, premised on the joint jurisdiction of the global atmosphere). Because the Montreal Protocol facilitated the replacement of ozone depleting substances with HFC’s—and HFC’s are so similar to GHG’s, but not expressly regulated by the Kyoto Protocol—HFC’s soon fell under the oversight of no specific regulatory measures. *Id.* at 436. See also Anderson et. al., *supra* note 24, at 1–2 (concluding that, while the Montreal Protocol called for the phasing-out of CFC’s and HCFC’s, the industry began to replace those emissions with substances such as HFC’s, which explicitly fell under no regulatory authority).

²⁷ See Steven Ferrey, *Changing Venue of International Governance and Finance: Exercising Legal Control over \$100 billion per year Climate Fund?*, 30 WISCONSIN J. INT’L L. 26, 102 (2012) [hereinafter *Changing Venue of International Governance and Finance*] (emphasizing the unenforceable nature of these pledges proposed in the Kyoto Protocol).

²⁸ See *id.* at 102 (citing United Nations Climate Change, Parties & Observers, United Nations Framework Convention on Climate Change (Mar. 28, 2020)), *archived at* <https://perma.cc/3H4W-6TL9> (codifying the manner in which the Convention divides global nations into three main groups according to particular commitments). See Robert Henson, *What is the Kyoto protocol and has it made any difference?*, THE GUARDIAN (Mar. 11, 2011), *archived at* <https://perma.cc/CX7Z-H9EV> (highlighting the varying pledges and corresponding commitments for a particular nation, while also highlighting the failure to gain compliance by the globes largest emitters).

²⁹ See Sunstein, *supra* note 16, at 5–7 (emphasizing that the “monetized benefits of the Montreal Protocol dwarfed the monetized costs, and hence the circumstances

the ineffectiveness of these agreements, compliance boils down to a simple equation—if nations continue to emphasize short term economic growth, such growth will likely be to the detriment of environmental protection initiatives.³⁰

3. The Paris Agreement

The aforementioned international agreements have been defined as top-down approaches requiring both international acquiescence combined with domestic ratification—conversely, the 2015 Paris Agreement signified a bottom-up approach towards mobilizing international agreements.³¹ Seeing that signatories of the Paris Agreement are not tied to an inflexible international initiative, these nations felt more comfortable with an unenforceable domestic regime imposing these pledges, as opposed to an international regime which would provide additional supervision.³² The bottom-up initiatives lack some of the procedural barriers of the top-down approach, i.e., ratification at both the international and domestic level; therefore, a bottom-up initiative is likely to avoid significant resistance from the United States Senate.³³ Either way, both the top-down and

were extremely promising for American support and even enthusiasm for the agreement.”). The Kyoto Protocol presented the exact opposite circumstances which explains why China and India failed to participate. *Id.*

³⁰ See Christopher Napoli, *Understanding Kyoto's Failure*, 32 SAIS REV. OF INT'L AFFAIRS 183, 195 (2012) (observing that the aforementioned “equation” not only explains the shortcomings presented by Kyoto's implementation, but this also explains why subsequent international agreements have failed to “secure any significant new pledges from developed countries.”).

³¹ See Krishna Prasad, *The Truth Behind International Climate Agreements: Why They Fail and Why the Bottom-Up is the Way Forward*, 28 COLO. NAT. RES. ENERGY & ENV'T L. REV. 217, 245 (2017) (demonstrating that initiatives prior to the Paris Agreement, potentially presented more procedural obstacles than the contemporaneously implemented international agreements). The Paris Agreement was a bottom-up approach, meaning “it was not subject to the constraints of a two-level game.” *Id.*

³² See *id.* at 246 (discussing the obstacles presented in obtaining the compliance of the United States, China, and India). Acquiescence by these nations in a top-down international agreements are imperative, although extremely difficult to achieve. *Id.* Allowing signatory nations to play a role in promulgating their own climate goals will be more effective in allowing the benefits of an initiative of this sort to be realized. *Id.*

³³ See *id.* (distinguishing the hardships of the top-down approach, from that of the bottom-up approach, by asserting that “it is impossible to negotiate a traditional top-

bottom-up approaches will likely be ineffective in spurring the governmental conduct necessary to effectuate climate justice—although, the science underlying these agreements serves an imperative role in influencing the current state of climate litigation.³⁴

B. Discussing Relevant Foreign & Domestic Case Law

An additional variable necessary in the climate justice equation is the presence of legal action by the general public in large industrialized nations.³⁵ Climate activists argue that legal action will serve as a mechanism that leaves domestic legislatures no other option but to follow domestically determined case law requiring affirmative governmental action.³⁶ Domestic and foreign courts have reviewed many climate litigation theories such as negligence claims, human rights actions, and constitutional claims—some of which will be unsuccessful in the United States, while others may remain actionable.³⁷

down climate agreement due to the opposition from the United States' Level II institution: the Senate.”).

³⁴ See Prasad, *supra* note 31, at 227 (highlighting the “massive partisan divide in the United States,” which makes it very unlikely for the United States Senate to ratify a climate agreement). The existence of significant funding of climate change denial organizations has made it extremely difficult to gain national traction of climate initiatives. *Id.* at 246–47. See Douglas Fischer, “Dark Money” Funds Climate Change Denial Effort, *SCI. AM.* (Dec. 23, 2013), archived at <https://perma.cc/A6P2-XB3N> (concluding that over 100 climate change denial organizations obtained almost \$558 million between 2003 and 2010); Food, Fossil Fuels, and Filthy Finance, *OXFAM INT’L* (Oct. 17, 2014), archived at <https://perma.cc/CK4G-BYTH> (pointing to the fossil fuel industry’s contribution of an estimated \$213 million in lobbying efforts, whereas the United States lobbying efforts alone, is estimated at \$160 million). The study explains that this figure is “the same amount that the government in Nepal has estimated is needed for crucial adaptation actions that currently remain unfunded.” *Id.*

³⁵ See Boom et al., *supra* note 5, at 2 (discussing the ‘new era of litigation,’ which include strategies “focused not only on private industry but on the sovereign responsibility of governments to preserve constitutional and public trust rights to a stable climate and healthy atmosphere on behalf of both present and future generations.”).

³⁶ See *id.* (discussing the apparent flaws of international agreements, and the results from governments lacking a commitment to “any concrete climate [change] recovery steps.”).

³⁷ See *id.* at 43 (stating the key findings of studies on climate change, and the evidence of litigation spreading “beyond the US into new jurisdictions throughout Asia, the Pacific and Europe.”).

1. Tort/Negligence Theories

The first legal theory addressed has been the use of tort claims brought against domestic governmental bodies for their failure to satisfy the standard of care in reducing emissions contributing to climate change.³⁸ In *Urgenda v. The Kingdom of Netherlands*, the District Court of Hauge held that the Netherlands was “acting negligently towards society in the context of hazardous climate change” because the government had not done enough to reduce carbon emissions.³⁹ Notably, applying traditional negligence principals, the District Court of Hauge also concluded that the efforts of the Kingdom of Netherlands were insufficient to fulfill its obligation to exercise reasonable care.⁴⁰

Alternatively, in *American Electric Power v. Connecticut*, common law nuisance claims were brought against electric power companies, as opposed to the domestic governmental body, seeking an order to require these companies to reduce fossil fuel emissions.⁴¹ The Supreme Court “held that the Clean Air Act, when coupled with the EPA’s discretionary authority recognized in *Massachusetts v. EPA*,” transfers authority to regulate pollutants to the Executive Branch, and remains outside the purview of the courts in light of the doctrine of

³⁸ See *Urgenda*, *supra* note 4, at P 5.1 (concluding that the Dutch government breached its duty of care regarding the measures taken to reduce GHG emissions to a level that satisfies their domestic and international obligations).

³⁹ See *Boom et al.*, *supra* note 5, at 29 (discussing the importance of this case which represented “the first time tort law was successfully relied upon to hold a state liable for failing to adequately mitigate climate change.”). The court further recognized that climate change is a “global problem and therefore required global accountability.” *Id.* (citing *Urgenda*, *supra* note 4, at P 4.79).

⁴⁰ See *Urgenda*, *supra* note 4, at P 4.79 (maintaining that although the amount of Dutch emissions is small compared to other countries, this does not affect their obligation to take precautionary measures towards exercising reasonable care).

⁴¹ See *Am. Elec. Power Co. v. Connecticut*, 564 U.S. 410, 411 (2011) (holding that the Clean Air Act gave the EPA jurisdiction to grant the very injunctive relief that the plaintiff desired, thus requiring this claim to be brought under the Clean Air Act as opposed to under the common law nuisance claim). *Boom* argues that although this case was dismissed, it serves as a starting point for cases seeking to hold these entities responsible for contributing to the global climate change crisis. See *Boom et al.*, *supra* note 5, at 25. Because “[c]ongress had delegated the regulatory power to the Environmental Protection Agency (EPA) to grant the same relief that the plaintiffs sought against the very same private power plants, such claims must be brought under the Clean Air Act.” *Id.*

displacement.⁴² Because Congress intended to preempt federal common law claims by giving regulatory authority to the EPA to regulate air pollutants, the plaintiff's common law claim was displaced by the Executive Branch's preemptive authority to regulate air pollutants.⁴³ The case was ultimately dismissed on the grounds that the cause of action was preempted, and the relief sought could not be provided through the courts.⁴⁴

2. Human Rights and the Public Trust Doctrine

The next prominent legal theory invoked by climate change litigants has been the case for preserving fundamental human rights.⁴⁵ An appellate Court in Pakistan was presented with a claim brought by a Pakistani farmer, Ashgar Leghari, who sued the government for not complying with the National Climate Change Policy of 2012, a domestic initiative to respond to climate change.⁴⁶ Judge Syed Mansoor Ali Shaw read Article 9 of the Pakistani Constitution to invoke the right to a healthy and clean environment.⁴⁷ Similar

⁴² See *Amer. Elec. Power Co.*, 564 U.S. at 427 (concluding that the "EPA may not decline to regulate carbon-dioxide emission from powerplants if refusal to act would be 'arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with law.')(citations omitted). See also STEVEN FERREY, *ENVIRONMENTAL LAW: EXAMPLES & EXPLANATION* 189 (Rachel E. Barkow et. al., eds., 8th ed. 2019) (noting that the Court provided an explanation that "its ruling does not affect state common law causes of action, which would be subject to a more exacting demonstration off congressional intent.").

⁴³ See *Am. Elec. Power Co.*, 564 U.S. at 427 (emphasizing that, although this claim could not provide the relief sought by plaintiffs, "the most important thing about this decision is that it buttresses the foundation for EPA to do its job.").

⁴⁴ See *Michigan v. United States Army Corp of Enf'rs*, No. 10 C 4457, 2012 U.S. Dist. LEXIS 170968, at *30 (N.D. Ill. 2012) (concluding that, although "the Court ultimately held that the public nuisance tort of air pollution had been displaced by enactment of the Clean Air Act, the Court never hinted that a federal agency could not commit a public nuisance.").

⁴⁵ See *Leghari v. Fed'n of Pakistan*, (HC Lahore) (2015) PLD No. 25501 (Pak.) [hereinafter *Leghari*] (concluding that the Court shall establish a Climate Change Commission, and provide jurisdiction to regulate the inaction of the Pakistani government).

⁴⁶ See Marc Z. Goldgrub, *COULD FOREIGN JUDICIAL CLIMATE ACTION VICTORIES INFLUENCE AMERICAN LEGAL PERSPECTIVES?*, 25 *CARDOZO J. INT'L & COMP. L.* 287, 293 (holding that "the government effort to put the policy plan into effect was, however, marked by "inaction, delay and lack of seriousness on the part of the Federal Government and the Government of the Punjab."").

⁴⁷ See *id.* at 293 (citing *Leghari* (Lahore High Court)) at 1

arguments have been tested in the United States.⁴⁸ For example, in *Foster v. Washington*, a group of climate change organizations and citizens (“plaintiffs”) brought suit for violation of the public trust doctrine—a state law doctrine—and for violation of state constitutional law.⁴⁹ The Washington Department of Ecology denied to reconsider the plaintiff’s petition—the plaintiffs thereafter sought judicial review, resulting in a subsequent court order regarding the Department’s denial to conduct rulemaking.⁵⁰ The court decided that the state “has a duty to ‘preserve, protect, and enhance the air quality for the current and future generations,’” and required the Department of Ecology to consult with the plaintiff’s concerning the promulgation of their rulemaking process.⁵¹

Judge Shaw interpreted Article 9 of the Pakistani Constitution's “right to life” to include “the right to a healthy and clean environment,” and held that citizens' rights to dignity (under Article 14) and property (under Article 23) also guaranteed citizens the right to be protected, to the extent of the government's ability, from the harmful effects of climate change.

(explaining that climate change is a serious threat to the water, food and energy security of Pakistan which offends the fundamental right to life under article 9 of the Constitution).

⁴⁸ *See id.* at 293 (concluding that strong correlations exist between constitutional rights and the governments duty to protect such fundamental rights from the “harmful effects of climate change.”).

⁴⁹ *See Boom et al., supra* note 5, at 34–35 (stating that the Washington Department of Ecology denied the plaintiffs original rulemaking petition, which resulted in this subsequent appeal).

⁵⁰ *See id.* at 35 (concluding that the unilateral withdrawal of the Departments proposed rule, signified, “the first time that a US court has ordered a state authority to promulgate regulations of carbon dioxide emissions, in accordance with its affirmative constitutional and public trust responsibilities, within a strict timeframe, and in consultation with youth petitioners.”).

⁵¹ *See id.* at 34–35 (declaring that this case served as a mechanism to facilitate state legislative action through the rulemaking process, by ordering the Washington Department of Ecology to work with the plaintiffs to promulgate and aid in providing recommendations to the state legislature on the basis of the public’s interest in natural resources held in trust (citing *Foster et al. v. Washington Dep’t of Ecology*, 2015 WL 7721362, at *1 ELR 20223 (Wash. Super. Ct. Nov. 19, 2015)). *See also* Goldgrub, *supra* note 46, at 312–13 (highlighting “[t]he subsequent victory of Foster's petitioners means the language of the decision accepting plaintiff's public trust argument is no longer mere dicta, but law persuasive to (albeit non-binding on) other state courts.”).

III. Facts

An example of contemporary domestic litigation is presented in *Juliana v. United States*, where twenty-one youth plaintiffs managed to successfully assert a substantive due process theory to a sustainable environment. This legal theory must be continuously replicated by climate litigants, which, if effective, will leave the judiciary no other option but to provide redress to prepared climate litigants.

A. *Juliana v. United States – Contextual Significance*

In *Juliana*, a group of youth activists (“youth plaintiffs”), brought suit against the federal government, primarily alleging that the government violated the Due Process Clause of the Fifth Amendment by failing to foster a “climate system capable of sustaining human life.”⁵² The youth plaintiffs claim that, by the government “continuing to permit, authorize, and subsidize fossil fuel use despite long being aware of its risks,” the youth plaintiffs have suffered climate related risks.⁵³ The youth plaintiffs in *Juliana* “draw a direct causal link between defendants’ policy choices and floods, food shortages, destruction of property, species extinction, among a host of other harms.”⁵⁴

⁵² See *Juliana v. United States*, 947 F.3d 1159, 1164 (9th Cir. 2020) (noting that the original complaint listed “the President, the United States, and federal agencies (collectively, “the government.”)). See also *Juliana v. United States*, 217 F. Supp. 3d 1224, 1233 (D. Or. 2016) (stating that the youth plaintiffs are represented by environmental activists, associations, and Doctors within this field).

⁵³ See *Juliana*, 217 F. Supp. 3d, at 1233 (First Am. Comp. ¶ 1) (noting the youth plaintiffs allege that the defendants have “known for more than fifty years that the carbon dioxide (“CO₂”) produced by burning fossil fuels was destabilizing the climate system in a way that would ‘significantly endanger plaintiffs with the damage persisting for millennia’”). See also *Juliana*, 947 F.3d at 1164 (conceding that the plaintiffs have presented “substantial evidentiary record documents that the federal government has long promoted fossil fuel use despite knowing that it can cause catastrophic climate change, and that failure to change existing policy may hasten an environmental apocalypse.”).

⁵⁴ See *Juliana*, 217 F. Supp. 3d at 1234 (highlighting the causal relationship between government’s conduct and the harms suffered by the youth plaintiffs). See also *Juliana*, 947 F.3d at 1580 (concluding that “copious expert evidence establishes that this unprecedented rise stems from fossil fuel combustion and will wreak havoc on the Earth’s climate if unchecked); see *id.* (emphasizing that “the record also

While the Ninth Circuit majority recognized that the injuries were not simply “‘conjectural’ or hypothetical,” the Ninth Circuit also found “at least a genuine factual dispute as to whether those policies were a ‘substantial factor’ in causing the youth plaintiffs’ injuries.”⁵⁵ The Majority not only recognizes the idea that “courts may order broad injunctive relief while leaving the ‘details of implementation’ to the government’s discretion,” but further acknowledge that “a less robust approach to addressing climate change” may be necessary.⁵⁶ Although, the Ninth Circuit believes that providing the requested relief is outside the courts authority, the Dissent provides an extremely compelling argument for the viability of the requested redress.⁵⁷ In highlighting *Brown v. Bd. of Educ.*,⁵⁸ the Dissent points to the Supreme Court’s lack of concern with the fact that “crafting relief would require individualized review of thousands of state and local policies that facilitated segregation.”⁵⁹ The crucial analogy exists in the ninety-one

conclusively establishes that the federal government has long understood the risks of fossil fuel use and increasing carbon dioxide emissions.”).

⁵⁵ See Juliana, 947 F.3d at 1169 (concluding that “at least some of the plaintiffs have presented evidence that climate change is affecting them now in concrete ways and will continue to do so unless checked.”). The court recognizes the injuries suffered by the Plaintiffs, and further recognizes that “the government affirmatively promotes fossil fuel use in a host of ways, including beneficial tax provisions, permits for imports and exports, subsidies for domestic and overseas projects, and leases for fuel extraction on federal land.” *Id.* at 1167. The court then highlights the salient facts that justify constitutional standing for the Plaintiffs—in particular, that “it will be increasingly difficult in light of that record for the political branches to deny that climate change is occurring, that the government has had a role in causing it, and that our elected officials have a moral responsibility to seek solutions.” *Id.* at 1175.

⁵⁶ See *id.* at 1187 (challenging the Majority opinion which believes that the relief sought is out of the control of the judiciary because the court they could not “formulate standards (1) to determine what relief ‘is sufficient to remediate the claimed constitutional violation; or (2) to ‘supervise or enforce’ such relief.”).

⁵⁷ See *id.* at 1184–85 (highlighting the Majority’s opinion that the “plaintiffs’ requested relief requires (1) the messy business of evaluating competing policy considerations to steer the government away from fossil fuels and (2) the intimidating task of supervising implementation over many years, if not decades.”). The Dissent stressed that this prong only asks whether the requested relief could redress the injury, not whether the requested relief—must—be granted. *Id.* The Dissent focuses on the fact that this is a “threshold issue distinct from the merits of the claim[.]” See Juliana, 947 F.3d at 1177.

⁵⁸ *Brown v. Bd. of Educ. (Brown II)*, 349 U.S. 294, 300–01 (1995).

⁵⁹ See Juliana, 947 F.3d at 1189 (emphasizing that “it took decades to even partially realize *Brown’s* promise, but the slow churn of constitutional vindication did not dissuade the *Brown* Court, and it should not dissuade us here.”).

year time frame between the Emancipation Proclamation and *Brown v. Bd. of Educ.*, as compared to the time frame regarding the governments awareness of climate change and this very suit.⁶⁰ “While all would now readily agree that the 91 years between the Emancipation Proclamation and the decision in *Brown v. Board* was too long...[i]n this case, my colleagues say that time is ‘never’; I say it is now.”⁶¹

To combat the majority’s contention that other mediums of enforcement are available for Americans to “vindicate” their rights through the ballot box, the Dissent points out that “when fundamental rights are at stake, individuals ‘need not await legislative action.’”⁶² While constituents certainly have the option of democratic diplomacy, “that process cannot override the laws of nature.”⁶³ The Dissent ultimately phrases the crux of the aforementioned dilemma by emphasizing that, “the majority laments that it cannot step into the shoes of the political branches . . . but appears ready to yield even if those branches walk the nation over the cliff.”⁶⁴

⁶⁰ See *id.* at 1191 (highlighting the idea that “determining when a court must step in to protect fundamental rights is not an exact science.”).

⁶¹ See *id.* (magnifying the proactive perspective taken by Judge Staton in an attempt to facilitate the necessary change that the other branches of government have historically refused to undertake).

⁶² See *id.* at 1180 (emphasizing the imperative nature of climate change and that this issue cannot afford to depend on legislation (citing *Obergefell v. Hodges* 576 U.S. 644 at 644 (2015))). See also *id.* at 1179 (explaining that “the stakes can be quite high in environmental disputes, as pollution causes tens of thousands of premature deaths each year, not to mention disability and diminished quality of life.”). See also *Juliana*, 217 F. Supp. 3d at 1234, n.3 (highlighting the District Court’s reliance on, then, President Barak Obama’s 2015 State of The Union Address, where he stated “[n]o challenge...poses a greater threat to future generations than climate change.”).

⁶³ See *Juliana*, 947 F.3d at 1176 (highlighting the analogy that the environmental effects from climate change will not wait for the democratic process, before wreaking havoc on the very citizens who failed to acknowledge its sincerity). “[A]bsent immediate action, is “an inhospitable future . . . marked by rising seas, coastal city functionality loss, mass migrations, resource wars, food shortages, heat waves, mega-storms, soil depletion and desiccation, freshwater shortage, public health system collapse, and the extinction of increasing numbers of species.” *Id.*

⁶⁴ See *id.* at 1181 (contending that “The political branches must often realize constitutional principles, but in a justiciable case or controversy, courts serve as the ultimate backstop.”).

B. *Juliana v. United States – Substantive Due Process*

The Due Process Clause of the Fifth Amendment bars the federal government from depriving a person of “life, liberty or property” without “due process of law.”⁶⁵ The youth plaintiffs allege that the government knowingly violated their substantive right to a “climate system capable of sustaining human life,” by directly increasing CO₂ levels, and continuing to endanger their health and welfare by approving and promoting the use of fossil fuels.⁶⁶

Depending on the alleged due process violation, a review of the governmental action in question will require the court to determine the proper legal standard to be applied to each particular violation.⁶⁷ The District Court in *Juliana* determined that the youth plaintiffs ‘adequately’ alleged the infringement of a fundamental right, and reiterated that such rights and liberties are fundamental if it is “either (1) ‘deeply rooted in the Nation’s history and tradition’ or (2) ‘fundamental to our scheme of ordered liberty.’”⁶⁸ The court stresses

⁶⁵ See U.S. Const. Amend. V. (highlighting that these same due process rights apply to state governments by applying the Fourteenth Amendment of the United States Constitution to the Fifth Amendment Due Process Clause). The same fundamental due process rights provided by the federal government to all citizens, as established under the Fifth Amendment, inherently include the same rights which should also be provided by state governments to their citizens. *Duncan v. Louisiana*, 391 U.S. 145, 147–49 (1968).

⁶⁶ See *Juliana*, 217 F. Supp. 3d at 1247–48 (addressing the allegations promulgated in the plaintiff’s complaint and other discovery materials, which further categorize the injury, causation and redressability). In the plaintiff’s first amended complaint, it is alleged that the government, even “[a]fter knowingly creating this dangerous situation for Plaintiffs,” knowingly continued to “enhance that danger by allowing fossil fuel production, consumption, and combustion at dangerous levels...”. *Id.* at 1248 (citing First Am. Compl. ¶ 284).

⁶⁷ See *id.* at 1249 (concluding that under the rational basis test, Courts shall uphold the alleged governmental action, if the government can proffer a “rational means of achieving a legitimate governmental end[.]” (citing *Kim v. United States*, 121 F.3d 1269, 1273 (9th Cir. 1997))); see also *Witt v. Dep’t of the Air Force*, 527 F.3d at 817 (highlighting that strict scrutiny must be applied to the governmental action if the alleged action infringes on a fundamental right). See Mariam Morshedi, *Levels of Scrutiny*, SUBSCRIPT LAW (Mar. 6, 2018), archived at <https://perma.cc/ZZ2B-9KCD> (providing a general overview on the manner in which courts determine and analyze whether the alleged governmental action is subject to a certain level of scrutiny, and the analysis which should follow).

⁶⁸ See *Juliana*, 217 F. Supp. 3d at 1250 (concluding that, to hold such alleged actions as not in violation of citizens fundamental due process rights, “would be to say that the Constitution affords no protection against government’s knowing decision to

the importance of “exercising the utmost care whenever we are asked to break new ground in this field, lest the liberty protected by the Due Process Clause be subtly transformed into’ judicial policy preferences.”⁶⁹ Additionally, the District Court expressly relied on *Obergefell v. Hodges*, where the Supreme Court recognized that “the identification and protection of fundamental rights is an enduring part of the judicial duty to interpret the Constitution . . . [that has not been reduced to any formula.]”⁷⁰ Therefore, in determining whether any fundamental right exists, the “court must exercise ‘reasoned judgment’ keeping in mind that ‘history and tradition guide and discipline this inquiry but do no set its outer boundaries.’”⁷¹

Furthermore, the *Juliana* Court emphasized the importance of certain rights enabling others, as stressed in *Obergefell*, where the Court held that although a right to privacy was not expressly mentioned in the text of the Constitution, this unenumerated fundamental right was “grounded in an understanding of marriage as a right underlying and supporting other vital liberties.”⁷² The court here, in exercising their “reasoned judgment,” believed there is “no doubt that the right to a climate system capable of sustaining human

poison the air its citizens breathe or the water its citizens drink.”). This interpretation highlights the progressive applicative nature of fundamental due process rights, and that generally held principles permit unenumerated fundamental liberties as inherent due process rights under the aforementioned analysis. *Id.* at 1249 (quoting *McDonald v. City of Chicago, Ill.*, 561 U.S. 742, 767 (2010)).

⁶⁹ *See id.* at 1249 (stating that “[t]his does not mean that ‘new’ fundamental rights are out of bounds, though.”). The Court then relied on analysis from *Obergefell v. Hodges*, to emphasize a living constitutional approach to the Courts interpretation of the fundamental rights alleged in the case at bar. *Id.*

⁷⁰ *See id.* (quoting *Obergefell v. Hodges*, 576 U.S. 664 at 663 (2015)). The Court recognizes that unenumerated fundamental rights, such as a right to governmental action in preserving a healthy and livable environment—requires the application of more than one Constitutional source. *Id.* at 1249–50 (citing *Roe v. Wade*, 410 U.S. 113, 152–53 (1973)).

⁷¹ *See Juliana*, 217 F. Supp. 3d at 1249 (quoting *Obergefell*, 576 U.S. 644, 644 (contending that “[t]he genius of the Constitution is that its text allows ‘future generation [to] protect...the right of all persons to enjoy liberty as we learn its meaning.’”)).

⁷² *See Obergefell*, 576 U.S. at 666 (emphasizing that “it would be contradictory ‘to recognize a right of privacy with respect to other matters of family life and not with respect to the decision to enter the relationship that is at the foundation of the family in our society.’”). The Court later stressed that “marriage is a keystone of our social order.” *Id.* at 669.

life is fundamental to a free and ordered society.”⁷³ Thus, in an attempt to “strike a balance” in limiting extensive climate litigation, while also ensuring courts are viable forums for such claims to be brought, Judge Aiken provided more clarity to the phrase, “capable of sustaining human life.”⁷⁴ Judge Aiken noted that a plaintiff need not claim that governmental actions will “result in the extinction of humans as a species” in order for a climate change claim to prevail—instead the claims must be allowed to be brought where the government knowingly allowed the poisoning of air and water sources.⁷⁵

Next, the District Court noted that the Due Process Clause does not oblige affirmative governmental action, even in circumstances where such aid would be necessary to preserve the fundamental interests of an individual.⁷⁶ However, there are two exceptions where the Due Process Clause does require an affirmative obligation on behalf of the government to act in order to justify standing: (1) the “special relationship exception,” and (2) the “danger creation exception.”⁷⁷ The youth plaintiffs rely on the danger creation

⁷³ See *Juliana*, 217 F. Supp. 3d at 1250 (citing *Obergefell*, 576 U.S. 644 at 669 (concluding that, “[j]ust as marriage is the ‘foundation of the family,’ a stable climate system is quite literally the foundation ‘of society, without which there would be neither civilization nor progress.’”). The Court in *Obergefell* later stressed that “marriage is a keystone of our social order.” *Obergefell*, 576 U.S. 644 at 669. This allowed the court in the case-at-bar to make the same inference regarding climate change. *Juliana*, 217 F. Supp. 3d at 1250.

⁷⁴ See *Juliana*, 217 F. Supp. 3d at 1250 (concluding that, “where a complaint alleges governmental action is affirmatively and substantially damaging the climate system in a way that will cause human deaths, shorten human lifespans, result in widespread damage to property, threaten human food sources, and dramatically alter the planet's ecosystem,” a claim premised on an infringement of due process rights has been alleged).

⁷⁵ See *id.* (emphasizing that the youth plaintiffs here, had “adequately alleged infringement of a fundamental right.”).

⁷⁶ See *id.* at 1250–51 (quoting *DeShaney v. Winnebago Cnty. Dep’t of Soc. Servs.*, 589 U.S. 189, 196 (1989)).

⁷⁷ See *L.W. v. Grubbs*, 974 F.2d 119, 121 (9th Cir. 1992) (defining that the ‘special relationship exception’ is triggered when an entity has created a special relationship with another entity). “Cases have imposed liability under a due process theory, premised on an abuse of that special relationship.” *Id.* The ‘danger creation exemption,’ on the other hand, allows a substantive due process claim to be asserted when government’s conduct “places a person in peril in deliberate indifference to their safety[.]” *Juliana*, 217 F. Supp. 3d at 1251 (quoting *Penilla v. City of Huntington Park*, 115 F.3d 707, 709 (9th Cir. 1997)). See also *Juliana*, 217 F. Supp. 3d at 1252 (concluding that a danger creation due process claim must allege that, “(1) the government's acts created the danger to the plaintiff; (2) the government knew its

exception to challenge the government's failure to affirmatively act by means of limiting third party CO₂ emissions.⁷⁸ Alleging this exception in regards to governmental action or inaction requires the plaintiff prove the presence of danger that was created by such action or inaction, which otherwise would not have been faced.⁷⁹ The danger creation exception requires the plaintiff to show that the government 'recognized' the unreasonable risk, and "actually intended to expose the plaintiff to such risks without regard of the consequences to the plaintiff"—similar to that of "deliberate indifference."⁸⁰ The youth plaintiffs stated that the government not only knew of the impacts of their actions on climate change, but that this danger stems from endorsing the fossil fuel industry.⁸¹

The defendants claim that such a wide reaching application of the danger creation exception would allow a plaintiff to challenge

acts caused that danger; and (3) the government with deliberate indifference failed to act to prevent the alleged harm.”).

⁷⁸ See *Juliana*, 217 F. Supp. 3d at 1251 (highlighting that the plaintiff alleging such violative action is required to make a showing that the state actor “create[d] or expose[d]” a constituent to a type of danger, which otherwise would not have been faced (citing *Kennedy v. City of Ridgefield*, 439 F.3d 1055, 1061 (9th Cir. 2006))).

⁷⁹ See *id.* (quoting *Pauluk v. Savage*, 836 F.3d 1117, 1125 (9th Cir. 2016) (concluding that the action must place the plaintiff “in a worse position than that in which he would have been had the state not acted.”)).

⁸⁰ See *id.* (quoting *Campbell v. Wash. Dep’t of Soc. & Health Servs.*, 671 F.3d 837, 846 (9th Cir. 2011) (providing extended analysis on the intended harm within the context of the Danger Creation Theory). The court in the case-at-bar reiterates the standard for asserting the necessary level of intended harm by stating that the defendant’s conduct must be of “‘deliberate indifference,’ which ‘requires a culpable mental state more than gross negligence. *Id.* at 1251 (quoting *Pauluk*, 836 F.3d at 1125).

⁸¹ See *Juliana*, 217 F. Supp. 3d at 1251 (quoting Plaintiff’s First Am. Compl. ¶ 85) (noting the plaintiffs allege that the “danger stems ‘in substantial part, [from] Defendants’ historic and continuing permitting, authorizing, and subsidizing of fossil fuel extraction, production, transportation, and utilization.”).

In sum: plaintiffs allege defendants played a unique and central role in the creation of our current climate crisis; that they contributed to the crisis with full knowledge of the significant and unreasonable risks posed by climate change; and that the Due Process Clause therefore imposes a special duty on defendants to use their statutory and regulatory authority to reduce greenhouse gas emissions. Accepting the allegations of the complaint as true, plaintiffs have adequately alleged a danger creation claim.

Id. at 1251–52. (quotations omitted).

nearly any type of government program.⁸² However, the District Court readily rejected the defendants arguments by noting that there are ‘rigorous’ requirements to properly asserting the danger creation due process claim.⁸³ The court stated that these “stringent standards are sufficient safeguards against the flood of litigation concerns raised by defendants.”⁸⁴ Moreover, the District Court emphasized that federal courts have been too “cautious and overly deferential in the area of environmental law, and the world has suffered for it.”⁸⁵ As stressed by Judge Staton of the Ninth Circuit Court of Appeals, the importance of an independent judiciary serving as a “coequal branch of government” is imperative in the face of such a contemporaneously controversial issue as climate change.⁸⁶

C. *Redressing the Harms: Contemporary Obstacles & Potential Avenues of Redress*

1. Remedies Sought in *Juliana v. United States*

A vital aspect of establishing the substantive due process claim to a “stable climate ... ocean and atmosphere free from dangerous levels of CO₂,” is formulating a feasible request for redressability that can “slow or reduce” the harm.⁸⁷ In *Juliana*, the type of relief sought

⁸² *See id.* at 1252 (claiming that permitting the youth plaintiffs to assert a “danger creation exception in this context would permit plaintiffs to raise a substantive due process claim to challenge virtually any government program”).

⁸³ *See id.* (stating the lengthy and ‘rigorous’ elements of an alleged ‘danger creation’ due process claim).

⁸⁴ *See id.* (pointing to the challenges that every litigant must face in similar lawsuits and placing further emphasis on the ‘rigorous’ evidentiary requirements imposed to assert a proper substantive due process claim ‘danger creation’ claim).

⁸⁵ *See id.* at 1262 (concluding that it is the role of the judiciary to carefully address the “barriers to litigation created by modern doctrines” and the deferential standards provided to federal agencies).

⁸⁶ *See Juliana*, 217 F. Supp. 3d at 1263 (emphasizing that “A strong and independent judiciary is the cornerstone of our liberties...[e]ven when a case implicates hotly contested political issues, the judiciary must not shrink from its role as a coequal branch of government.”); *see also Juliana*, 947 F.3d, at 1188 (Staton, J., dissenting) (declaring the Ninth Circuit’s inability “to equitably walk the government back from that line without wholly subverting the authority of our coequal branches.”). That line being the unlawful conduct exhibited by the government. *Id.*

⁸⁷ *See Juliana*, 217 F. Supp. 3d, at 1247 (stating that the redressability prong does not require certainty in bringing about a favorable decision to redress the injury suffered, rather, only a substantial likelihood that the remedy will bring about a favorable

was a judicial order requiring the defendants to implement “an enforceable national remedial plan to phase out fossil fuel emissions and drawn down excess atmospheric CO₂.”⁸⁸ The district court briefly addressed the defendant’s theory that an injunction on the fossil fuel industry would be inconsequential to the overall reduction of dangerous emissions—stating that redressability does not require certainty.⁸⁹ Rather, in order to proceed to the merits, as a threshold question, the inquiry relies on whether the injury caused by the defendants “would at least partially redress their asserted injuries.”⁹⁰ However, the Ninth Circuit did take issue with the comprehensive request for redress in regard to the industry wide transition to renewable energy production.⁹¹ Construing an excessively narrow role for each political branch, as stressed by the court, seems eerily familiar to those considerations taken by the United States in resisting compliance with the aforementioned international agreements that could not be justified by a cost benefit analysis.⁹²

decision to redress the injury suffered). The court further relied on the idea that successfully asserting this does not mean that the injury will be completely redressed, rather the remedy requested need only “slow or reduce the harm.” *Massachusetts v. EPA*, 549 U.S. 497, 525 (2007) (citing *Larson v. Valente*, 456 U.S. 228, 244, n.15 (1982)).

⁸⁸ See *Juliana*, 217 F. Supp. 3d. at 1247 (providing in Plaintiff First Am. Compl. ¶ 94 more detail regarding the plaintiff’s claim for relief and the requested corresponding remedy).

⁸⁹ See *id.* (stressing that the Defendant’s concerns regarding redressability are moot for two reasons). The first reason being that the redressability inquiry need not require certainty, rather only a “substantial likelihood that the Court could provide meaningful relief...[s]econd, the possibility that some other individual or entity might later cause the same injury does not defeat standing.” *Id.*

⁹⁰ See *id.* at 1247–48 (viewing the complaint in the light most favorable to the plaintiffs’, an order to cease the permitting, authorization, subsidizing, and other executive functions of endorsing the fossil fuel industry, combined with a remedial plan to develop a “national plan to restore Earth’s energy balance...so as to stabilize the climate system,” are ‘adequate’ grounds for standing.).

⁹¹ See *Juliana*, 947 F.3d at 1172 (stating that the political branches may consider that “economic or defense considerations called for continuation of the very programs challenged in this suit, or a less robust approach to addressing climate change”).

⁹² See *Sunstein*, *supra* note 16, at 93 (stressing the significance of how cost considerations have historically pitted the United States against initiatives geared towards addressing the climate crisis). This point being that, “the success of the Montreal Protocol and the mixed picture for the Kyoto Protocol were largely driven by the decisions of the United States, and those decisions were driven in turn by a form of purely domestic cost-benefit analysis.” *Id.* at 25.

While the Ninth Circuit believes the requested relief is not capable of being provided through the courts—or that a less robust request may have been proper—the youth plaintiff’s argue that courts not only routinely grant less relief than requested, but also that “the inability to compel legislation” does not allow the judiciary to delegate the “duty to enforce constitutional rights.”⁹³ While many obstacles must be overcome to achieve the requested redress, a plan focused on changes in commercial and consumer behavior, combating fossil fuel endorsement, and local decentralized renewable generation will “strive to give the judges the tools” to effectuate a feasible formula for redress.⁹⁴

2. Obstacles in Achieving A Shift from Fossil Fuels to Renewables

Transitioning to renewable energy remains the obvious solution, as scholars and commentators have concluded that “[t]he practicality of any scheme to extract CO₂ from the air is dubious.”⁹⁵ Although municipalities have taken steps to incentivize renewable energy generation, such energy programs and initiatives only reach a minimal percentage of overall consumers.⁹⁶ In light of the ineffective shift to responsible energy generation, scholars have sought to emphasize that fossil fuels “are not made to pay their costs to society.”⁹⁷ Therefore, the implementation of a volume based carbon

⁹³ See *Juliana*, 947 F.3d at 1184 (providing an analysis concerning the circumstances which implicate the judiciary to act on behalf of the constituents when their constitutionally protected rights have been violated, and the other branches of government have failed to remedy these violations).

⁹⁴ See *THE CASE FOR YOUNG PEOPLE AND NATURE*, *supra* note 6, at 22 (presenting the idea of an across-the-board tax).

⁹⁵ See *id.* at 21–22 (highlighting that the large costs of addressing emission production through carbon capture will be unfairly and unproportionate placed on future generations).

⁹⁶ See *id.* at 22 (noting that the “post-fossil fuel world of clean energies is blocked by a fundamental fact, as certain as the law of gravity: as long as fossil fuels are the cheapest energy, they will be burned.”).

⁹⁷ See *id.* at 21 (highlighting that, according to the IPCC, if global warming increases, there is high confidence or very high confidence that: “ (1) increased malnutrition and consequent disorders, including those related to child growth and development, (2) increased death, disease and injuries from heat waves, floods, storms, fires and droughts, (3) increased cardio-respiratory morbidity and mortality associated with ground-level ozone, (4) some benefits to health, including fewer deaths from cold,

emission fee with proceeds distributed to the public is the keystone of this shift—“but it must be combined with a portfolio of other action” in order to ensure that the cost of fossil fuels is synonymous with the harm it causes to society.⁹⁸

The federal government has been another strong adversary to renewable energy implementation.⁹⁹ The Trump administration monitored and removed research conducted by climate scientists who discussed the anthropogenic causes of climate change.¹⁰⁰ Furthermore, fossil fuel lobbying groups present another obstacle towards gaining stronger consensus for climate change legislation.¹⁰¹

The significant resistance from the political branches of government evidences affirmative acts that prevent climate change redress—rather than resulting from a society that lacks technical or infrastructural resources.¹⁰² Whether it be the exact remedial plan

although it is expected that these would be outweighed by the negative effects.” (quotations omitted).

⁹⁸ See *id.* at 22 (according to sources addressing a comprehensive assessment of the economics involved with such a tax, research has made it clear that “[a]n across-the-board price on all fossil fuel CO₂ emissions emerges as the simplest, easiest, fastest and most effective way to phase down carbon emissions, and this approach presents fewer obstacles to international agreement.”). For a successful ‘across-the-board carbon tax,’ the tax must be coupled some of the following additional measures: “energy research and development with demonstration programs; public investment in complementary infrastructure such as improved electric grids; global monitoring systems; energy efficiency regulations; public education and awareness; support for climate change mitigation and adaptation in undeveloped countries.” *Id.*

⁹⁹ See Laignee Barron, *Here’s What the EPA’s Website Looks Like After a Year of Climate Change Censorship*, TIME (Mar. 1, 2018), archived at <https://perma.cc/4GK7-FTVY> (emphasizing that the EPA’s ‘censorship’ of climate change content is making it significantly more difficult to implement informed and progressive policy, and that such censorship is “also possibly threatening lives.”).

¹⁰⁰ See Maria Caffrey, *I’m a scientist. Under Trump I lost my job for refusing to hide climate crisis facts*, THE GUARDIAN (July 25, 2019), archived at <https://perma.cc/HLJ6-N6QJ> (providing a first-hand account of the aggressive and coercive manner that this administration has combated the truth on climate science: “It was while I was on leave that I received an email from another climate scientist at the NPS who warned me that the senior leadership was ordering changes to my report without my knowledge. They had scrubbed of any mention of the human causes of the climate crisis. This was not normal editorial adjustment. This was climate science denial.”).

¹⁰¹ See *Food, Fossil Fuels, and Filthy Finance*, *supra* note 34 (emphasizing the fossil fuel industry’s contribution of an estimated \$213 million in lobbying efforts, whereas the United States lobbying efforts alone, is estimated at \$160 million).

¹⁰² See Barron, *supra* note 99 (emphasizing the disastrous effects regarding the EPA’s ‘censorship’ of climate change content); see also Caffrey, *supra* note 100

requested by plaintiffs, or a less robust plan as suggested by the Ninth Circuit, the youth plaintiffs, who have adequately alleged an injury and causation, have nowhere left to turn but the courts in search of redress to these constitutional violations.

3. Proposals to Effectuate Redressability – Renewable Energy Initiatives

The Green New Deal follows the comprehensive approach to abandoning fossil fuel use in the United States¹⁰³ This nation-wide approach is expected to create twenty million jobs by investing in clean energy throughout all facets of life, such as, transportation, agriculture and infrastructure.¹⁰⁴ Further, this deal seeks to “‘redirect’ fossil fuel research funds, and allocate them to renewable energy research—thus, facilitating a “nationwide smart electricity grid.”¹⁰⁵ This program also

(discussing the aggressive and coercive manner that this administration has combated the truth on climate science); *see also Food, Fossil Fuels, and Filthy Finance, supra* note 34 (highlighting the extensive lobbying efforts undertaken by the United States as compared to the rest of the globe).

¹⁰³ *See* Juliana, 217 F. Supp. 3d at 1247–48 (emphasizing the necessity of a comprehensive climate recovery plan focused on the reduction of CO₂ emissions, reforestation efforts for carbon capture, implementation of renewable energy at both the consumer and commercial level, eliminating fossil fuel subsidization in an attempt to neutralize atmospheric CO₂ to less than 350 parts per million by 2100.); *see Pathway to Climate Recovery*, OUR CHILDREN’S TRUST (Oct. 14, 2019), *archived at* <https://perma.cc/S4LT-WYAM> (highlighting the remedies requested in *Juliana*, with much of the plan’s characteristics according with that of the Green New Deal); *see also The Green New Deal*, GREEN PARTY US (Oct. 14, 2019), *archived at* <https://perma.cc/3XNV-PZ3F> [hereinafter *Green Party US*] (outlining the Green New Deal, what it will accomplish, and its goal of achieving 100% Clean Energy by 2030).

¹⁰⁴ *See* Green Party US, *supra* note 103 (discussing that twenty million jobs will result from the Green New Deal, and those jobs will result in investing towards “public transit, sustainable (regenerative) agriculture, conservation and restoration of critical infrastructure, including ecosystems.”).

¹⁰⁵ *See* Green Party US, *supra* note 103 (noting that a ‘nationwide smart electricity grid’ will be capable of effective storage in the form of various renewable sources). *See also Renewables are a better investment than carbon capture for tackling climate change*, LANCASTER UNIV. (Apr. 8, 2019), *archived at* <https://perma.cc/82H4-82PW> (discussing the economic capital, and environmental shortcomings associated with investments in carbon capture, as opposed to a much smarter and environmentally safer investment toward local and national renewable energy resources); *see also* Steven Ferrey, LAW OF INDEPENDENT POWER, § 2:21 Energy Storage (2011) (discussing generation technologies, fuels for electric and thermal energy, evolving

seeks to ensure that those constituents most impacted by climate change, or had their job displaced by this transition, will be provided aid while transition to other work.¹⁰⁶ A successful implementation of this comprehensive clean energy approach—whether it be the Green New Deal or any other ‘Deal’—will certainly require acquiescence, and cooperation at the national, state, and localized levels.¹⁰⁷

Although the aforementioned approach is sought to be implemented at the national level, states have already employed localized ‘new deals’ which are aimed at the same goal of attaining 100% renewable energy by the year 2030.¹⁰⁸ States like California have become more aggressive in applying localized-pressure to facilitate the use of clean energy.¹⁰⁹ Additionally, states like Massachusetts have also sought to implement renewably-driven regulatory incentives for more pervasive adoption throughout the State.¹¹⁰ Replicability of these renewable programs have been

technologies, and processes involved with the storage of energy); *see also How Energy Storage Works*, UNION OF CONCERNED SCIENTISTS (Feb. 19, 2015), *archived at* <https://perma.cc/TR3M-ULZ4> (expressing the contemporary state of energy storage technologies, its benefits, and the future of this industry). This article discusses energy storage which can be implemented to curtail the largest obstacles in achieving renewable energy implementation—that problem being, intermittency—thus, this article discusses energy storage recourses such as, thermal storage, compressed air energy storage (CAES), hydrogen, pumped hydroelectric storage, flywheels, and batteries. *How Energy Storage Works, supra*.

¹⁰⁶ *See* Green Party US, *supra* note 103 (stating that such a workforce initiative would require an “Economic Bill of Rights—the right to single-payer healthcare, a guaranteed job at a living wage, affordable housing and free college education.”).

¹⁰⁷ *See* Joseph H. Margolies, *Powerful Friends: Epsa, Hughes, And Cooperative Federalism For State Renewable Energy Policy*, 118 COLUM. L. REV. 1425, 1427 (discussing the importance of cooperative federalism in introducing renewable energy, and the various manners of its implementation as the prominent resources at both the state and national level).

¹⁰⁸ *See* Justin Worland, *California Already Has a Green New Deal. Here’s How it Works*, TIME (Mar. 29, 2019), *archived at* <https://perma.cc/RE96-SUC6> (discussing California’s current ‘Green New Deal’ and providing a discussion on mobilizing such efforts at the state level, in order to ultimately facilitate changes at a larger scale).

¹⁰⁹ *See California leads fight to curb climate change*, ENV’T DEFENSE FUND (Feb. 1, 2020), *archived at* <https://perma.cc/NRM3-SGCM> (providing that California’s Global Warming Solutions Act of 2006 (AB 32), serves as “landmark legislation that set an absolute statewide limit on greenhouse gas emissions, and confirmed California’s commitment to transition to a sustainable, clean energy economy”).

¹¹⁰ *See* Massachusetts Smart Program, 225 CMR 20.07(5) (outlining the process and necessary qualifications to apply for the SMART program); *see also Solar Massachusetts Renewable Target (SMART) Program*, SMART MASS. SOLAR

determined to be a key factor in effectuating effective implementation.¹¹¹

4. A Less “Robust” Approach – Localized Initiatives Building the Renewable Grid

Consumer engagement, legislative tools, and technological advancements have allowed for renewable energy, more specifically, the potential of net-metering, to combat environmentally irresponsible and wasteful energy generation.¹¹² The ultimate goal of net metering is to incentivize market participants to engage in state regulatory, or utility-implemented renewable energy programs.¹¹³ When a customer uses electricity from the utility, the meter is running forward—when the amount of electricity produced at the consumer’s home exceeds the amount used, the excess generation causes the consumers meter to run in reverse, therefore allowing consumers to receive credits for this excess generation.¹¹⁴ Net metering compensation is not premised on

PROGRAM (Oct. 14, 2019), *archived at* <https://perma.cc/8PSX-Q7KX> (discussing this localized initiative, and providing a general overview on the manner in which this program facilitates a transition to safer and more responsible ways in acquiring energy).

¹¹¹ See Marie Donahue, *Which Regions and States are Leading in Local Clean Energy?*, INST. FOR LOCAL SELF-RELIANCE (Mar. 22, 2019), *archived at* <https://perma.cc/NN49-FBNW> (highlighting that regional classification of states which can maximize a particular source of renewable energy, will provide more effectiveness, seeing as southern states may have more success with solar wind generation, as opposed to solar, which likely is not the case for those states in the Midwest).

¹¹² See Austin Perea, et al., *Solar Market Insight Report 2019 Q2*, SOLAR ENERGY INDUS. ASS’N (June 18, 2019), *archived at* <https://perma.cc/L22A-4SL5> (highlighting the projections which predict nearly 4 million solar installations will occur in the year 2023). See also *Glossary*, DSIRE (Nov. 15, 2019), *archived at* <https://perma.cc/E32X-8GX6> (depicting the states which have adopted net metering programs, along with providing a detailed explanation of the regulatory structure of each states’ program).

¹¹³ See *Net Metering*, SOLAR ENERGY INDUS. ASS’N (Dec. 1, 2019), *archived at* <https://perma.cc/9TD3-VZE4> (highlighting that not only do net metering programs serve environmental purposes, it also creates a “smoother demand curve...and allow utilities to better manage their peak electricity loads”).

¹¹⁴ See Steven Ferrey, *Torquing the Levers of International Power*, 15 WASH. U. GLOBAL STUD. L. REV. 255, 287 (2016) (highlighting that when a customer with net metering generation exceeds the customers use, the excess electricity produced flows back to the grid and credits will be provided for this excess energy, and ultimately allocated towards the customers energy bill). See also *Glossary*, *supra* note 112

the “fair or equitable price based on ratemaking law,” rather, customers generally receive an amount above the utilities avoided costs.¹¹⁵ Ultimately, net metering not only provides benefits to customers by allowing them to maximize their on-site energy consumption—it also reduces the amount of energy necessary to be distributed from the utilities centralized generation source—an important concept seeing that excessive losses of electricity occurs through the use of centralized energy generation.¹¹⁶

In addition to the many state and localized initiatives emphasizing renewable generation, the Energy Policy Act of 2005 (“EPACT”) prompted the federal endorsement of more expansive state-implemented net metering programs.¹¹⁷ Depending on the jurisdiction, the source of generation, capacity, and the configuration of the credit system will generally vary.¹¹⁸ Some states allow for multiple customers to benefit from the same generation facility without each being physically connected—this type of net metering program

(noting that, “[i]n effect, the customer uses excess generation to offset electricity that the customer otherwise would have to purchase at the utility’s full retail rate.”).

¹¹⁵ See Steven Ferrey, LAW OF INDEP. POWER, §§ 4:28, 7:1 (41st ed., 2017) (stating that the utility’s avoided cost, is the wholesale cost of purchasing or producing electricity, an amount far less than the retail price which often includes charges for distribution, and other such costs). See Steven Ferrey, *The Medium Is The Message*, 35 VA. ENV’T L. L.J. 231, 257 (2017) [hereinafter *The Medium Is The Message*] (establishing examples of the net metering retail rate which is generally sold at roughly \$ 0.20/kWh, whereas wholesale power is generally sold for roughly \$0.04 to \$0.05/kWh).

¹¹⁶ See *The Medium Is The Message*, supra note 114, at 243 (discussing the benefits of transitioning to more distributed generation sources, as opposed to the historically used centralized generation); see *id.* at 245, n.191 (highlighting the global trend that most countries in North American and Europe suffer transmission and distribution losses of between 4% to 8%). “Generating power on-site avoids energy loss...and can defer transmission capacity, upgrade modifications, and distribution costs.” *Id.* at 245.

¹¹⁷ See The Energy Policy Act of 2005, Pub. L. No. 109 – 58, § 1251, 119 Stat. 594 (2005) (signifying a more uniform shift towards optimizing electricity generation, while also emphasizing a transition towards more renewable energy initiatives). EPACT also required currently regulated utilities to offer net metering programs by 2007, while also requiring all other private non-regulated utilities to analyze and consider whether to offer net metering programs to its customers. *Id.*

¹¹⁸ See Steven Ferrey, *Virtual "Nets" and Law: Power Navigates the Supremacy Clause*, 25 GEO. INT’L ENV’T L. L. REV. 267, 280–88 (2012) [hereinafter *Virtual "Nets" and Law*] (noting the different rate of return provided to customers engaged in various net metering programs, and highlighting that some states provide the retail rate, while other states limit the excess energy produced, to the utility’s avoided cost).

has been phrased as “community net metering.”¹¹⁹ In this practice, rather than each individual home connecting to the community generation source, the renewable source is connected to the grid and redistributes the electricity to each participating customer.¹²⁰

Massachusetts’ implementation of net metering programs further expanded the breadth of renewable energy regulatory efforts in 2008 by passing the Green Communities Act.¹²¹ Massachusetts has categorically promulgated particular restrictions on the various classes of net metered participants—Class I, Class II and Class III—with the credit system depending on the class each participant falls within.¹²² Class I and II participants are provided a credit resembling a return closer to the retail rate, whereas Class III is generally provided the utilities avoided cost rate.¹²³ Another unique aspect of Massachusetts’ net metering program is that at the end of the applicable billing cycle, Class I and II participants can ‘roll-over’ their credits, whereas Class III participants have the option of cash compensation for their excess contribution, or to roll such credits over as available to Class I and II.¹²⁴

¹¹⁹ See Benjamin Hanna, *FERC Net Metering Decisions Keep States In The Dark*, 40 B.C. ENV’T L. AFF. L. REV. 133, 146–47 (2015) (noting that “these policies, known as community net metering, allow neighbors to offset their utility bills as if they each had a generator system on their homes.”). Rather than connecting the community generation facility to each participant’s home, it connects to the utility grid which in essence distributes this power. *Id.*

¹²⁰ See *Virtual "Nets" and Law*, *supra* note 117, at 292–93 (discussing the three types of community net metering which have been implemented in the various states). “These states have enacted three different variations of community net metering: neighborhood net metering (representing a shared investment); meter aggregation (applying credits to multiple proximate meters); and bill sharing.” *Id.* at 292.

¹²¹ See Green Communities Act of 2008, ch. 169, 2008 Mass. Acts 1 . (2008) (providing that the purpose of the act is to achieve “renewable and alternative energy and energy efficiency in the commonwealth”).

¹²² See *Virtual "Nets" and Law*, *supra* note 117, at 283 (citing MASS. GEN. LAWS ch. 164, § 1G (West 2011) (highlighting that net metering participants are defined as producers belonging to one of three classes based on type, size, and ownership)).

¹²³ See Hanna, *supra* note 118, at 147–148 (stressing why Class III facilities are provided less for their excess energy production). “Class III facilities are the largest allowed by the statute and most closely resemble a wholesale power producer.” *Id.* at 147. Wholesale power producers are primarily production with minimal consumption. *Id.*

¹²⁴ See *Virtual "Nets" and Law*, *supra* note 117, at 285 (highlighting the diversified class of market participants and the eligible actions participants can take in regards to the credits revived) (citing MASS. GEN. LAWS ch. 164, § 1G (West 2011)).

Another feature which exists in the Massachusetts regulatory program is their “virtual credit system”—a mechanism to further promote the adoption of renewable energy throughout various levels of distributed energy generation.¹²⁵ The credits obtained by ‘host customers’ can be sold to ‘non-host customers’ to offset their electric bills.¹²⁶ This allows for integrated ‘credit sharing’ in a particular jurisdiction for customers using the same utility service.¹²⁷

Rhode Island has also expanded the class of market participants eligible to engage in these community net metering programs. The state provides community net metering services to “cities, towns, schools, farms, and non-profit affordable housing,” and this can also be achieved through aggregation of credits if the customer is part of the same neighborhood and is provided services by the same utility.¹²⁸ Another approach to incentivize an effective transition to renewable energy generation has occurred in Colorado by means of “community solar gardens” which statutorily require a minimum of at least ten subscribers.¹²⁹ Here, the eligible participants entitled to engage in this program can be individual-constituents, commercial, or industrial

¹²⁵ See Hanna, *supra* note 118 at 148 (noting that customers which own a renewable energy generator—statutorily defined as a “‘host customer’ by the Massachusetts Department of Public Utilities—may allocate credits to any other customer of the same utility.”).

¹²⁶ See Hanna, *supra* note 118, at 154 (discussing the flexibility and transferability of these virtual credits from one customer to another).

¹²⁷ See *Virtual "Nets" and Law*, *supra* note 117, at 295 (citing 220 MASS. CODE REGS. 18.02 (LexisNexis 2011) (highlighting the scope and context of virtual net metering). “A neighborhood can encompass residential, commercial, and undeveloped properties, and a neighborhood net metering facility can be owned by or serve at least ten or more residential customers of a single neighborhood located in that neighborhood.” *Id.*

¹²⁸ See *id.* at 294 (citing S.B. 485, Gen. Assemb. 2011, Reg. Sess. (R.I. 2011)) (citing the eligible participants in this particular renewable generation program). See also *Virtual "Nets" and Law*, *supra* note 117, at 294 (citing R.I. GEN. LAWS § 39-26-6 (2007)) (noting that, “one school in a district can install renewable energy and apply the credits to all the schools in the district or any other buildings owned by the town or city.”). Rhode Island’s program is similar to Massachusetts seeing as both states offer the neighborhood participants the ability to aggregate credits between like-participants, but Rhode Island has expanded the class of market participants eligible for these programs. *Id.* Both states allow for a renewable energy generator to be installed “at one site and apply it to up to ten other sites.” *Id.*

¹²⁹ See Colo. Rev. Stat. § 40-2-127 (2010) (defining the scope of market participants eligible for “community solar gardens” and the regulatory framework to properly comply with this program).

participants.¹³⁰ It is the purpose and goal of these programs to initiate a divesture from fossil fuel use, and to strictly call for renewable energy initiatives—ultimately triggering imminent and drastic change.

IV. Analysis

A. *Utilizing the Scientific & Technical Guidance in Climate Change Litigation*

An alarming correlation exists between the government's failure to transition towards responsible energy generation, and the exacerbation of the climate crisis.¹³¹ While the international platform and the IPCC have remained imperative towards ensuring reliable climate science is circulated throughout the international community, domestic initiatives will be most effective in creating a carbon-free globe.¹³² The IPCC's confidence levels regarding their scientific and technical analysis concerning the causal relationship between human-activity and the climate crisis has served as the foundation for placing pressure on those who are capable of effectuating change.¹³³ The

¹³⁰ See *id.* (highlighting the inclusive nature of this renewable program, and the manner in which it attempts to invite more market participants).

¹³¹ See *Juliana*, 947 F.3d at 1167 (concluding that “[t]he government affirmatively promotes fossil fuel use in a host of ways, including beneficial tax provisions, permits for imports and exports, subsidies for domestic and overseas projects, and leases for fuel extraction on federal land.”); see *id.* at 1159 (emphasizing that “the record conclusively establishes that the federal government has long understood the risks of fossil fuel use and increasing carbon dioxide emissions[.]”).

¹³² See *History of the IPCC*, *supra* note 2 (highlighting the Panel's ‘scientific and technical’ analysis, and how governmental and nongovernmental organizations have used this as a guide towards implementing climate change initiatives over the past 40 years); see also *How Do We Know that Humans Are the Major Cause of Global Warming*, *supra* note 1 (contending that recent studies have found roughly two-thirds of atmospheric impacts and ocean temperature increase are attributed to anthropogenic forces”; see also *Boom et al.*, *supra* note 5, at 2 (discussing the “new era of litigation,” which include strategies “focused not only on private industry but on the sovereign responsibility of governments to preserve constitutional and public trust rights to a stable climate and healthy atmosphere on behalf of both present and future generations”).

¹³³ See *How Do We Know that Humans Are the Major Cause of Global Warming*, *supra* note 1 (highlighting that the IPCC established a change in consensus among scientists in 1995, which found a “discernible human influence on climate,” although, in 2013, “the IPCC scientists determined the anthropogenic influence in emitting greenhouse gases were extremely likely (at least 95% chance) to be

treaties which followed the IPCC reports facilitated global traction and social pressure surrounding the climate crisis, but still failed to facilitate the type of remedial plan sought by the plaintiffs in *Juliana*.¹³⁴

The trilogy of international treaties, and the obstacles associated with their compliance can be separated into two procedural obstacles, which can be explained by two underlying policy principles.¹³⁵ The first procedural obstacle was the unintentional overly-narrow delineation of regulated materials—which resulted from the market reacting to ratifying the Montreal Protocol.¹³⁶ Seeing as the Montreal Protocol regulated Ozone depleting substances such as CFC's (i.e., regulating CFC's caused the market to replace CFC's with HFC's, a substance not covered under the Montreal Protocol), HFC's were left unregulated, because while HFC's are as dangerous as GHG's, they are not technically GHG's and therefore fall under no regulatory structure.¹³⁷ The second procedural obstacle has been the 'two-level game,' of the 'Top-Down' and 'Bottom-Up' approaches

responsible for more than half of Earth's temperature increase since 1951"). *See also* Mastrandrea, *supra* note 14 (explaining the use of this confidence metric through "calibrated language" to communicate certainty in key findings).

¹³⁴ *See supra* Part II(A)(1)-(3) (highlighting the trilogy of international agreements which evidence the various obstacles faced by these agreements in achieving international and domestic ratification). These treaties created various subject-matter regulatory issues, and were largely implicated by cost-benefit considerations, as opposed to comprising a plan; a plan that is now being undertaken by the plaintiffs. *Id.*

¹³⁵ *See supra* Part II(A)(1)-(3) (discussing the procedural obstacles and underlying principles faced in achieving effective compliance with these international agreements). The two procedural obstacles faced can be generalized as the following: (1) subject matter issues which have made compliance with these agreements' contradictory, and (2) the "two-level game" of achieving international compliance, and domestic ratification—the underlying principles affecting both of these procedural obstacles has been the existence of a prisoner's dilemma, and the likelihood of a cost-benefit analysis opposing compliance. *Id.*

¹³⁶ *See McCabe, supra* note 24, at 441 (noting that, although HFCs are not regulated under the other 'ozone depleting substances' pursuant to the Montreal Agreement, they are very powerful GHG's, up to thousands of times more damaging to the climate than carbon dioxide).

¹³⁷ *See id.* at 436 (noting that because the Montreal Protocol facilitated the replacement of ozone depleting substances with HFC's, and HFC's are so similar to GHG's but not exactly GHG's, HFC's soon became subject to no specific regulatory measures under Kyoto). McCabe advocates for a cooperative initiative between the Montreal and Kyoto Protocol, premised on the joint jurisdiction of the global atmosphere. *Id.* at 436.

towards achieving climate compliance.¹³⁸ Whereas the Kyoto and Montreal Protocol are subject to both international and domestic ratification, the Paris agreement strictly called for domestic ratification, requiring self-regulated compliance to achieve domestically tailored climate goals.¹³⁹ Although the Paris Agreement is applauded for having such flexible features, most future agreements moving forward will likely fail due to policy considerations such as the prisoners dilemma and cost-benefit analysis.¹⁴⁰ The failure to achieve compliance with these agreements evidences a need to employ the substance, science, and pressure observed at the international level, and to divert those efforts towards domestic climate change litigation, rather than international initiatives.

¹³⁸ See Prasad, *supra* note 31, at 246 (demonstrating that initiatives prior to the Paris Agreement, potentially presented more procedural obstacles than the contemporaneously implemented international agreements “because it was not subject to the constraints of a two-level game”); see also Prasad, *supra* note 31, at 227 (highlighting the “massive partisan divide in the United States,” which makes it very unlikely for the United States Senate to ratify a climate agreement). The existence of significant funding of climate change denial organizations has made it extremely difficult to gain national traction of climate initiatives. Prasad, *supra*, at 246–47. See also Fischer, *supra* note 34 (concluding that over 100 climate change denial organizations obtained almost \$558 million between 2003 and 2010); *Food, Fossil Fuels, and Filthy Finance*, *supra* note 34 (emphasizing that the fossil fuel industry’s contribution of an estimated \$213 million in lobbying efforts, whereas the United States lobbying efforts alone, is estimated at \$160 million).

¹³⁹ See Prasad, *supra* note 31, at 246 (distinguishing the top-down and bottom-up approaches towards establishing international compliance with climate change initiatives, and further discussing the pros and cons of the varying configurations of international agreements).

¹⁴⁰ See Sunstein, *supra* note 16, at 5 (stressing that “the success of the Montreal Protocol and the mixed picture for the Kyoto Protocol were largely driven by the decisions of the United States, and those decisions were driven in turn by a form of purely domestic cost-benefit analysis”); see also Sunstein, *supra* note 16, at 5 (emphasizing that the “monetized benefits of the Montreal Protocol dwarfed the monetized costs, and hence the circumstances were extremely promising for American support and even enthusiasm for the agreement.”). The Kyoto Protocol presented contrary circumstances which explains why China and India did not participate. Sunstein, *supra*, at 6–7. The economic realities that exist as the international community attempts to implement these agreements brings to light the economic considerations made by industrialized nations, such as the United States, in deciding whether to participate in these agreements. Sunstein, *supra*, at 19–21.

B. *International Climate Litigation Strategies*

The legal theory chosen by climate litigants should be tailored to each nation's fact-specific scenario and be supported by international climate science. *Urgenda* serves as a ripe example for litigants seeking to employ a tort negligence theory to facilitate affirmative governmental action.¹⁴¹ In *Urgenda*, the negligence theory was effective due to preexisting international and domestic obligations of curtailing GHG emissions—the Court of Hauge stated that the government's failure to satisfy such obligations was a breach of their duty towards implementing mitigating measures.¹⁴² While a negligence theory will only be effective in nations which have preexisting obligations to mitigate emissions, this theory may not be effective if employed in the United States due to the absence of such an obligation.¹⁴³ A crucial takeaway from *Urgenda* is that the Court of Hauge refused to rely on the idea that the Netherlands' individual impact on climate change when compared to that of other nations, should have bearing on the manner in which they fulfil their own obligations towards mitigating this “global problem.”¹⁴⁴ Although this negligence theory may not be successful in the United States due to a lack of preexisting obligations, denying to place weight on the emissions contributed by other nations is one that should be entertained by the United States courts.

Another example of a legal theory which has been successful abroad, but will likely be unsuccessful domestically, is the “right to life” encapsulated in a Pakistani case, *Leghari*, which was premised on the enforcement the National Climate Change Policy Act and the

¹⁴¹ See Boom et al., *supra* note 5, at 43 (stating the key findings of studies on climate change, and the evidence of litigation spreading “beyond the US into new jurisdictions throughout Asia, the Pacific and Europe.”).

¹⁴² See *Urgenda*, *supra* note 4, at P 5 (concluding that the Dutch government breached its duty of care regarding the measures taken to reduce GHG emissions to a level that satisfies their domestic and international obligations).

¹⁴³ See Boom et al., *supra* note 5, at 27–28 (discussing the importance of this case which represented “the first time that tort law has been successfully relied upon to hold a state liable for failing to adequately mitigate climate change.”).

¹⁴⁴ See *Urgenda*, *supra* note 4, at P 4.79 (maintaining that the amount of Dutch emissions is small compared to other countries, but this does not affect the obligation to take precautionary measures in view of the State's obligation to exercise care). See also Boom et al., *supra* note 5, at 29 (citing *Urgenda*, *supra* note 4, at P 4.79) (highlighting that the court also relied on the idea that climate change is a “global problem and therefore required global accountability.”).

corresponding Framework which resulted from the insufficient measures taken to effectuate its implementation.¹⁴⁵ The Court relied on the relationship between the citizens’ “right to life,” as stated in Article 9 of the Pakistani Constitution, and the governments duty to protect such fundamental rights—a relationship that served as the primary reason for implementing the Climate Change Commission, and ultimately what held the government accountable for this “delay which offends...fundamental rights.”¹⁴⁶ Governmental malfeasance, coupled with violations of fundamental rights, may provide support to claims being brought in *Juliana* due to the emphasis placed on fundamental rights.¹⁴⁷ Although the theories presented in *Urgenda* and *Leghari* may not be as successful in the United States due to stronger procedural obstacles such as justiciability and standing, one particular aspect can be taken away from each case respectively. The first takeaway is from *Urgenda*—which emphasizes that the individual contributions of other nations should have no bearing on the domestic actions that should be taken to mitigate this global problem—and the second takeaway is from *Leghari*—which highlights that the relationship between the citizens’ “right to life” coupled with the government’s failure to protect fundamental rights, should result in an overseeing administrative body that ensures these obligations are satisfied.¹⁴⁸

¹⁴⁵ See Goldgrub, *supra* note 46, at 293 (citing Leghari, *supra* note 45, at 1) (holding that “the government effort to put the policy plan into effect was, however, marked by ‘inaction, delay and lack of seriousness on the part of the Federal Government and the Government of the Punjab.’”).

¹⁴⁶ See Leghari, *supra* note 45, at 2 (concluding that the Court shall establish a Climate Change Commission, and provide jurisdiction to regulate the inaction of the Pakistani government); see Goldgrub, *supra* note 46, at 293 (citing Leghari, *supra* note 45, at 1) (concluding that Judge Shaw interpreted Article 9 of the Pakistani Constitution’s ‘right to life’ to include “the right to a healthy and clean environment,” and held that this also invoked protections of citizens’ rights to dignity and property to the extent of the government’s ability, from the harmful effects of climate change). See also Goldgrub, *supra* note 46, at 293 (recognizing the strong correlation that exists between constitutional rights and the governments duty to protect such fundamental rights from the ‘harmful effects of climate change.’).

¹⁴⁷ See *Juliana*, 217 F. Supp. 3d at 1233 (citing First Am. Comp ¶ 1) (noting that the youth plaintiffs allege that the defendants have “known for more than fifty years that the carbon dioxide (“CO₂”) produced by burning fossil fuels was destabilizing the climate system in a way that would ‘significantly endanger plaintiffs with the damage persisting for millennia[.]’”).

¹⁴⁸ See Boom et al., *supra* note 5, at 29 (citing *Urgenda*, *supra* note 4, at P 4.79) (emphasizing that the contributions of other nations should not play a factor in the

C. *Due Process Claim as a Litigation Strategy*

As observed in *Juliana*, one of the largest battles faced by climate litigants has been the absence of an affirmative obligation—although, a new litigation strategy has emerged which is premised on violations of inherent due process rights that are (1) ‘deeply rooted in the Nation’s history and tradition’ or are (2) ‘fundamental to our scheme of ordered liberty.’¹⁴⁹ In *Juliana*, the District Court noted that the government, “after knowingly creating this dangerous situation for Plaintiffs,” knowingly continued to “enhance that danger by allowing fossil fuel production, consumption, and combustion at dangerous levels.”¹⁵⁰ The plaintiffs relied on *Obergefell* by stating that, “it would be contradictory to recognize a right to privacy with respect to other matters of family life and not with respect to the decision to enter the relationship that is at the foundation of the family in our society.”¹⁵¹ The right to a sustainable and healthy life is an uncanny depiction of such a right that is “fundamental to a free and ordered society.”¹⁵² By

steps Netherlands must take in order to curtail their own climate change contributions). *See also* Goldgrub, *supra* note 46, at 293 (holding that “the government effort to put the policy plan into effect was, however, marked by ‘inaction, delay and lack of seriousness on the part of the Federal Government and the Government of the Punjab.’”).

¹⁴⁹ *See* *Juliana*, 217 F. Supp. 3d at 1249 (quoting *McDonald v. City of Chicago*, Ill., 561 U.S. 742, 767 (2010)). *See also* Boom et al., *supra* note 5, at 2 (discussing the “new era of litigation,” which includes strategies “focused not only on private industry but on the sovereign responsibility of governments to preserve constitutional and public trust rights to a stable climate and healthy atmosphere on behalf of both present and future generations.”).

¹⁵⁰ *See* *Juliana*, 217 F. Supp. 3d at 1250 (concluding that, “where a complaint alleges governmental action is affirmatively and substantially damaging the climate system in a way that will cause human deaths, shorten human lifespans, result in widespread damage to property, threaten human food sources, and dramatically alter the planet’s ecosystem,” a claim premised on an infringement of due process rights has been alleged). The District Court further emphasized that the youth plaintiffs here, had “adequately alleged infringement of a fundamental right.” *Id.* *See also* *Juliana*, 217 F. Supp. 3d at 1249 (quoting *Obergefell*, 135 S. Ct. 2598 (contending that “[t]he genius of the Constitution is that its text allows ‘future generation [to] protect . . . the right of all persons to enjoy liberty as we learn its meaning.’”).

¹⁵¹ *See* *Obergefell*, 576 U.S. at 669 (concluding that the living constitution allows for fundamental rights to be recognized, especially when such rights are fundamental to preexisting rights which are “a keystone of our social order”).

¹⁵² *See* *Juliana*, 217 F. Supp. 3d at 1250 (concluding that, “[j]ust as marriage is the ‘foundation of the family,’ a stable climate system is quite literally the foundation ‘of society, without which there would be neither civilization nor progress.’”) (citing

subsidizing the fossil fuel industry, with justifications largely premised on a cost-benefit analysis, the government has seemingly failed to assert a narrowly tailored justification for this conduct.¹⁵³ In sum, by prioritizing a cost-benefit analysis to justify the course of action taken in regards to the climate crisis, parties asserting due process violations premised around a danger-creation theory will have a strong case, especially under the facts of *Juliana*.

The danger-creation theory is premised on the government's omission to affirmatively act in circumstances which violate a citizen's due process right; this theory primarily focuses on the deliberate indifference towards the reliant relationship between the government and its constituents. This exception requires the plaintiff to show that the government 'recognized' the unreasonableness of the risks, and "actually intended to expose the plaintiff to such risks without regard of the consequences to the plaintiff"—similar to that of "deliberate indifference."¹⁵⁴ Employing the IPCC's scientific and technical expertise to signify the governments knowledge of these unreasonable

Obergefell, 135 S. Ct. at 2598)). The district court analogizes that a decision to hold that the Government's conduct was not in violation of citizens fundamental due process rights "would be to say that the Constitution affords no protection against government's knowing decision to poison the air its citizens breathe or the water its citizens drink" conclusion. *Id.* at 1250

¹⁵³ See *Juliana*, 217 F. Supp. 3d at 1250 (noting that the District Court further emphasized that the youth plaintiffs here, had "adequately alleged infringement of a fundamental right."). See *id.* at 1234 n.3 (highlighting the consensus understanding of the dangers caused by climate change; the imminent threat it poses to our planet; and the anthropogenic impacts caused by humans). The District Court relies on, then President Barack Obama's 2015 State of The Union Address, where he stated "[n]o challenge...poses a greater threat to future generations than climate change." *Id.* Furthermore, the plaintiffs sought an order enjoining the defendants from violating those rights and directing defendants to comprise a plan to reduce CO₂ emissions. *Id.* at 1233.

¹⁵⁴ See *L.W. v. Grubbs*, 974 F.2d 119, 121 (9th Cir. 1992) (defining that the 'special relationship exception' is triggered when an entity has created a special relationship with another entity). "Cases have imposed liability under a due process theory, premised on an abuse of that special relationship." *Id.* See also *Juliana*, 217 F. Supp. 3d at 1251 (highlighting that a plaintiff must allege that the state actor "create[d] or expose[d]" a constituent to a type of danger, which otherwise would not have been faced (citing *Kennedy v. City of Ridgefield*, 439 F.3d 1055, 1061 (9th Cir. 2006))). The court provides a clear test regarding the necessary elements for properly asserting a danger creation due process claim, and states that a Plaintiff must assert that "(1) the government's acts created the danger to the plaintiff; (2) the government *knew* its acts caused that danger; and (3) the government with deliberate indifference failed to act to prevent the alleged harm." *Id.* at 1252.

risks will allow a plaintiff to challenge the government's failure to affirmatively act by means of limiting third party CO₂ emissions.¹⁵⁵ Additionally, the use of the cost-benefit analysis—which has made international agreements obsolete, and deterred governments from implementing a concrete plan to redress climate change injuries—further emphasizes the neglectful nature of the government's actions.¹⁵⁶

The Ninth Circuit argues that economic and national security considerations call for the continuance of current fossil fuel programs, a justification that rings eerily familiar to those approaches taken by the political branches in avoiding compliance with international agreements.¹⁵⁷ Even more concerning is that the Ninth Circuit now guides the plaintiffs towards the very branches who have historically refused to remedy these issues, simply because the court “would be required to supervise the government's compliance with any suggested plan for many decades.”¹⁵⁸ Instead, the Ninth Circuit should follow in

¹⁵⁵ See *History of the IPCC*, *supra* note 2 (highlighting the Panel's ‘scientific and technical’ analysis, and how governmental and nongovernmental organizations have used this as a guide towards implementing climate change initiatives over the past 40 years); see also *How Do We Know*, *supra* note 1 (contending that recent studies have found roughly two-thirds of atmospheric impacts and ocean temperature increase are ‘confidently attributed to anthropogenic forces’).

¹⁵⁶ See *Juliana*, 217 F. Supp. 3d at 1251 (noting the plaintiffs allege that the ‘danger stems’ “in substantial part, [from] Defendants’ historic and continuing permitting, authorizing, and subsidizing of fossil fuel extraction, production, transportation, and utilization.” (quoting Plaintiff's First Am. Compl. ¶ 85)).

In sum: plaintiffs allege defendants played a unique and central role in the creation of our current climate crisis; that they contributed to the crisis with full knowledge of the significant and unreasonable risks posed by climate change; and that the Due Process Clause therefore imposes a special duty on defendants to use their statutory and regulatory authority to reduce greenhouse gas emissions. Accepting the allegations of the complaint as true, plaintiffs have adequately alleged a danger creation claim.

Id. at 1251–52. See also Sunstein, *supra* note 16, at 25 (stressing that “the success of the Montreal Protocol and the mixed picture for the Kyoto Protocol were largely driven by the decisions of the United States, and those decisions were driven in turn by a form of purely domestic cost-benefit analysis.”).

¹⁵⁷ See *id.* at 27 (noting that the decisions to employ cost benefit analysis in the aforementioned international agreements have consistently been used as a mechanism to avoid inevitable and necessary change).

¹⁵⁸ See *Juliana*, 947 F.3d at 1172 (noting that “injunctive relief could involve extraordinary supervision by this court. . . . [and] may be inappropriate where it requires constant supervision.”). See also *Juliana*, 217 F. Supp. 3d at 1262 (concluding that it is the role of the judiciary to carefully address the ‘barriers to

Urgenda's footsteps and make efforts to redress such injuries caused by the United States instead of leaving the issue to branches who have repeatedly punted on the issue.¹⁵⁹ Although it is not the duty of the judiciary to facilitate a plan which completely solves world climate change, the judiciary must facilitate redress of the particular harms suffered by the plaintiffs, those perpetrated by their domestic government.¹⁶⁰ Ultimately, the issue boils down to whether the judiciary feels comfortable with granting such large remedial measures, which is why it is so crucial that litigants “strive to give the judges the tools they need.”¹⁶¹ Understanding that the judiciary has the authority to grant “broad injunctive relief while leaving the ‘details of implementation’ to the government’s discretion” is an essential aspect toward obtaining redress similar to that sought in *Juliana*—or toward facilitating a less robust plan as suggested by the Ninth Circuit.¹⁶²

litigation created by modern doctrines’ and the deferential standards provided to federal agencies). “A strong and independent judiciary is the cornerstone of our liberties . . . [e]ven when a case implicates hotly contested political issues, the judiciary must not shrink from its role as a coequal branch of government.” *Id.* at 1263.

¹⁵⁹ See *Urgenda*, *supra* note 4, at P 4.79 (recognizing that “any anthropogenic greenhouse gas emission, no matter how minor, contributes to an increase of CO2 levels in the atmosphere and therefore to hazardous climate change. Emission reduction therefore concerns both a joint and individual responsibility of the signatories to the UN Climate Change Convention.”).

¹⁶⁰ See *Juliana*, 947 F.3d at 1165 (concluding that the Ninth Circuit recognizing that “The court also concluded that the plaintiffs had stated a viable ‘danger-creation due process claim’ arising from the government’s failure to regulate third-party emissions.”). See also *Juliana*, 217 F. Supp. 3d at 1263 (emphasizing that “a strong and independent judiciary is the cornerstone of our liberties . . . [e]ven when a case implicates hotly contested political issues, the judiciary must not shrink from its role as a coequal branch of government.”).

¹⁶¹ See *Burger et al.*, *supra* note 6, at 361 (highlighting the mechanism which would allow for an across the board tax on fossil fuels to be administered, if other nations are attempting to provide reciprocal measures); see also *Moloney*, *supra* note 6 (discussing this theory of providing the judiciary with the “tools” to effectuate the necessary change).

¹⁶² See *Juliana*, 947 F.3d at 1172 (noting that courts may order broad injunctive relief while leaving the “details of implementation to the government’s discretion.” (quoting *Brown v. Plata*, 563 U.S. 537–38)).

D. *Remedial Measures Combined with Localized Net Metering*

While the Ninth Circuit has taken issue towards “an enforceable national remedial plan to phase out fossil fuel emissions and draw down excess atmospheric CO₂”, there are certainly a variety of alternatives available which the judiciary should feel obligated to entertain as a “less robust plan.”¹⁶³ Scholars argue that an “across the board” tax on fossil fuels would phase down carbon emissions and allow the funds derived from the tax to be used to effectuate less dependency on the fossil fuel industry, effectively disrupting it.¹⁶⁴ While a national renewable approach would be best for uniformity, the imminent nature of the climate crisis may favor a localized initiative due to the partisan nature of the United States—this will allow for the most amount of participants to be engaged in renewable programs before the polarity subsides.¹⁶⁵ One of the more intriguing discussions

¹⁶³ See *Juliana*, 217 F. Supp. 3d at 1247 (stating that this standing requirement does not require a favorable decision to redress the injury suffered, rather a substantial likelihood it will do so); see *id.* at 1247 (stressing that the defendants concern regarding redressability are moot for two reasons). The first reason being that the redressability inquiry need not require certainty, rather only a “substantial likelihood that the court could provide meaningful relief.” *Id.* “Second, the possibility that some other individual or entity might later cause the same injury does not defeat standing.” *Id.* See *THE CASE FOR YOUNG PEOPLE AND NATURE*, *supra* note 6, at 22 (emphasizing that for a successful ‘across-the-board carbon tax,’ the tax must be coupled with additional measures); see *Donahue*, *supra* note 110 (highlighting that regional classification of states which can maximize a particular source of renewable energy, will provide more effectiveness seeing as southern states may have more success with solar wind generation, as opposed to solar, which likely is not the case for those states in the Midwest); see also *Worland*, *supra* note 107 (discussing California’s current ‘Green New Deal’ and providing a discussion on mobilizing such efforts at the state level, in order to ultimately facilitate changes at a larger scale).

¹⁶⁴ See *Burger et al.*, *supra* note 6, at 361 (highlighting the mechanism which would allow for an across the board tax on fossil fuels to be administered, if other nations are attempting to provide reciprocal measures). See also *THE CASE FOR YOUNG PEOPLE AND NATURE*, *supra* note 6, at 21–22 (noting that the “post-fossil fuel world of clean energies” is sure of one thing, if fossil fuels continue as the least expensive energy source, they will continue to be burned).

¹⁶⁵ See *Green Party US*, *supra* note 103 (outlining the Green New Deal, what it will accomplish, and its goal of achieving 100% Clean Energy by 2030). Such a plan would involve a ‘nationwide smart electricity grid’ capable of effective storage in the form of various renewable sources. *Id.* Cf. *Margolies*, *supra* note 106, at 1427 (discussing the importance of cooperative federalism in introducing renewable

has been the regulatory incentive program of net metering—adopted in roughly two-thirds of states.¹⁶⁶

It is crucial that state legislatures and utilities continue to implement and offer net metering programs to a larger variety of market participants in order to gradually build the infrastructure for a national renewable grid. An analysis of the scope of Colorado's net metering program seems to accord with that of Massachusetts and Rhode Island—attempting to engage as many market participants as possible—therefore, these types of programs should serve as the blueprints for other states.¹⁶⁷ Furthermore, each community net metering policy presents many similarities in their regulatory structure as they are all premised on restrictions regarding energy capacity, the eligible participant, and other components.¹⁶⁸ While individualized net metering will be the first step, initiatives which optimize distributed generation through community net metering will allow for the most amount of market participants to be engaged in a flexible renewable energy grid.¹⁶⁹ This innovative twist provides that the

energy, and multi-faceted nature for of its implementation to serve the prominent resource at both the state and national level).

¹⁶⁶ See N.C. Clean Energy Technology Center at N.C. State University, *supra* note 112 (depicting the states which have adopted net metering programs, along with providing a detailed explanation of the regulatory structure of each states' program).

¹⁶⁷ See Colo. Rev. Stat. § 40-2-127 (2010) (defining the scope of market participants eligible for “community solar gardens,” and the regulatory framework to properly comply with this program). This provision further highlights the inclusive nature of this renewable program, and the manner in which it attempts to invite more market participants. *Id.* See also Massachusetts Smart Program, 225 CMR 20.07(5) (outlining the process and necessary qualifications to apply for the SMART program); see also *Virtual "Nets" and Law*, *supra* note 117, at 285 (highlighting the diversified class of market participants and the eligible actions participants can take in regards to the credits revived (citing MASS. GEN. LAWS ch. 164, § 1G (West 2011))); see also Solar Massachusetts Renewable Target (SMART) Program, *supra* note 109 (discussing this localized initiative, and providing a general overview on the manner in which this program facilitates a transition to safer and more responsible ways in acquiring energy).

¹⁶⁸ See *Virtual "Nets" and Law*, *supra* note 117, at 298 (“Eligibility restrictions prohibit utilities from offering net metering to host customers that are electric companies, generation companies, or energy brokers . . .” (citing 220 MASS. CODE REGS. 18.03–07 (LexisNexis 2011))).

¹⁶⁹ See *id.* at 295 (emphasizing that “a neighborhood can encompass residential, commercial, and undeveloped properties, and a neighborhood net metering facility can be owned by or serve at least ten or more residential customers of a single neighborhood located in that neighborhood.” (citing 220 MASS. CODE REGS. 18.02 (LexisNexis 2011))).

wholesale price of energy produced from the communities' generator will be completely absorbed through the grid—affording the participants “credits equal to the full retail value of fully transmitted power.”¹⁷⁰ Due to the pervasive benefits of maximizing transmission and distribution efforts for both the utility and consumer—transitioning to the aforementioned renewable distributed-generation programs will require bi-partisan support and aggressive implementation at the state level in order to jumpstart this renewable infrastructure.¹⁷¹

V. Conclusion

The climate justice initiative has been punted by each branch of the federal government: the judiciary can no longer shrink under the pressure of prepared litigants who present legal theories that demand feasible remedial courses of action. In light of the remedy sought in *Juliana*, and the difficulty of attaining partisan support for a nationwide remedial movement, climate litigants should prepare to present this feasible transition to contemporary renewable technology in order to jumpstart, what hopes to be, a national, and ultimately, international initiative. If states can continue to diversify their market participants, combined with undertaking strong efforts towards facilitating participation in net metering programs, more entities will seek entry into the renewable energy market knowing there are a variety of ways in which individuals, localities, neighborhoods, and school districts can responsibly generate and finance energy costs, while also redressing the injuries suffered by the *Juliana* plaintiffs.

¹⁷⁰ See *id.* at 293 (noting that “the utility grid bears the cost of the power transfer, while the “neighborhood” is credited as if residents bore the cost of distribution of power.”). This not only allows consumers to generate energy for a fraction of the cost, but this allows more market participants to engage in more responsible energy, therefore establishing the initial framework for a more pervasive renewable grid. *Id.*

¹⁷¹ See Hanna, *supra* note 118, at 153 (emphasizing that “a small fraction of one percent” of energy consumers in the United State are participating in net metering). State action facilitating more engagement in net-metering programs, which have begun to become available, are necessary to the success of obtaining redress in *Juliana*, as well as the climate change movement as a whole. *Id.*