

2001 Marrakesh Accords, the project pipeline currently consists of eight major steps. They are (i) design and formulation of the proposed project by project participants; (ii) approval by the Designated National Authority, which decides whether the proposed CDM is consistent with the country's sustainable development goals; (iii) validation by the first Designated Operational Entity (DOE A), the entity that provides CDM project activity validation by independently evaluating the project design document, describing the project's baseline and setting forth the case for the project's additionality, against the CDM requirements; (iv) registration by the Executive Board, which is the formal acceptance of a validated project consistent with the Marrakesh Accords; (v) preparation of financing by investors; (vi) monitoring by project participants; (vii) verification and certification by the second DOE (DOE B) to ensure that the monitoring methodologies have been applied correctly and that all documentation is complete and transparent; and, finally, (viii) issuance of Certified Emissions Reduction credits.¹⁶¹

Small-scale CDM projects include the construction of solar home systems, solar water heaters in urban areas, and industrial process improvements and fuel switching.¹⁶² More importantly, the small-scale projects are fast-tracked, bypassing the more cumbersome procedural steps to which larger projects are subject.

2. *The Criticisms of the Early Kyoto CDM.* It is important to acknowledge that the CDM is currently operating under significant flaws, which might give one pause when considering a domestic version.¹⁶³ There are

also, Danish, *supra* note 152, at 31-56. The Accords provided greater detail to the structures and mechanisms introduced in the Protocol. *Id.* at 37.

161. See Nigoff, *supra* note 160, at 254-60; *see also* Danish, *supra* note 152, at 49. This process might be simpler if the proposed project is of a smaller scale. See Nigoff, *supra* note 160, at 260. It is also important to note that the CERs are issued on a post-hoc basis, after a demonstration that the project has achieved reductions. Danish, *supra* note 152, at 48.

162. Nigoff, *supra* note 160, at 260. These local community-based projects are also occurring in the United States, though many currently lack a steady revenue stream. See discussion *infra* Part III.C.2.

163. For a brief description of critics' concerns, see Sterk & Wittneben, *supra* note 155, at 272-73; *see also* Nigoff, *supra* note 160, at 274-76 (arguing

three major criticisms of the CDM as conceived and currently implemented.¹⁶⁴ None, however, is a fatal flaw.¹⁶⁵

First, the bureaucratic process is under-funded,¹⁶⁶ significantly slowing an already strained project pipeline. Again, there are eight major steps along the pipeline.¹⁶⁷ Further, their sub-steps substantially increase the transaction costs of getting from the design and formulation of a project to issuance of CERs. Based on this flaw alone, one critic has stated, “as currently structured, CDM is an inefficient and ineffective market mechanism upon which [industrialized countries] are unlikely to rely heavily to meet their Kyoto targets.”¹⁶⁸ Recent CDM activity suggests, however, a very healthy increase in project development despite these early inefficiencies.¹⁶⁹

Second, there is a wild differential between LDCs that are eligible and those that are favored for project development. In other words, countries like China, India,

that the CDM is not meeting its stated goal because of the lengthy registration process); Whetzel, *supra* note 148.

164. These criticisms of the Kyoto mechanism should not be understated. One of the major critiques insists that the very creation of this mechanism was purely a tool to provide more credits to industrialized nations without any real regard for the plight of the least developed world while, at the same time, not requiring any level of sacrifice on the part of the citizens of industrialized nations. I am sympathetic to this criticism, particularly as it is consistent with more general critiques of market mechanisms. See discussion *infra* Part IV.A. Acknowledgement of these criticisms does not, however, counsel against this kind of mechanism being introduced as an important and viable supplement to the inevitable domestic cap-and-trade system. In fact, they counsel for vigorously ensuring a well-crafted mechanism. Additional advantages that might be incorporated in the dCDM are discussed *infra* Part IV.B.

165. There are, of course, many that celebrate both the potential and the adolescent stages of the CDM. See, e.g., Vir Singh, *Indian Official Sees Untapped Opportunities to Use CDM Funding for Energy Projects*, Int'l Env't Daily (BNA), at D-10 (Apr. 20, 2007); Stern, *supra* note 34, at 90.

166. For example, the CDM Executive Board and its various panels are currently under-resourced relative to the regulatory tasks they must perform. FRANK LECOCQ & KARAN CAPOOR, STATE AND TRENDS OF THE CARBON MARKET: 2005, at 37 (2005).

167. See Nigoff, *supra* note 160, at 254.

168. *Id.* at 271.

169. See UNFCCC, CDM Statistics, <http://cdm.unfccc.int/Statistics/index.html> (last visited Nov. 7, 2007); see also Whetzel, *supra* note 148 (describing a vibrant market that has developed for CDMs).

and Brazil are receiving the lion's share of project investment, while countries like Senegal and others in sub-Saharan Africa are languishing.¹⁷⁰ As an example, "two-thirds of the [CDM] deals signed [by the World Bank] between January 2005 and March 2006, by value, were with China."¹⁷¹

The third major criticism concerns the value and the rigor of the projects proposed. The projects must be additional to what might have occurred absent the CDM.¹⁷² Further, they must generate credits equivalent to the actual emissions offset.¹⁷³ Projects like reforestation efforts are questioned as legitimate emissions-reducing activities under the CDM.¹⁷⁴

170. At the market in Koelnmesse, for example, some sellers "are more popular and better organi[z]ed than others." Duncan, *Selling Hot Air*, *supra* note 156, at 18. China has a sophisticated book "crammed with projects," while Senegal has a "photocopied piece of paper with six projects, and no customers." *Id.* Two of the Chinese deals, organized by the World Bank, are worth \$930 million. *Id.* This imbalance is not altogether surprising; it had been predicted prior to elaboration of the Protocol and its mechanisms. See R.S. Maya & John Turkson, *CDM Baseline and Additionality in the African Context—The Issues*, in *AFRICAN PERSPECTIVES ON THE CLEAN DEVELOPMENT MECHANISMS*, *supra* note 120, at 19 (discussing the predicted doom for CDM in Africa due to the difficulty of defining an economic baseline and competing for CDM projects). There is also a lack of capacity in countries that have "yet to establish their Designated National Authorities (DNAs), . . . the national bodies responsible for approving the projects." Sterk & Wittneben, *supra* note 155, at 275.

171. Duncan, *Selling Hot Air*, *supra* note 156, at 19.

172. See, e.g., Nigoff, *supra* note 160, at 254-55. Under the Marrakesh Accords, additionality is determined by a baseline methodology described as follows: "a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity." *Id.* at 254-55.

173. One of the articulated project risks is that the projects meet all requirements of the CDM and actually generate the credits estimated in the project design document. *Id.* at 259. This has also been described as a "moral hazard" when the project sponsors and the host country are in cahoots. *Id.* at 258. For example, both parties may "exaggerate baseline carbon emissions, thereby skewing the actual reductions achieved by the project Using independent DOEs and the EB's careful review of the monitoring plan [however] ensures that DOEs have no conflict of interest with the project participants." *Id.* The consequence of this level of scrutiny, of course, is a more congested project pipeline.

174. Scott, *Parties Debate Russian Plan*, *supra* note 151 (reporting that debates continue "on various reforestation issues, including efforts to allow Brazil and other heavily forested nations to count reforested areas as emissions-

A final concern that one must acknowledge is whether the projects that are most likely to facilitate the host country's sustainable development goals are viable. This is not one of the more dire concerns for the Kyoto CDM per se but is important and relevant to the domestic Clean Development Mechanism (dCDM). Renewable energy, energy efficiency and transport project activities—smaller in scale and more diffuse by nature—are not competitive in the Kyoto CDM market and are, consequently, being marginalized. These will likely be the bread-and-butter projects for dCDM, and their relative attractiveness must be addressed at the outset.

The global project is floundering in short for reasons that the United States need not replicate on a domestic level. The failures are due to weaknesses in implementation of the program and not the foundational sustainable development philosophy of the mechanism.¹⁷⁵ Indeed, removing the international, trans-boundary element alone will significantly diminish the myriad concerns regarding transparency and authenticity. Moreover, numerous Kyoto CDM commentators have offered solutions that dCDM crafters would incorporate. I address these improvements in the next section.

C. *The Domestic CDM*

A domestic CDM (dCDM) is essential for American communities that will suffer disproportionately from

reducing projects under the protocol's [CDM]).

175. For indications of early optimism about the foundational principles of CDM, see Maya & Turkson, *supra* note 170, at 19 (discussing the twin sustainable development and UNFCCC contributions of CDM and stating, "such a mechanism could provide an additional source of funding for projects for sustainable development, and such a prospect is welcome in principle"); Spalding-Fecher et al., *supra* note 120, at 66 ("One of the leading climate change NGOs in Africa, ENDA Tiers Monde in Senegal, points out that, if properly designed, CDM can make a decisive contribution to sustainable development in Africa, primarily through the implementation of desperately needed large-scale infrastructure development projects and programs."); *see also* Sterk & Wittneben, *supra* note 155, at 275 (arguing that CDM difficulties may have been typical start-up problems rather than fundamental flaws: "In particular, the bottleneck at the CDM Executive Board seems to have been the result of its lack of funding rather than overcomplicated procedures"). Sterk and Wittneben report that the CDM is now picking up "substantial steam." *Id.*

climate change, particularly because they are unlikely to benefit from international arrangements and domestic climate policy as currently drafted. This is true despite their adaptive capacities being comparable to those of some Least Developed Countries (LDCs).¹⁷⁶ As stated in Part II above, the aims of climate justice policy are far-reaching and comprehensive. The dCDM is an early step in reaching those goals.

1. *dCDM Financing and Structure.* The structure of the dCDM would be similar to that of the CDM; however, current imperfections in the international arena would be addressed at the mechanism's conception. The first and most important solutions to problems that have befallen the Kyoto mechanism include the provision of sufficient start-up capital and a streamlining of the registration process for any domestic mechanism.¹⁷⁷ With respect to capital, these

176. Robin Leichenko & Karen O'Brien, *Is it Appropriate to Identify Winners and Losers?*, in *FAIRNESS IN ADAPTATION TO CLIMATE CHANGE*, *supra* note 1, at 97, 111 (arguing that resource-dependent communities in the United States have experienced chronic economic distress and may have adaptive capacities comparable to some of the LDCs, but losses to those communities are unlikely to be addressed by international arrangements).

177. See Nigoff, *supra* note 160, at 271. Nigoff also considers the "option of transferring some of the EB's responsibilities to the World Bank or private entities to accelerate . . . the project pipeline." *Id.* Again, to the extent the CDM is experiencing its current difficulties as a result of start-up costs, it will be even more important for the dCDM crafters to be mindful of these and plan around them. See Dean Scott, *U.N. Meeting Ends With Agreements on Fund for Adaptation; No Action on Carbon Capture*, *Daily Env't Rep. (BNA)*, at A-1 (Nov. 27, 2006). Beyond start-up, a levy on the proceeds from dCDM projects, proportional to the size of the project, can cover administrative expenses as well as finance an adaptation fund. Danish, *supra* note 152, at 47. Under the Protocol's Article 12, this "share of the proceeds" (SOP) levy covers efforts similar to those described in this section. *Id.*

Further, the CDM Executive Board (EB) has already implemented another solution to the encumbered project cycle. The EB has built up "a library of standard emissions baseline methodologies for certain types of commonly implemented projects" and has encouraged project participants use these pre-approved methodologies. *Id.* Another solution is project-bundling, in which small-scale projects are aggregated and treated as one CDM project from registration to certification. Nigoff, *supra* note 160, at 264 (describing "[b]undling", or "the aggregation of small-scale projects that do not exceed the small-scale requirements and may be treated as one CDM project from registration to certification" adopted at the Eighth Conference of Parties (COP-8)). A related approach is the "sectoral CDM." Sterk & Wittneben, *supra* note 155, at 273. Under this proposed solution, the single-site approach would be

monies could come from a variety of sources including carbon taxes,¹⁷⁸ auctioning of allowances, and broadening relevant sections of the currently proposed climate policies before Congress.¹⁷⁹

Indeed, the Climate Stewardship Act provides for financing of adaptation and mitigation assistance for low-income persons and communities.¹⁸⁰ Under the bill, “at least 10 percent of the proceeds derived from [allowance] trading activities [shall fund] climate change adaptation and mitigation programs to assist low-income populations identified . . . as having particular needs in addressing the impact of climate change.”¹⁸¹ In addition, transition assistance to dislocated workers and communities is considered.¹⁸² Here, the bill calls for the allocation of a percentage of the allowance trading proceeds to provide “training, adjustment . . . and employment services to

transcended and project activities would be clumped under a “programme of activities” within a particular sector, energy or transportation for example. *Id.* By definition, the sectoral approach would be best for renewable energy, energy efficiency, and transport projects that are difficult to fit into a single-site approach. *Id.* at 279. Similar to the small-scale project bundling, the sectoral approach also contemplates bundled large-scale projects registered as single CDM projects. These solutions would work quite well in a dCDM context. *See* discussion *infra* Part III.C.2. Ultimately, potential revenues that projects by and for EJ communities will generate can counterbalance even the length and the cost of the process, which may remain, however, streamlined the mechanism.

178. A carbon tax could be an important feature of a cap-and-trade scheme. It would provide an additional revenue source for progressive revenue recycling; it could also serve as an important “safety valve.” *See* Whetzel, *supra* note 148 (citing Stanford law professor David Victor’s recommendation that cap-and-trade programs include a carbon tax as a safety valve, to protect against excessive prices for emissions credits and still provide funding to invest in new technologies). This would be especially helpful for compensating “vulnerable or low-income groups.” AFRICAN AMERICANS AND CLIMATE CHANGE, *supra* note 22, at 85.

179. Additionally, dCDM participants could help finance administrative expenses for operating the dCDM by making contributions to an established Trust Fund. This would mirror the voluntary contributions Kyoto parties are invited to make to the UNFCCC Trust Fund for Supplementary Activities. *See* Nigoff, *supra* note 160, at 253. It would also go to funding adaptation measures for EJ communities.

180. Climate Stewardship and Innovation Act, S. 280, 110th Cong. § 202(b)(4) (2007).

181. *Id.*

182. *Id.* § 202(b)(2).

dislocated workers” and “to make income-maintenance and needs-related payments to dislocated workers.”¹⁸³ EJ communities may not be those specifically contemplated in this particular section;¹⁸⁴ however, this particular earmark could also be directed at these communities and reflects an interest in similar just-transition goals of climate justice. Finally, proceeds for trading activity may also take the form of “grants to State and local government to assist communities in attracting new employers or *providing essential local government services*.”¹⁸⁵ The availability of these kinds of monies is an integral part of dCDM start-up and continued success.

Under the dCDM, the government, specifically the Environmental Protection Agency (EPA), would manage allowances and require that, at least in the initial distribution, companies bid for their permits.¹⁸⁶ This is an important difference from merely distributing permits at no cost based on prior firm emissions; that is, grandfathering. Under grandfathering, the firms take the windfall profit of freely distributed permits that they can buy and sell at will.

183. *Id.* § 202(b)(2)(A)(i), (ii).

184. Workers from traditional, carbon-intensive energy sectors, I suspect, are the primary concern for this section.

185. S. 280 § 202(b)(1) (emphasis added). This inclusion is particularly relevant to extant projects that I envision the dCDM supporting. *See* discussion on project possibilities *infra* pp. 223-32.

186. The European Union’s Emissions Trading Scheme (EU ETS) has suffered deep criticism due to the incredible windfall profits power firms are set to make. *See* Roger Harrabin, “£1bn Windfall” from Carbon Trade, BBC NEWS, Mar. 24, 2007, <http://news.bbc.co.uk/2/hi/science/nature/4961320.stm>. The profits are likely the result of the initial carbon permit distribution. *See* *Climate Control*, ECONOMIST, Mar. 17, 2007, at 59, 59 (citing flaws in handing out too many permits and, worse still, handing them out for free). Firms were “given, free-of-charge, the carbon emissions permits on which the scheme is based. This . . . was like the government giving energy firms free money.” Harrabin, *supra*; *see also* Duncan, *Selling Hot Air*, *supra* note 156, at 17, 19 (explaining that because the ETS allowances were given away rather than auctioned, the scheme “handed [the power generators and other polluters] wads of cash: they simply passed the extra costs on to consumers and pocketed the money”). Consequently, Britain’s power sector made a profit of roughly \$1.5 billion in the scheme’s first year, and power prices increased “steeply.” *Id.* at 19. For a more in-depth discussion on how this initial (free) allocation results in windfall profits for some firms and higher energy prices for consumer across the board, *see* Harrabin, *supra*. Some are now seeking post-hoc windfall taxes to be redirected into energy conservation efforts. *See id.*

If the permits are auctioned, the government can receive the needed revenue from these distributions.¹⁸⁷ In fact, a “true market scheme would see the permits auctioned, not given away by governments.”¹⁸⁸ Further, and most important for current purposes, auctioning of permits would produce additional revenue that can be used to finance programs like the dCDM and provide seed funding for adaptation funds.¹⁸⁹ This would be a form of progressive revenue recycling; that is, directing income from auction (and subsequent trading activity) to invest in clean and renewable energy sources as well as to make direct financial assistance transfers to the most vulnerable, for example.¹⁹⁰ Absent the additional monies that might be

187. See AFRICAN AMERICANS AND CLIMATE CHANGE, *supra* note 22, at 140.

188. Harrabin, *supra* note 186. Economists like cap-and-trade schemes because they give maximum pollution savings at least cost to firms; however, auctioning is essential to any true market scheme. *Id.*

189. Auctioning off some portion of the allowances is a key component of the Regional Greenhouse Gas Initiative (RGGI), which is, for that reason, instructive. See Bogdonoff & Rubin, *supra* note 138, at 11. Under RGGI, “[e]ach state is required to sell or auction a minimum of 25 percent of its allowances.” *Id.* The proceeds from the sales will be used for energy efficiency programs, rate-payer rebates, development of new clean technologies, or otherwise lower consumer costs from potential rate hikes. *Id.* at 14. In light of the above possibilities, there certainly are “justifications for auctioning even more than 25 percent,” particularly for the benefit of the low-income. See *id.*; see also AFRICAN AMERICANS AND CLIMATE CHANGE, *supra* note 22, at 91 (stating “[a]uctioning permits has the added benefits of generating revenues that can be used to offset any regressive or transitional economic effects of the charges on African Americans”).

Of course, firms will not favor this approach. Cap-and-trade generally puts a price on something, that is, pollution of clean air through a factory’s emission of carbon gases, which has to date been free. See Steven Mufson, *Europe’s Problems Color U.S. Plans to Curb Carbon Gases*, WASH. POST, Apr. 9, 2007, at A1. They will surely lobby vigorously for the receipt of permits free of charge; however, a powerful counterargument will demonstrate that firms have been benefiting significantly from the ability to emit carbon at no financial cost for decades. As a result, the global community is left to suffer the consequences, some more gravely than others.

190. For greater elaboration of this kind of recycling, see AFRICAN AMERICANS AND CLIMATE CHANGE, *supra* note 22, at 87, 89, 137, 140.

African Americans . . . stand to generally benefit from revenue-raising mechanisms such as auctioned permits and taxes over non-revenue mechanisms such as grandfathered permits, with the additional proviso that the revenues should be distributed progressively (through taxes, transfers, or provision of public services) or used to finance

used to recycle revenues, free distribution of credits could have perverse results, such as billion-dollar windfall profits for energy companies.¹⁹¹

The Climate Stewardship and Innovation Act contemplates auctioning of allowances, which is an important and appropriate inclusion.¹⁹² There remain, however, two flaws that would need correction. First, the bill sets aside too few allowances for auction,¹⁹³ limiting the availability of significant revenue recycling. Second, the proceeds of the auction are only going to support stimulation of “innovation in development, demonstration, and deployment of technologies that have the greatest potential for reducing greenhouse gas emissions.”¹⁹⁴ While this is an important goal, auctioning of allowances should be done at the highest plausible percentage, with a significant portion of the proceeds financing green development projects and funds for adaptation under the dCDM.

Importantly, the dCDM would include precisely such a domestic Fund for Adaptation to help all EJ communities irrespective of their ability to create local, and profitable, green projects.¹⁹⁵ With the Protocol in 1997, funds to help developing countries finance adaptation initiatives were

further emission reductions or efficiency improvements.

Id. at 137. The Congressional Black Caucus Foundation Report also states that “the sudden application of strict greenhouse gas emission limits with zero revenue recycling harms the economy[; however,] environmental tax reform, in which moderate carbon taxes or auctioned permits are applied with the revenue used to lower taxes on work or investment, can benefit the economy if properly structured.” *Id.* at 89.

191. See Harrabin, *supra* note 186. This is not a hysterical concern, but is exactly what tainted reviews of the EU ETS, particularly in the EJ camps. See *id.*; see also Luke Cole, Dir., Ctr. on Race, Poverty & Env’t, Comments at The Climate of Environmental Justice: Taking Stock (Mar. 17, 2007).

192. Climate Stewardship and Innovation Act, S. 280, 110th Cong. § 162(g) (2007).

193. See *id.* § 162(g)(2), (3).

194. *Id.* § 323(a).

195. For many of these communities with fewer resources, it is also true that there are few emissions to cut, as their carbon footprint is slight (tracking their limited access to resources). As a result, for these kinds of communities only projects that generate carbon sinks, for example, would be viable. Absent these projects, or perhaps in spite of them in many cases, additional support to strengthen adaptive capacity will be essential.

established under an "Adaptation Fund."¹⁹⁶ This Fund is meant to support concrete projects and programs exclusively concerned with the adaptive capacity of developing countries with weaker economies.¹⁹⁷ It is supported by, among other things, a small levy, the "adaptation fee," placed on Kyoto CDM projects.¹⁹⁸ The Fund is a crucial supplement to the CDM, as its sole purpose is to ensure the adaptation of all global communities to the extent the Fund can cover those expenses. A domestic adaptation fund would be equally critical for the fair distribution of adaptive capacity in the United States.

For the dCDM, there are already viable funding sources for a domestic adaptation fund, such as those identified in the Climate Stewardship and Innovation Act.¹⁹⁹ In addition, the Clean Energy Act,²⁰⁰ which passed the House (and, in an amended version, the Senate) in early 2007,²⁰¹ contemplates earmarking additional revenue for measures to mitigate and adapt to climate variations.²⁰² Conspicuously missing from these allotments, however, are considerations of the disproportionate burden experienced by EJ

196. See Wachira Kigotho, *At U.N. Climate Change Conference, Report Warns of Rising Threats to Africa*, 29 Int'l Env't Rep. (BNA), at 868 (Nov. 15, 2006).

197. Nigoff, *supra* note 160, at 253. Developing countries also receive assistance from the EB-administered CDM registry, into which two percent of CERs from projects are deposited. *Id.* The EB sells CERs and forwards revenues to host CDM countries and countries facing adverse effects of climate change.

198. *Id.* Of course, the current problem facing the Kyoto's Adaptation Fund is the small amount of revenue derived from the small amount of projects certified. As of November, 2007, the levy had provided only \$3 million. Dean Scott, *Climate Change: U.N. Climate Talks Make Some Progress On Adaptation, Joint Implementation*, Int'l Env't. Daily (BNA), at D-12 (Nov. 15, 2006). For an updated list of total CERs in the Adaptation Fund holding account, see UNFCCC, *The Share of Proceeds from the Clean Development Mechanism Project Activities for the Adaptation Fund*, <http://cdm.unfccc.int/Issuance/SOPByProjectsTable.html> (last visited Nov. 2, 2007). The value of CERs, of course, is variable. In October, 2006, the U.S. EPA estimated the value of CERs at anywhere from \$3 to \$12. World Resource Institute, *Carbon Value Analysis Tool 6* (Oct. 12, 2006), <http://www.epa.gov/climateleaders/documents/events/oct2006/aulisi.pdf>.

199. S. 280, 110th Cong. § 162(g) (2007).

200. H.R. 6, 110th Cong. (2007).

201. See CONG. INFO. SERV., BILL TRACKING REPORT, 110TH CONGRESS, 1ST SESSION, H.R. 6 (2007).

202. H.R. 6, § 301.

communities and the absence of adequate adaptation efforts without directed earmarks. The CLEAN Act, for example, repeals two tax breaks for the oil and gas industry by making producers pay royalties on hundreds of now royalty-free deepwater leases in the Gulf of Mexico.²⁰³ This repeal is estimated to raise \$14 billion over the next ten years. With that additional revenue, a new permanent fund would be established to finance the “Strategic Energy Efficiency and Renewables Reserve,” which would support energy efficiency and renewable energy technologies.²⁰⁴ A conservation fee would also be assessed if companies refuse to renegotiate these “favorable” leases, and continue to produce crude oil and natural gas.²⁰⁵ Congress should redirect these revenues to a Fund for Adaptation to provide a needed supplement to the levy on dCDM projects.

As for the mechanics of the dCDM,²⁰⁶ current inefficiencies in the Kyoto CDM’s certification process would be examined, and then planned against by streamlining necessary steps to certification. The determination of beneficiary communities, an important first step, would be conducted in a manner similar to identifying enterprise zones or eligibility for community development block grants, under the Department of Housing and Urban Development, for example.²⁰⁷ In short, the EPA could rely on qualified

203. The CLEAN Act stands for “Creating Long-Term Energy Alternatives for the Nation” Act. *See generally* Lynn Garner, *Bill Targeting Tax Breaks, Royalties Seen as “First Step” Toward New Policy*, Daily Env’t Rep. (BNA), at A-7 (Jan. 17, 2007) (The Act would also ban producers from obtaining new oil and gas leases, unless they renegotiate certain royalty-free, deepwater leases issued in 1998 and 1999 in the Gulf of Mexico, or agree to pay a “conservation of resources fee”).

204. *Id.*; *see also* Lynn Garner, *House Democrats Introduce Bill to Reform Royalty Program, Create Renewables Fund*, Daily Env’t Rep. (BNA), at A-7 (Jan. 16, 2007).

205. Garner, *supra* note 203, at A-7. The fee would be \$9.00 per barrel of crude oil and \$1.25 per million Btu for natural gas, whenever market prices exceed \$34.73 a barrel for oil and \$4.34 per million Btu for natural gas. *Id.*

206. I offer one possible outline for the dCDM; however, it is not my intention in this Article to explore or detail the myriad (and sound) legislative incarnations the dCDM could take.

207. *See generally* 26 U.S.C. §§ 1391-1393 (2000); 42 U.S.C. § 1397(f) (2000). Another way of identifying target communities might be found in the New Markets Tax Credit program, which has developed fairly sophisticated mapping technology to decipher census tracks. *See* Community Development Financial

census tracts to determine appropriate participation in “green development zones.” Both public and private entities could participate in investment opportunities in green development zones.

The dCDM operating board, under the EPA, will actively facilitate project creation. It will serve as a project clearinghouse, collecting, classifying, and distributing information about the nature of potential projects, community demographics, and green-development grassroots organizers. It will also bring together private and public investors with community green-development co-ops.²⁰⁸ Finally, the board will act as a broker, “actively seeking and accumulating funds and actively eliciting projects and programmes.”²⁰⁹ With this brokerage model in place, the operating board can actively seek out projects in communities that could benefit most.²¹⁰

Taking a fictional green development co-op as an example, a regional solar panel installation program in the Southeastern United States could benefit communities of color, particularly African-Americans, who are well-represented in that region. Clean energy and job creation in cities like Atlanta will have the desired effect of establishing clean, affordable, renewable technologies for these communities and the attendant global warming mitigation effects. It will also help to meet the goal of creating independent and sustainable communities for

Institutions Fund, New Markets Tax Credits Program, http://www.cdfifund.gov/what_we_do/programs_id.asp?programID=5 (last visited Nov. 12, 2007).

208. See Spalding-Fecher et al., *supra* note 120, at 68 (discussing ideal institutional structure of CDM).

209. *Id.* at 68. This expanded role will allow for a “more visionary and proactive”—and, I would add, *relevant*—dCDM executive board. *Id.* at 68-69 (“As a co-ordinating and funding body, the Board could set criteria and apply standards to ensure geographical equity considerations are taken into account, ensure that the CDM dual objectives of emission avoidance and sustainable development are given equal weight, and that funding is available for projects initiated by host countries.”) (citation omitted).

210. This could also facilitate project-bundling or sectoral approaches, discussed above. “[P]ackaging many small initiatives into a larger umbrella programme, which can only be done by a more active CDM brokerage model, can reduce the transaction costs for investors and allow the CDM to address the large, regional energy infrastructure projects or capacity building efforts which contribute to more environmentally sound energy policies.” Spalding-Fecher et al., *supra* note 120, at 71.

adapting to inevitable climate changes.²¹¹ The funding, as discussed above, will come from investors in project development and from the fund established—and continually replenished—by levies on prior projects. This financing will cover administrative expenses and transaction costs, costs accrued from project conception to installation of solar paneled roofs by trained corps of community members across the southeast.

Support, financial and otherwise, will also be necessary for the implementation phase. Solar roof projects throughout the southeast will operate and yield emissions reductions benefits for decades. Consequently, implementation, monitoring, and certification will be ongoing processes, for which sustained support—such as training, maintenance, and capacity building—will be necessary.²¹² Long-term job opportunities from a solar roof community co-op are inherent, as are local energy independence and increased adaptation capability to rising energy costs and scarcity. This project would undergo rigorous and sustained monitoring and verification of the training process and the intensity of emissions reduction as a result of the solar energy installation. Indeed, a key component of dCDM success is faith in the accuracy and authenticity of the process of credit generation. To that end, a hybrid approach of decentralized accreditation and centralized government-based monitoring would be the most effective certification regime.²¹³

Finally, the EPA, or other governing institution, will certify the credits derived from the solar roofs project. To be accepted as a dCDM credit, offsets would have to be “real, surplus, verifiable, permanent, and enforceable.”²¹⁴ Even

211. Significantly, renewable energy sources are more labor intensive than the fossil fuel energy sector. See *AFRICAN AMERICANS AND CLIMATE CHANGE*, *supra* note 22, at 4. Climate policies have the potential of creating hundreds of thousands jobs, perhaps as many as 1,400,000. *Id.* at 4, 83. The benefit for some EJ communities is clear: “[b]ased on historic hiring patterns, this increase in employment will disproportionately profit African Americans.” *Id.* at 4. An additional benefit is in the reduction of associated air pollution mortalities, such that the reduction of CO₂ emissions could save 10,000 African American lives. *Id.* at 10.

212. Spalding-Fecher et al., *supra* note 120, at 71.

213. *See id.*

214. Bogdonoff & Rubin, *supra* note 138, at 12. These are the five strict

with a project that is ongoing, like this one, certification should occur over a fairly short timescale.²¹⁵ A solar roof project will have long-term benefits, militating in favor of, perhaps, periodic certification and transfer of credits. It would be unwise, however, to wait until the end of the project's life, as investors or potential credit purchasers would want to apply these dCDM-derived credits over the short term.²¹⁶

The benefits of the dCDM are many, including attracting an increased flow of investments to green EJ development zones and stimulating technology transfers to communities that might not otherwise benefit from these technologies in the early development and dissemination phases.²¹⁷ This effort, most importantly, will bring communities closer to local, independent, and sustainable spaces for both the mitigation of and adaptation to climate risks.

2. *Project Possibilities and the Green Economy.* The most promising aspect of a dCDM is the myriad climate change mitigation and adaptation projects that it could fund in addition to the projects currently in existence, eager for a steady revenue stream. There are, as one commentator has described it, “[l]ots of firms . . . growing healthily on the back of America’s sudden enthusiasm for alternative energy.”²¹⁸ Wind and solar energy projects are booming and

standards employed generally by flexibility mechanisms employing an offsetting provision, such as Regional Greenhouse Gas Initiative (RGGI).

215. See Spalding-Fecher et al., *supra* note 120, at 72.

216. *Id.* (describing investors’ desire to see a “Carbon return” on investment in the short to medium term). All of this demands that “[i]mplementation, monitoring, and certification should therefore be an iterative process, rather than a once-off transaction.” *Id.*

217. For an early discussion of the promises of the CDM, which has informed my discussion here, see Ogunlade R. Davidson & Youba Sokona, *Africa and the Clean Development Mechanism: Perspectives for Growth*, in *AFRICAN PERSPECTIVES ON THE CLEAN DEVELOPMENT MECHANISMS*, *supra* note 120, at 11, 16 (discussing the likely benefits and problems of CDM).

218. *Green America*, *supra* note 134, at 22. In fact, it is arguable that the continued investment and steady development in green technology is a positive effect of the CDM. For example, the general manager of a Chinese wind turbine project admits, “Without the Clean Development Mechanism, we’d still be [narrowly] profitable . . . [but] you need the C.D.M. for further expansion.” Keith Bradsher, *Clean Power that Reaps a Whirlwind*, *N.Y. TIMES*, May 9, 2007, at C1.

localities are looking to renewables to curb their emissions.²¹⁹ California, for example, is introducing a program highly favorable to the solar industry. Under the “million solar roofs” plan, the state will spend more than \$3 billion over the next decade to subsidize the installation of solar-power panels. In this public venture, as well as private ventures, there is a place for projects benefiting EJ communities. In fact, a number of EJ groups have already taken control of community development functions in their areas to own and manage housing units, agricultural firms, job training facilities, farmer’s markets, urban gardens, and restaurants.²²⁰ The history of community-grown project creation and implementation is long and has set the foundation for the success of present and future projects.

Specifically, these grassroots efforts build on other nascent projects that will address climate change and climate justice. Possible projects for EJ communities range from rural reforestation and afforestation projects in the spirit of Wangari Maathai’s Green Belt Movement²²¹ to the bundling of large-scale energy efficiency efforts coordinated by alternative energy community co-ops in the inner city as well as the reservations of the Great Plains. Poor and of-color communities could also benefit from inclusion in disaster prevention and responses. In the context of post-Katrina cleanup, for example, there has been a call for actively including people of color and the lower and working classes by recruiting them for disaster professions and in the disaster research community, generally.²²²

The Bronx Environmental Stewardship Training (BEST) program and the Oakland Apollo Alliance are perfect examples of potential beneficiaries of a dCDM. BEST has been on the cutting edge of green-collar jobs

219. *Green America*, *supra* note 134, at 60 (stating that “[a]lmost 400 cities have devised plans to curb or reduce . . . greenhouse gas emissions”).

220. Pellow & Brulle, *supra* note 87.

221. Maathai is the founder of the Green Belt Movement, a large-scale, non-CDM project “aimed to encourage planting tree seedlings . . . and help reverse deforestation.” *African Greenheart*, *ECONOMIST*, Sept. 23, 2006, at 94, 94. Maathai won the Nobel Peace Prize in 2004. *Id.*

222. PASTOR ET AL., *supra* note 30, at 39. This kind of disaster preparedness training is not directly credit-generating; however, it would be an integral part of any green job training programs.

training. As a project of Majora Carter's Sustainable South Bronx, BEST is an ecological-restoration job-training program, which recruits exclusively neighborhood residents, ninety-five percent of whom are on public assistance. Recruits range in age from twenty to forty-five and are trained to do everything from landscaping and green-roof installation to brownfield remediation. The training program is a prototype for other urban communities to have a primary stake in the revitalization of their neighborhoods, ecological and otherwise.²²³

Consistent with foundational environmental justice principles, this program is based on the community speaking for itself. According to Carter, however, a challenge for the Sustainable South Bronx is that they have had little support, financial or organizational, from other local or national environmental groups.²²⁴ They have,

223. See Amanda Griscom Little, *Majora League: An Interview with Majora Carter, Founder of Sustainable South Bronx*, GRIST, Sept. 28, 2006, http://www.grist.org/news/maindish/2006/09/28/m_carter/index.html.

The South Bronx is home to numerous brownfield sites, and high unemployment and poverty rates. Too often, when money is available to fix the brownfield situation, the local residents are left out of the process. NO LONGER. Sustainable South Bronx's River Heroes program trains community members to both take advantage of the monies entering the South Bronx for clean up projects, and seeds the community with green collar workers who have an [sic] direct economic stake in the longer term future of their local environment. Their example inspires others to do the same.

....

The 3-month program is designed to train individuals in riverine and estuarine restoration. The Bronx River becomes there [sic] hands-on classroom; trainees learn the science and techniques of salt marsh and streambed stabilization, plant identification, nursery management, and more. Our holistic approach also includes valuable life skills in time management, financial management, resume writing, and Environmental Justice. Trainees will also obtain certification in First Aid and CPR, Hazardous Materials Handling, OSHA, Tree Climbing and Pruning, and take classes at the New York Botanical Garden with one-on-one personal support to help trainees launch their lives in a new direction. This program is funded by Congressman Serrano, NOAA, and the Wildlife Conservation Society Fund.

Sustainable South Bronx, B.E.S.T. Bronx Environmental Stewardship Training, <http://web.archive.org/web/20070507075515/http://www.ssbx.org> (last visited Mar. 28, 2007).

224. See Little, *supra* note 223.

therefore, been largely excluded from a natural stream of funding. The dCDM could aid in funding these efforts where there is a nexus with climate change mitigation and potential credits. The carbon offset potential of the green roofing projects, for example, would be calculated for tradable credits. For those credits, investors would aid in the funding of training efforts and other project necessities.

The campaign for green-collar jobs is just as much about economic and social recovery for EJ communities as it is about environmental dividends. This kind of recovery will ultimately aid these communities in preparedness for the ongoing and increasingly onerous impacts of climate change, as predicted by economists like Sir Nicholas Stern discussed in Part I above. This kind of “green” takes on a number of significant meanings, therefore, for groups like the Apollo Alliance. The green-collar economy includes all “green jobs” like construction work on green buildings, organic farming, solar panel manufacturing, and bicycle repair. Cognizant of Oakland, California’s “literal do-or-die struggle to build a sustainable local living economy strong enough to lift people out of poverty,”²²⁵ community leaders under the banner of the local Alliance are committed to “job creation for the low-income and people of color in the green, sustainable economy.”²²⁶ There are numerous opportunities for Oakland; many already exist, but most are part of a package of innovative and bold solutions.²²⁷ Oakland is, for example, one of the sunniest, windiest cities in California, poised to be a leader in solar and wind power, according to

225. Van Jones & Ben Wiskida, *Green-Collar Jobs for Urban America*, YES! MAG., Feb. 28, 2007, at 21, 21, available at <http://www.alternet.org/story/48490/>.

226. *Id.* The Oakland Apollo Alliance is one of the nation’s first roundtables committed to this goal. *Id.* Generally, the National Apollo Alliance is an effort to create three million clean energy jobs in the next decade. *Id.*

227. *See id.* First, and foremost, “the ‘green wave’ of investment is ‘hottest’ . . . in the Bay Area.” *Id.* Second, recently elected mayor Ron Dellums has “promised to make Oakland ‘a Silicon Valley’ of green capital, pledging to make the growth of the green economy central to Oakland’s comeback.” *Id.* Projects proposed to Dellums by the Oakland Apollo Alliance include “the nation’s first ‘Green Jobs Corps’, a training pipeline and partnership between labor unions, the community college system, and the City to train and employ residents, particularly hard-to-employ constituencies . . . in the new green economy.” *Id.* at 23. Existing programs include Red Star Homes projects, in which developers connected to the Apollo Alliance are employing the formerly incarcerated to construct green buildings on the site of a once-toxic brownfield. *See id.* at 22.

Van Jones's Ella Baker Center for Human Rights.²²⁸ It is also home to one of the world's largest, dirtiest ports that the Alliance seeks to transform into a "healthy port" by dramatically reducing emissions.²²⁹

Again, "[b]y their nature, green jobs are local jobs,"²³⁰ and a Green Jobs Corp, for example, will necessarily be an expression of the community speaking for itself. The Oakland Apollo Alliance has the larger vision of turning Oakland into a "global green city," where the pathway out of poverty is the new green wave."²³¹ A major impediment, of course, is investment. Other market sectors are not going to Oakland, forcing Jones to ask, "If green isn't the answer, what is?" For meeting environmental and climate justice demands, a well-funded green movement must indeed be the answer.

Solar panel installation, green-roofs, and the like are projects that would more likely fall under a small-scale dCDM project,²³² yet would provide the ancillary benefit of preparing these ventures for retail markets. Local entrepreneurship and community patronage are increasing by leaps and bounds, boding well for the prospect of additional revenue from solely private transactions. In other words, communities may benefit from the projects that have generated credits by using the initial project investment to spur growth for community co-ops, for example. There is an "extraordinary range" of new economic associations that "both anchor jobs and change the nature of wealth ownership."²³³ There are about 11,000 substantially or wholly employee-owned businesses now operating around the United States.²³⁴ Neighborhood-based community

228. *Id.*

229. *Id.* at 23. The Oakland Apollo Alliance seeks to turn one of Oakland's greatest public health threats into an international model for sustainability. Ancillary projects include a nearby biodiesel fueling station and manufacturing plants, as the Port converts to biodiesel. *See id.*

230. *Id.*

231. *Id.*

232. *See* discussion of small-scale CDM projects *supra* Part III.B.1. Of course, these projects might also be bundled as one city-wide or region-wide project.

233. Gar Alperovitz, *You Say You Want a Revolution*, WORLD WATCH, Nov.-Dec. 2005, at 19.

234. *Id.*

development corps actively working across the country number at around 4000.²³⁵ And, most importantly, more than 115 million Americans are members of co-ops, indicating a vibrant and growing customer base.²³⁶ This kind of capacity to anchor jobs is “of extreme importance to community stability,”²³⁷ and an encouraging indicator for a solar roofs co-op as discussed above.

Specifically, retail markets for climate change projects are booming, also boding well for the community-based effort.²³⁸ Companies and individuals without significant emissions who wish to be climate neutral increasingly participate in these markets,²³⁹ offsetting their carbon-intensive activities through brokered investment in green projects. At present, “[s]everal ‘retailers’ serve this small but growing market by implementing larger emissions reduction projects.”²⁴⁰ The dCDM can ready EJ communities for full participation in these markets, and provide steady revenue sources in the meantime.²⁴¹

235. *Id.* at 20.

236. *Id.*

237. *Id.* at 19-20.

238. *See, e.g.*, The Climate Trust, What is an Offset, http://www.climatetrust.org/about_offsets.php (last visited Nov. 4, 2007); Eco2Balance, <http://www.eco2balance.com> (last visited Nov. 4, 2007); NativeEnergy, Why Offset with NativeEnergy, http://www.nativeenergy.com/why_offset.html (last visited Nov. 4, 2007).

239. *See* LECOCQ & CAPOOR, *supra* note 166.

240. *Id.* at 13. The full quotation reads as follows: “Several ‘retailers’ serve this small but growing market, by implementing larger emission reduction projects, and then retiring slices of the emission reductions for their customers.” *Id.* Participation in this retail market could also have decidedly positive impacts on reducing greenhouse gas emissions, and concomitant pollution-based public health concerns, with the retiring of credits by EJ co-ops paid for by individuals and companies. Further, the recent Supreme Court decisions in *Massachusetts v. EPA* and *Environmental Defense Fund v. Duke Energy Corp.* have boosted confidence in the growing importance of alternative energy. *See* Duane Morris LLP, Supreme Court Environmental Rulings Boost Confidence in Alternative Energy Investments, <http://www.duanemorris.com/alerts/alert2471.html> (last visited Feb. 15, 2008). As an indication of the growing strength of the market, Duane Morris writes, “Energy companies can feel confident investing resources in alternative energy, since both rulings almost assuredly will boost the market for energy alternatives such as solar, wind, biomass . . . technology.” *Id.*

241. The dCDM might also leverage independent private investment. For the Protocol’s CDM, Morgan Stanley has made plans to invest almost \$3 billion

Urban-based dCDM projects will likely begin at the state and municipality level. Much can be done in conjunction with the “quiet explosion” of state and local policies aimed at building local self-reliance as well as green economies. The former policies are focused on retaining jobs and increasing local economic “multipliers” allowing money to recirculate in a community, producing additional jobs.²⁴² Public contracts, for example, are being used to help neighborhood-anchored community development corporations (CDCs) while improving the delivery of government services.²⁴³ These CDCs are getting an additional boost with publicly sponsored “buy local” programs. Urban-based dCDM projects are natural fits for these locality-based efforts. The green policies are also proliferating in American cities. Many municipalities are creating jobs and generating revenues through landfill gas recovery business enterprises, turning methane into energy, for example.²⁴⁴ Cities like New York, which currently accounts for two percent of total U.S. carbon emissions, seek to be leaders in the effort to go green.²⁴⁵ The U.S. mayors’ initiative has resulted in “[m]any of these cities [changing] building codes to encourage energy efficiency, . . . pushing nonautomobile transport, tree planting, rooftop gardens, and biodiesel in city vehicles.”²⁴⁶ At each of these points EJ community-operated organizations can benefit within, and as a result of, dCDM investments.

There are as many possibilities in rural communities.²⁴⁷

in projects that will generate credits for emissions reduction over the next five years. See *\$3 Billion Investment to Cut Greenhouse Gas Emissions Announced by Morgan Stanley*, Daily Env’t Rep. (BNA), at A-2 (Oct. 30, 2006). Project beneficiaries include projects certified under the CDM. Venture capitalists are already investing heavily in green technologies like wind, solar, and biofuel, in anticipation of the “next big market.” Duane Morris LLP, *supra* note 240. In fact, “U.S. investors made more than two-thirds of all green technology investments last year.” *Id.*

242. Alperovitz, *supra* note 233, at 19.

243. *Id.*

244. *Id.* at 20. Methane is a byproduct of waste disposal. *Id.*

245. *Cooling the Planet at the Gas Roots*, CHRISTIAN SCI. MONITOR, Nov. 1, 2006, at 8, 8.

246. *Id.*

247. See, e.g., Alan Scher Zagier, *Hard Pressed Farmers Turn to Wind for Cash*, MSNBC.COM, Nov. 2, 2006, <http://www.msnbc.msn.com/id/15527920/>.

Native wind projects, for example, are the most well-established cooperatives just waiting for a formal market, which the dCDM would provide. According to Winona LaDuke, Native American activist and environmental justice advocate, native people have their eyes on the horizon.²⁴⁸ There is a movement for local control of energy as wind and solar projects proliferate throughout native lands. Specifically, there is a push for the creation of distributed energy systems with which local households and businesses can produce power and sell excess energy onto the grid.²⁴⁹ This locality-based approach emphasizes small-scale and dispersed-alternatives generation, providing the possibility of production at the tribal level.²⁵⁰ LaDuke perfectly summarizes the intersection of race, poverty, and just solutions, solutions that lack only the right of entry. She writes:

The reality is that this region of North America has more wind power potential than almost anywhere in the world. Twenty-three Indian tribes have more than 300 gigawatts of wind generating potential. That's equal to over half of present U.S. installed electrical capacity. Those tribes live in some of the poorest counties in the country, yet the wind turbines they are putting up could power America—if they had more markets and access to power lines.²⁵¹

Again, market access would be the very purpose and the incredible value of the dCDM.

Currently, significant tribe-based initiatives under NativeEnergy have begun selling renewable energy credits or “green tags” on a more ad hoc basis. The Rosebud Sioux, a founding member of the Intertribal Council on Utility

Rural projects are introducing great possibilities. In this article, Zagier describes wind energy projects that are meeting the needs of northwest Missouri hog and soybean farmers. *Id.*

248. Winona LaDuke, *Local Energy, Local Power*, YES! MAG., Winter 2007, at 26, 26.

249. *See id.* at 27; *see also* Gough, *supra* note 44, at 7 (describing the development and marketing of wind power dependent on the integrated transmission grid operated through the Western Area Power Administration).

250. Local level alternative energy generation would also avoid the involvement of “big money and corporations.” LaDuke, *supra* note 248, at 27.

251. *Id.* at 27-28.

Policy (COUP) in South Dakota, “pioneered the development of green power financing through the up-front sale of green tags (or renewable energy credits . . . RECs).”²⁵² NativeEnergy markets the tags to buyers who seek to reduce domestic carbon emissions while financially supporting tribal renewables projects. Bob Gough describes the end product as “sustainable homeland economies.”²⁵³ “Village power models” can develop renewables technology designed for remote off-grid applications, serving the grossly underserved on Indian lands, while restoring the balance upset by environmental and climate injustices.

The dCDM would ensure a long-term stable revenue source for projects that are already proceeding in a CDM-like fashion.²⁵⁴ In its expansion phase, NativeEnergy envisions “further development of private marketing

252. Bob Gough, *Embracing the Wind*, ENERGYBIZ, Jan.-Feb. 2006, at 82, 82.

253. Gough advocates on behalf of a “no regrets” strategy for the reduction of carbon emissions that fosters these local economies based on renewables and at the same time meets regional energy demand needs. Gough, *supra* note 44, at 1.

254. Or, more generally, for offsetting programs, which are accepted components of domestic pollution abatement efforts. See *supra* note 159 and accompanying text (describing 42 U.S.C. § 7503 (2000)). In addition, private markets have dabbled in carbon trading. The Chicago Climate Exchange (CCX) is a private and voluntary market for emission allowances between firms. LECOCQ & CAPOOR, *supra* note 166, at 12. The CCX operates as a pilot greenhouse gas “cap-and-trade system through which entities, mainly U.S.-based private firms, have agreed to voluntarily limit their . . . emissions . . . through internal reductions.” *Id.* at 34. Firms can purchase allowances from other firms facing emissions limitations, or purchase credits from emission reduction projects that meet state criteria. *Id.* at 34-35. And, of course, U.S. companies that operate overseas have had to conform to Kyoto Protocol mandates. See Michael J. Zimmer, *Global Climate Change Creates a New Carbon Business for U.S. Companies*, 7 SUSTAINABLE DEV. L. & POLY 64, 64 (2007) (explaining that “[a]s part of a global economy, U.S. companies operating abroad are already participating in carbon management schemes because of local Kyoto compliance obligations in their host countries”). Offsetting measures, conducive to a dCDM program, have already been contemplated in proposed climate bills. The Feinstein-Carper bill, for example, would allow companies to engage in emissions trading and “offset” projects, such as tree planting, to meet targets. Mike Ferullo, *Climate Coalition Says Incremental Approach May Work Best for Cap-and-Trade System*, Chemical Reg. Daily (BNA), at D-16 (Feb. 14, 2007); see also Bogdonoff & Rubin, *supra* note 138, at 11 (describing RGGI provisions allowing some portion of emissions reductions to be gained from other sources: “RGGI specifies a number of categories of offset allowances, such as planting trees to absorb carbon”).

strategies for the sale of green power, green tags and pollution credits”—all needed to support development of NativeEnergy projects.²⁵⁵ The market share potential is great, as the Intertribal COUP presently assesses the wind potential in the Great Plains Indian reservations and conservatively estimates an energy generation of 530 billion kilowatt-hours annually.²⁵⁶ Sustainable home economies can be fostered and advanced with the support of an independent, firmly established market infrastructure—the dCDM.

IV. JUSTICE IS MITIGATION

While articulating the virtues of the dCDM, I remain mindful of the inherent defects in the market structure in which it will operate. From the EJ perspective, market mechanisms often suffer fundamental flaws. The most significant, perhaps, is their inconsonance with principles of rights and equity. The market is at best unmoved by the differential experience of the poor and of-color. At worst, the mechanisms encouraged, like cap-and-trade, exacerbate disproportionate environmental risks producing ugly realities like toxic hotspots.²⁵⁷ Cap-and-trade systems are also often criticized as red herrings, overshadowing more effective regulatory measures. In short, aggressive action to mitigate the disastrous effects of climate change is clearly warranted in order to avoid the most severe outcomes predicted—and

255. Gough, *supra* note 44, at 12.

256. Gough, *supra* note 252, at 82. This is compared to the 10,000 kilowatt-hours of power used annually by the average U.S. home. *Id.* The alternatives potential is not limited to wind energy, by any means. Indian lands have an enormous wealth of solar, geothermal, and biomass renewable energy resources. In addition, there is significant potential for the creation of carbon sink, through forest and prairie restoration. Gough, *supra* note 44, at 5, 8. But the wind potential should not be underestimated. According to Gough, “the 12 Indian reservations in North and South Dakota have a wind power potential of at least twice that necessary to meet the Kyoto target for the entire United States for the 1999 emissions levels.” *Id.* at 6 (footnote omitted).

257. Hotspots occur when the pollution burden of a community or region, hosting a high-cost source is exacerbated by that source’s ability to purchase allowances from a low-cost source. In other words, the emissions of the source that can only reduce emissions at a relatively higher cost will increase, with the disproportionate impact felt by its immediate neighbors. See further discussion of hotspots *infra* note 261.

cap-and-trade systems fall well below these preferred actions.

In this section, I highlight a few of the most salient EJ critiques of cap-and-trade. These critiques, coupled with the ethical groundwork laid out by climate change ethicists and described in Part I, demand nothing short of the cessation of fossil fuel combustion at present levels, perhaps immediately.²⁵⁸ It is clear, however, that the political will to implement even moderate mandatory mitigation measures is absent. At this point in our history, it seems clear that ample and sufficient mitigation is untenable. And without a dCDM, a cap-and-trade approach will very likely repeat many old and dangerous mistakes.

A. *Inherent Flaws in Market Mechanisms*

Because of the qualified success of cap-and-trade in earlier emissions trading mechanisms, it is now seen by many as the panacea for all environmental risks.²⁵⁹ Yet the

258. Though I will not take it up in this Article, there are a number of compelling ethical arguments based on intergenerational harm. *See, e.g.*, FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING (2004); John Edward Davidson, *Tomorrow's Standing Today: How the Equitable Jurisdiction Clause of Article III, Section 2 Confers Standing Upon Future Generations*, 28 COLUM. J. ENVTL. L. 185, 186-94 (2003); Douglas A. Kysar, *Discounting . . . on Stilts*, 74 U. CHI. L. REV. 119 (2007); Richard L. Revesz, *Environmental Regulation, Cost-Benefit Analysis, and the Discounting of Human Lives*, 99 COLUM. L. REV. 941, 946-48, 987-1017 (1999); Edith Brown Weiss, *Our Rights and Obligations to Future Generations for the Environment*, 84 AM. J. INT'L L. 198 (1990). With respect to cost-benefit analysis, used both to determine the level of risk posed and the solution chosen, economic modeling is an ethical failure. When performing the analysis across generations, standard cost-benefit analysis engages in discounting of future benefits, so that "the benefits beyond half a century barely count." Duncan, *Dismal Calculations*, *supra* note 37, at 15.

259. Title IV of the Clean Air Act is often heralded for the cap-and-trade program it established. *See, e.g.*, Dallas Burtraw & Byron Swift, *A New Standard of Performance: An Analysis of the Clean Air Act's Acid Rain Program*, 26 ENVTL. L. REP. 10411 (1996); Joseph Goffman, *Title IV of the Clean Air Act: Lessons for Success of the Acid Rain Emissions Trading Program*, 14 PENN ST. ENVTL. L. REV. 177 (2006); *see also* William Chameides & Michael Oppenheimer, *Carbon Trading Over Taxes*, SCI., Mar. 23, 2007, at 1670 (describing the United States' ability to "reduce sulfur oxide emissions ahead of schedule and at 30% of the projected cost using a market-based cap-and-trade system" (citation omitted)). The major advantage of cap-and-trade identified in the Chameides and Oppenheimer article is the potential for innovation

ancillary impacts, namely the toxic hotspot phenomenon in EJ communities, undermine any good-faith claims to progress. There are also very real questions as to whether a trading system will do much to reduce greenhouse gas emissions sufficiently.²⁶⁰

Cap-and-trade, unsupplemented, can actually aggravate disparate impact. With the implementation of the Clean Air Act's Title IV trading program, EJ communities suffered the brunt of the trading scheme. Those facilities unable to reduce their sulfur dioxide emissions, for example, simply purchased additional credits from companies that could do so more efficiently. The result was that certain neighborhoods, often traditional EJ neighborhoods near oil refineries and other industrial polluters, experienced a spike in their exposure to smokestack pollutants even while the overall emissions burden for a region fell. This toxic hotspot phenomenon is the prototypical scenario for cap-and-trade programs for pollutants.²⁶¹

incentives that market-based systems provide and the possibility of inexpensive CO₂ emission reductions. *Id.*

260. For broad critiques of cap-and-trade programs in the context of climate change, see Todd B. Adams, *Is There a Legal Future for Sustainable Development in Global Warming? Justice, Economics, and Protecting the Environment*, 16 GEO. INT'L ENVTL. L. REV. 77, 112-26 (2003); David M. Driesen, *Free Lunch or Cheap Fix?: The Emissions Trading Idea and the Climate Change Convention*, 26 B.C. ENVTL. AFF. L. REV. 1 (1998). Ruth Greenspan Bell expresses deep skepticism about emissions-trading regimes, claiming that they do very little to cap pollution. Relying on a trading system assumes, she argues, "that the opportunity to profit from . . . greenhouse gas emissions will [actually] motivate industrial emitters." Ruth Greenspan Bell, *What to Do About Climate Change*, 85 FOREIGN AFF., May-June 2006, at 105, 106-07. There is certainly concern about the efficacy of cap-and-trade over the long term. See Whetzel, *supra* note 148. At a University of California, Berkeley, conference there was general agreement among the speakers—economists and policy experts—that "while cap-and-trade programs might not be the best long-term mechanism to battle global warming, they have garnered widespread acceptance and offer near-term advantages." *Id.* Emissions reduction credits, even under the proposed dCDM, are suspect over the long-term. See Ben Elgin, *Another Inconvenient Truth*, BUS. WK., Mar. 26, 2007, at 96, 102 (quoting Tufts Climate Initiative outreach coordinator Anja S. Kollmuss's skepticism: "We cannot solve the climate crisis by buying offsets and claiming to be climate-neutral Nature does not fall for accounting schemes.").

261. EPA's trading system for mercury, for instance, has been roundly criticized for its creation of hotspots. See, e.g., Michelle O'Donnell, *States Challenge Break on Mercury for Power Plants*, N.Y. TIMES, May 19, 2005, at B9 (describing a lawsuit filed by eleven states against the EPA on the ground that

Carbon trading, as a response to global warming, will exacerbate the negative effects of its co-pollutants that result from the same source. These co-pollutants include toxic and cancer-causing hydrocarbons, mercury, and particulate matter, among many others. As a general rule, however, those focused on market-tradable commodities will put the largest weight on aggregate impacts, satisfied solely with overall reduction.²⁶² Conversely, those with equity and justice concerns look to distributional effects. Climate justice principles, therefore, militate against these kinds of emissions abatement schemes.²⁶³ Instead, climate justice advocates will look to responses that affirmatively address burden disparities. Market systems, which often go hand-in-hand with technological solutions, look to efficiency. But concerns regarding distributional effects arise in opposition to the dominance of efficiency and the over-reliance on technological fixes,²⁶⁴ which tend to reinforce

the mercury cap-and-trade system would create hot spots); Catherine A. O'Neill, *Mercury, Risk, and Justice*, 34 ENVTL. L. REP. 11070, 11098 (2004). These hotspots militate in favor of source-specific controls in a cap-and-trade system. If pure command-and-control is not adopted, limitations to the flexibility inherent in an emissions trading program must be built into the mechanism. See David A. Evans & Joseph A. Kruger, *Where are the Sky's Limits? Lessons From Chicago's Cap-and-Trade Program*, ENV'T, Mar. 2007, at 20, 26. This will yield a more complex trading mechanism, which in turn "increases the cost of [control in] administering the market mechanism and somewhat reduces its cost advantage over more traditional regulatory forms." AFRICAN AMERICANS AND CLIMATE CHANGE, *supra* 22, at 139. In effect, a more just cap-and-trade system can only be accomplished if it loses its appeal as a low-cost alternative to command-and-control, revealing an inherent tension.

262. See Schneider & Lane, *supra* note 1. Pellow and Brulle argue that this market indifference is exacerbated by poor or non-existent government response. They argue that "not only does the market fail to take into account the ecological consequences of its actions; the state also fails to control the market." Pellow & Brulle, *supra* note 87, at 7.

263. Describing EJ principles generally, David Monsma explains, "[t]he principles also address the central role that industrialized nations and transnational corporations play in causing climate change, and question market-based mechanisms currently being promoted by climate change experts, which do not necessarily address the potential of disproportionate environmental impacts." Monsma, *supra* note 85, at 491.

264. This reliance is overly sanguine irrespective of one's vantage point. In other words, one need not be a climate justice advocate to expose the naiveté inherent in technological reliance. See, e.g., R.T. Pierrehumbert, *Climate Change: A Catastrophe in Slow Motion*, 6 CHI. J. INT'L L. 573, 580 (2006) (explaining that "[b]ecause of the extremely long-term impact of each additional

power and wealth disparities as access to technologies is not equitably distributed.²⁶⁵

Further, at base, cap-and-trade provides a profit-making means for complying with a preexisting ethical duty not to pollute.²⁶⁶ In other words, rights and duties theory, “[w]hen applied to emissions trading, . . . demands that because a right to a clean environment exists as a statement of positive law, a corresponding duty exists among others not to pollute.”²⁶⁷ The argument becomes even more poignant from the perspective of the poor and of-color. As carbon trading is currently constructed, those that stand to benefit from that trading, in the United States and in the Kyoto framework, are those that are already in the business of producing intense greenhouse gas emissions. Few would argue that a market system in which extreme

year’s carbon dioxide emissions, the calculus of delay is completely changed as compared to other pollution problems”). In short, technological fixes in the long-term, in lieu of short-term mitigation measures, will not stem the irreversible chain of events set in play once the planet has reached the climate tipping point. As Pierrehumbert writes, “If we wait forty or fifty years before taking serious action, the die will have been cast and a thousand generations of our descendants will have to live with the consequences of the climate we bequeathed them.” *Id.* at 580.

265. See Leichenko & O’Brien, *supra* note 176. “[A]daptation strategies based on a winners and losers framework may tend to emphasize technological solutions. . . . [S]uch actions tend to reinforce rather than alleviate inequitable distribution of economic and political power between and within social groups.” *Id.* at 113-14 This disparity is apparent today as public health and welfare is compromised by varying access to “simple” and more commonplace technology, like the air conditioner. See Complaint at 12, *California v. General Motors Corp.*, No. 06-05755 (N.D. Calif. Sept. 20, 2006); Adger et al., *supra* note 27, at 2; AFRICAN AMERICANS AND CLIMATE CHANGE, *supra* note 22, at 20-21.

266. See, e.g., Junker, *supra* note 139, at 152-53, 160-70 (surveying the “catalogue of environmental rights” within both international and domestic law, and finding that “a remarkable number” of constitutions worldwide do “recognize the right of the legal person to enjoy a healthy or clean natural environment,” while “nowhere will one find the act of polluting the natural environment explicitly established as a right for any legal person . . . in any international or municipal source of law”). Jerome Ringo, Chairman of the Board of the National Wildlife Federation, President of the Apollo Alliance, and environmental justice activist, revealed the absurdity of programs that essentially pay companies to follow the law when he stated simply, “You don’t pay crack addicts to stop selling crack.” Jerome Ringo, Chairman of the Bd., Nat’l Wildlife Fed’n, President, Apollo Alliance, Keynote Speech at The Climate of Environmental Justice: Taking Stock (Mar. 16, 2007). For a deeper discussion of the ethical implications of emissions trading, see Junker, *supra* note 139.

267. Junker, *supra* note 139, at 170.

wealth disparities are exacerbated—particularly in light of disparate climate effects—is ethically neutral.²⁶⁸ Yet the expectation vis-à-vis emissions trading is that outcomes of processes such as markets, assumed to be procedurally just, should be accepted even if they produce unequal results. Jouni Paavola et al., however, argue convincingly that this expectation is problematic because it denies the significance of “unequal starting points, postulate[s] the legitimacy of [the powerful’s] favorite procedures, and end[s] up affirming the fairness of *status quo*.”²⁶⁹ With the interplay of race and poverty, particularly when viewed on a global scale, the market is wholly inadequate.²⁷⁰

Current political exigencies suggest, however, that finding climate justice solutions concordant with current policy will ensure that communities have an opportunity to craft the most advantageous manifestation of these solutions. The consequences of not participating in crafting these solutions are simply too grave—climate change is the first enormous risk that is both uncertain and irreversible in its result with EJ communities uniquely situated in its path.²⁷¹

268. For greater elaboration on this ethical argument, see Schneider & Lane, *supra* note 1. Schneider and Lane argue: “Very few would view a market valuation of impacts in which the rich get richer and the poor get poorer as ethically neutral. In international negotiations, members of the political South often challenge supporters of the use of aggregated market damages . . .” *Id.* at 32. Yet in their critique there is a positive place for the dCDM. They identify a “bottom-up approach [which] focuses on the vulnerability and adaptive capacity of individuals or groups, which leads to social indications of potential danger such as poverty, lack of access to healthcare, or ineffective political institutions.” *Id.* at 33. Under the dCDM, with its emphasis on local, community-based, green economic development measures, these vulnerability and adaptive concerns will be specifically addressed.

269. Paavola et al., *supra* note 82, at 267; see also Richard N.L. Andrews, *Learning from History: U.S. Environmental Politics, Policies, and the Common Good*, ENV'T, Nov. 2006, at 29, 42 (arguing that free-market advocates offer “a vision of freedom from taxation and government compulsion, implying that individuals can buy the environment they want, but this scenario offers nothing to the less affluent and ignores the common-good elements of the environment that affect rich and poor alike”).

270. My next article will tackle the formidable world of law and economics from an environmental justice perspective. I will explore the myriad objections to the law and economics approach in light of the particular devotion to rights espoused by many in poor and of-color communities.

271. While I generally shun the cynical strategies of *realpolitik*, it seems

B. *The dCDM is the Most Viable Alternative for Incorporating Environmental Justice Norms*

Despite strong ethical arguments outlined above, there are no indications that aggressive mitigation is a viable part of any policy package proffered today. In fact, even the more tepid cap-and-trade solutions proposed may “prove too exacting for [this] Congress.”²⁷² In spite of the IPCC reports, the Bush Administration continues to tout the virtues of voluntary emissions caps, eschewing plans for mandatory emissions reductions programs.²⁷³ A veto of a cap-and-trade

that the EJ principle of participation and communities speaking for themselves trumps a more revolutionary approach, *at the moment*. Inclusion in the crafting of solutions and a dismantling of pervasive systemic failures should occur simultaneously. It seems to me that this first, immediate, and short-term effort to avoid exclusion is vital. It is important to note, however, that in offering the dCDM I am not advocating for a “co-opted and quiescent movement.” See Robert Benford, *The Half-Life of the Environmental Justice Frame: Innovation, Diffusion, and Stagnation*, in POWER, JUSTICE, AND THE ENVIRONMENT: A CRITICAL APPRAISAL OF THE ENVIRONMENTAL JUSTICE MOVEMENT, *supra* note 28, at 37, 53 n.14.

272. *Green America*, *supra* note 134, at 60 (describing the uphill battle for all bills in Congress with the added possibility of presidential veto); Scott, *supra* note 11 (citing Bush Administration officials expressing strong reservations on current bills that would establish mandatory greenhouse gas reduction programs); see also Carolyn Whetzel, *Feinstein Says Approval of Five Bills Would Help Reduce Carbon Emissions*, Int'l Env't Daily (BNA), at D-11 (Feb. 27, 2007) (quoting Feinstein as stating that “winning the 60 votes needed to pass the bills [to reduce emissions of carbon dioxide and other greenhouse gases] will be difficult”). Cap-and-trade, however, appears “to be less politically volatile than the prospect of [raising] energy taxes.” See Dean Scott, *Combination of Research, Mandatory Limits Can Cut Greenhouse Emissions, Report Says*, 37 Env't Rep. (BNA), at 1942 (Sept. 22, 2006). This is true in spite of the carbon taxes' probable advantages. See *id.*; *It May Be Hot in Washington Too*, ECONOMIST, Nov. 4, 2006, at 69, 69 (finding that Europe mostly uses taxes and that most economists argue that a carbon tax would be the most efficient solution); Dean Scott, *Congressional Economist Says Carbon Tax More Efficient Than Cap-and-Trade Effort*, Chemical Reg. Daily (BNA), at D-7 (Mar. 28, 2006); see also Paavola et al., *supra* note 82. From a social justice standpoint, the carbon tax has an additional advantage. Namely, a uniform carbon tax can be tailored so that it falls on those who emit more in per capita terms or who have the highest cumulative historical emissions, and revenues could “replenish . . . fund[s] for compensating impacts of . . . and for assisting adaptation to climate change.” *Id.* at 272.

273. Dean Scott & Larry Speer, *Bush Administration Embraces IPCC Findings But Resists Calls for Capping U.S. Emissions*, Chemical Reg. Daily (BNA), at D-16 (Feb. 5, 2007). At the June, 2007 meeting of the G-8 leaders, President Bush conceded only that the United States would “seriously consider[]”

program, though the most attractive policy option, is possible. Further, absent the political will, the popular groundswell is nascent, and most Americans tend to balk at the prospect of generalized lifestyle inconveniences. Undoubtedly, the more modest task of stabilizing greenhouse gas emissions will require huge changes in behavior.²⁷⁴ There are few signs that the United States as a nation is willing to undertake the necessary lifestyle sacrifices required to slow global warming. A more austere climate policy, though absolutely needed, is likely not viable at the present time.

Even more troubling for the prospect of more aggressive climate policy, is “the economy, stupid.” Law and policy are relentlessly fixed on economic indicators, subjecting our very livelihood to cost-benefit analyses.²⁷⁵ As described by

a proposal targeting a fifty percent reduction in global greenhouse gas emissions by 2050; he continued to refuse to commit to binding cuts. See Stephen Gardner, *Climate Change: Environmental Groups Say G-8 Compromise Should Be Base for Post-2012 Framework*, Daily Env't. Rep. (BNA), at A-2 (June 11, 2007). Domestically, the President “is working with businesses to encourage voluntary, cost-effective greenhouse gas emission reductions” and promoting a “[n]ational [g]oal to [r]educe [e]missions [i]ntensity” (as opposed to capping and reducing overall emissions). The White House: Council on Environmental Quality, Addressing Global Climate Change, <http://www.whitehouse.gov/ceq/global-change.html#2> (last visited Nov. 7, 2007); see also E. Donald Elliott et al., *Recent Clean Air Act Developments—2006*, 37 ENVTL. L. REP. 10274, 10283 (2007) (explaining the difference between “carbon intensity”—the “measure of GHG emissions per unit of gross domestic product”—and overall emissions).

274. Brown, *supra* note 107, at 10756. This is in contrast to actually reducing emissions to twentieth century levels. Brown insists that the United States must adopt a greenhouse gas reduction program that will reduce emissions to 1990 levels by no later than 2012, a deadline we are destined to miss. *Id.* at 10767. Brown also advocates an open embrace of the precautionary principle in the face of uncertainty and the placing of emissions reduction at the very top of the United States’ domestic and foreign policy agenda. *Id.* at 10763, 10768.

275. See, e.g., Lisa Heinzerling, *The Accidental Environmentalist: Judge Posner on Catastrophic Thinking*, 94 GEO. L.J. 833, 856-57 (2006) (review of RICHARD A. POSNER, *CATASTROPHE: RISK AND RESPONSE* (2004)) (highlighting the “profound bizarreness of attaching a dollar value to the continued existence” of the human race). My next article will critique the law and economics movement, and its devotion to cost-benefit analysis, from the perspective of climate justice. Schneider and Lane explain that:

Traditional cost-benefit analysis (CBA) . . . tends to consider a sole numeraire, market values, and is often viewed as unjust . . . because nature and distributional aspects are rarely explicitly treated. In a traditional CBA, the ethical principle is not even classical Benthamite

one commentator, “some economists feel that the issue [of climate change] has been captured by economically illiterate climatologists who do not seem to understand that mitigating climate change means spending real money now . . . for uncertain benefits in a remote future.”²⁷⁶ For many, despite important positions like those advocated in the Stern Report, a gradual approach is cheaper and, therefore, preferred.²⁷⁷ With this fixation all “rational” roads lead back to cap-and-trade.²⁷⁸

There is little space in the contemporary discourse on environmental law and policy for meaningful discussion of rights and equity. This is, of course, an unacceptable reality, one that must be shifted away from efficiency and back towards ethics and, in this case, climate justice. In the short term, however, cap-and-trade is immediately viable²⁷⁹ and the dCDM could temper inequities.²⁸⁰

utilitarianism (greatest good for the greatest number of people), but an aggregated market power form of utilitarianism (greatest good for the greatest number of dollars in benefit-cost ratios).

Schneider & Lane, *supra* note 1, at 31.

276. Duncan, *Dismal Calculations*, *supra* note 37, at 14.

277. *Id.* at 17. The go-it-slow approach is preferred despite being divorced from scientific necessity. Richard Richels of the Electric Power Research Institute, for example, estimates that stabilizing emissions at 550 ppm would cost a quarter as much as stabilizing emissions at 450 ppm, because the latter “would require existing plant[s] to be scrapped.” *Id.* at 14, 16. The more strenuous 450 ppm goal, however, does not ensure against climate catastrophe. According to Gelbspan, “[t]he major national environmental groups focusing on climate . . . have agreed to accept what they see as a politically feasible target for 450 parts per million of carbon dioxide. . . . [That] may be politically realistic, [but] it would likely be environmentally catastrophic.” *Quoted in* MICHAEL SHELLENBERGER & TED NORDHAUS, *THE DEATH OF ENVIRONMENTALISM: GLOBAL WARMING POLITICS IN A POST-ENVIRONMENTAL WORLD* 24 (2004).

278. Of course, when issues beyond price arise, there is a tepid, but telling, concession that arises. Ethical considerations and the moral obligations of the greatest emitters may resonate with economists, and may indeed counsel toward more aggressive mitigation, irrespective of costs. One admits, “[t]here are a couple of ethical questions that shift the argument towards mitigation.” Duncan, *Dismal Calculations*, *supra* note 37, at 16.

279. And despite likely delay, it does appear inevitable. *See* Whetzel, *supra* note 148. Manik Roy of the Pew Center on Global Climate Change suggests that a successful vote on climate change legislation in 2007 is “plausible,” but more likely in 2008, and “any national program would likely be a cap-and-trade scheme.” *Id.*

280. In fact, in the Stern Review on the economics of climate change, the

The dCDM is the best, just solution in the face of none.²⁸¹ It is also consistent with traditional environmental justice norms, and, at the same time, soundly responds to some of the more salient criticisms leveled at EJ thus far. Specifically, consistent with the Ten Actions of Climate Justice Policies enumerated at the Second National People of Color Environment Leadership Summit, the dCDM would “ensure just transition[s] for workers and communities,” by ensuring a place in the burgeoning “renewable resource economy.”²⁸² It is, in fact, dependent upon the promotion of “ownership and stewardship of renewable resources” by workers and community members.²⁸³ As a part of a domestic market, the dCDM will “allow communities to participate in the creation” and maintenance of the carbon market—meeting another important action point for Climate Justice Policies.²⁸⁴ Another more general environmental justice goal that would be met is in creating possible carbon sinks, through afforestation and reforestation projects, for example, the dCDM could facilitate desperately needed efforts to green urban EJ communities. At present, urban communities of color are bereft of parks and open spaces,

report endorses expansions of the use of instruments like the Clean Development Mechanism. See Tom Blass, *British Report on Economics of Warming Prompts New Initiatives to Cut Emissions*, Daily Env't Rep. (BNA), at A-4 (Oct. 31, 2006). Of course, aggressive mitigation is still the single best alternative, dwarfing short-term strategies like cap-and-trade and development mechanisms in a climate justice analysis.

281. It is also viable in its harmony with domestic bills, like America's Climate Security Act of 2007, S. 2191, 110th Cong. (2007), that already contemplate domestic offsets, worker training programs, and climate provisions for the poor. See the discussion of Lieberman and Warner's America's Climate Security Act of 2007, *supra* Part III.A.

282. See Ansje Miller & Cody Sisco, *Ten Actions of Climate Justice Policies 4* (Second Nat'l People of Color Env'tl. Leadership Summit - Summit II, Resource Paper Series, Oct. 23, 2002), available at <http://www.ejrc.cau.edu/summit2/SummIIClimateJustice%20.pdf> (declaring that “[t]o ensure equity and self-sufficiency, policies must engage and empower communities with the information and resources to transition to a renewable resource economy”).

283. *Id.* Of course, per principle 4, community participation would not only be required, but also imperative. See *id.* at 5.

284. *Id.* at 8. In fact, principle 8 calls for a portion of market revenues to be set aside for “grants of options to impacted individuals and communities who can then choose to buy permits, maintain sinks, or use the money in any other way to adapt to climate change.” *Id.* This is certainly accounted for in the dCDM.

particularly as compared to their white counterparts.²⁸⁵ Social justice and green infrastructures will, for once, have a committed and steady investment mechanism.²⁸⁶

The mechanism will also quiet EJ detractors. Organizations such as the Black Chamber of Commerce—and other political and economic forces in the African American community—have organized to oppose the EJ movement, claiming that it seeks to prevent all economic development in communities of color. The dCDM is an EJ and a climate justice solution that disproves the underlying premise of the above critique and encourages the kind of economic development that will ready communities for an unparalleled challenge.²⁸⁷

In assessing the future of environmental justice, Brulle and Pellow maintained that a “sophisticated EJ vision” would combine the creation of “innovative practices through existing entities” and the development of “new institutions apart from traditional ones.”²⁸⁸ The dCDM introduces both. With the opportunity presented by increasing demands for climate policy and the introduction of sustainable local economies in EJ communities, the dCDM is poised to incorporate environmental justice and climate justice norms in early climate policy decisionmaking.

285. For example,

[a] careful study of the Los Angeles area found that neighborhoods that were more than 75 percent white enjoyed thirty-two acres of park per thousand residents, whereas those that were more than 75 percent Latino enjoyed less than one acre per thousand residents, and those that were more than 75 percent black had about two acres per thousand residents.

PASTOR ET AL., *supra* note 30, at 18.

286. *See generally id.* at 37 (advocating a balance of green building and social justice in rebuilding the Gulf region).

287. Pellow and Brulle argue that “[h]ow the EJ movement understands, analyzes, and challenges this intra-racial resistance and highly organized opposition will be instructive and a harbinger of the future health of the cause.” Pellow & Brulle, *supra* note 87, at 12. Indeed, the dCDM portends a very healthy future for EJ.

288. Brulle & Pellow, *supra* note 95, at 295.

CONCLUSION

Environmental justice norms demand that in choosing its response to climate change, the United States address the disproportionate burdens of the crisis. The emerging discussion of policy strategies to respond to global warming has failed to address concerns of communities that will be most negatively affected by related calamities. This policy failing reflects, in large part, a conceptual blind spot as to the relevance of environmental justice concerns to global warming. Indeed, U.S. legal academics to date have not developed and adhered to a concept of “climate justice,” and thus policymakers are not alone in this regard. As this Article has made clear, however, climate justice is a powerful concern that must be placed within the broader environmental justice framework, and policymakers should be careful to address such concerns in adopting measures to address the climate crisis.

The urgency of the crisis requires prompt and substantive action. We now have an opportunity and a moral obligation to implement climate solutions that neither disregard disproportionate suffering nor aggravate it. In fact, a union of justice principles and climate change solutions will allow the United States to decisively demonstrate what it so often simply declares: the nation’s claimed foundational commitment to justice and equity in our laws.²⁸⁹

In the short term, adoption of the domestic CDM, though not the overarching remedy that environmental justice advocates would like to see most, is the remedy that is consistent with the current trajectory of policy-makers and, as such, is the most feasible approach. There are also significant advantages that attach to this solution. Besides meeting the theoretical and practical mandates of the environmental justice movement, it is an important engine for emergent economic development opportunities across the nation’s rural and urban communities. This and the struggle for more fundamental systemic changes can, and should, be done concurrently.

289. Environmental justice scholars Bunyan Bryant and Elaine Hockman insist that “[i]t is within the context of climate justice that activists can make an impact that could surpass the impact of the [Civil Rights Movement].” Bryant & Hockman, *supra* note 30, at 34.

The additional, though less obvious, benefit of this analysis is that it sets a framework for how the United States can meet its responsibilities and obligations to poor and of-color communities throughout the globe. Climate justice, in other words, can forcefully encourage the United States to consider the consequences of its political and economic character and incorporate the attendant moral obligations into its choice of solutions. If the environmental justice movement cannot curb the excesses of the United States' political economy, however, it will surely be ill-equipped to do so on a global scale.²⁹⁰ There is a growing sense that the continued relevance of the movement is hinged on its ability to have consequence in the fate of the global poor and of-color. The environmental justice movement, therefore, must be a critical and consequential crafter of domestic, and ultimately global, solutions.

The domestic CDM is, in fact, a model solution in light of the reconsidered EJ movement. From their review and critique of the first decades of EJ, Robert Brulle and David Pellow urge twenty-first century EJ scholars to balance the documentation of problems with an "orientation toward" solutions.²⁹¹ They explicitly request proposals that promote "new directions for society to heal itself and produce more just and sustainable forms of production."²⁹² This is the vital contribution of the dCDM to our communities as well as to the legal academy.

It is true that "[p]olitics and law can ultimately have no higher purpose than seeking fair outcomes for the survival of the natural world."²⁹³ It is also true that adaptation measures produced by political and legal processes can reinforce rather than alleviate uneven distributions of power.²⁹⁴ My purpose here has been to encourage an adaptive response that does not reinforce inequality, but instead takes the first, crucial step to charting a path in

290. See Pellow & Brulle, *supra* note 87; Brulle & Pellow, *supra* note 95, at 296 (arguing that EJ "must go global" to survive as a movement, because those who live in the North have a responsibility to those who live in the South).

291. Brulle & Pellow, *supra* note 95, at 296.

292. *Id.*

293. Adger et al., *supra* note 27, at 19.

294. Leichenko & O'Brien, *supra* note 176, at 105.

which all solutions, however flawed, may be just.