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COUPLING ENVIRONMENTAL JUSTICE WITH CARBON TRADING*

by Joseph Lam**

INTRODUCTION

Cap and trade has become the mechanism of choice for many American lawmakers seeking to address the global issue of climate change.¹ The recent adoption of the California cap and trade system has further spurred present discussions on whether a domestic cap and trade system to regulate greenhouse gas (“GHG”) emissions would be most effective in mitigating climate change.² Moreover, the Regional Greenhouse Gas Initiative (“RGGI”) program currently implemented in the Northeastern states further contributes to this debate.³ Despite its regulatory nature, major business associations and environmental groups have endorsed market-based cap and trade, and the proposed system has enjoyed more political traction than other possible GHG regulations, such as a carbon tax.⁴

The idea of cap and trade is simple enough: set a “cap” that equals the annual allowable emissions of the targeted pollutant; allocate, either by auction or by free distribution, a certain number of allowances to pollute, which should cumulatively fulfill the cap; and allow the selling and purchasing (i.e., trade) of these allowances between firms.⁵ Many cap and trade programs also include offset provisions that allow firms to purchase additional allowances from the regulator by investing in additional pollution reducing programs.⁶

Theoretically, this system would create an efficient and low-maintenance administrative scheme to reduce GHGs. Under a cap and trade program, the regulated firms could use their own industry knowledge and expertise to decide the most sensible method of reduction. Additionally, firms could also cover emissions beyond their allocated amounts by purchasing allowances from other firms.⁷ If Firm A can reduce GHG emissions cheaply, it can sell its allowances to Firm B, which may not be able to reduce its emissions at such a low cost. Therefore, the aggregate reduction goal of cap and trade is achieved at the lowest cost because the most efficient polluters, like Firm A, bear the lion’s share of responsibility to meet the emissions cap.⁸ As the cap is periodically lowered, successful price signals would likely be able to spur on the continuous reduction of emissions at the lowest cost through trading and technological innovations.⁹ A well-designed cap and trade program will not only bring economic efficiency, but increased administrative expeditiousness as well—the government would play a more passive facilitator role: set the cap, auction off allowances, monitor the use of those allowances, facilitate the purchase of offsets, verify the facilities’ emissions levels, and enforce against firms who exceed their allowed emissions levels.¹⁰

Policymakers, academics, and economists have touted GHG reduction and cap and trade as the perfect marriage because GHGs have the same effect on climate change no matter where the emissions occur; a unit of emissions in California will affect the globe the same amount as a unit of emissions in New York.¹¹ Greenhouse gases also do not have localized effects like sulfur dioxide or lead, so one California firm can use a large amount of allowances without disproportionately jeopardizing the health and welfare of its neighboring residents.¹²

Although GHGs generally have global effects, the co-pollutants that often accompany them can cause severe health and environmental problems in the local communities where emissions are often highest.¹³ Typical co-pollutants include volatile organic compounds (“VOCs”), sulfur dioxide, benzene, carbon monoxide, nitrogen oxide, and other harmful particulate matter.¹⁴ Since firms located in low-income minority communities tend to have the most antiquated facilities that emit the highest amount of GHGs, these companies would probably be the ones that would need to purchase the most allowances through cap and trade to meet their limited allocations.¹⁵ Although cap and trade aims to provide facilities with flexibility to decide for themselves when to reduce emissions or use allowances, this runs against environmental justice goals of promoting public participation, distributive justice, and community empowerment.¹⁶ To attain economic efficiency and to maintain a broad holistic solution, cap and trade programs and proposals, as we know them, do not factor in *distributional consequences* in any meaningful way.¹⁷ If cap and trade goes according to plan, streamlined trading would run like a thoroughbred, liquidity would increase, and all these decisions that affect human health and the environment would effectively occur without input from the people who are affected locally. Additionally, many of the enacted and proposed GHG regulations have focused on preventing and mitigating harm, but have not devoted the same attention and care in providing improvements to the condition of the people’s lives.

This article holds that environmental justice and cap and trade can actually be harmonized, arguing for a more robust and nuanced cap and trade system that promotes principles of public participation, equity, and empowerment, while still maintaining an optimal and efficient market-based system. In fact, a cap and trade program could even be used to spur on environmental

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justice. To achieve this end, such a system must involve: (1) an identification process,¹⁸ (2) investment into environmental justice communities,¹⁹ and (3) financial mechanisms to fund such investment.²⁰

The first step in implementing a cap and trade program that enhances environmental justice is to define “environmental justice” itself and identify where environmental justice communities are located. Environmental justice communities are generally defined as those composed predominantly of persons of color or a substantial proportion of persons below the poverty line that are also subjected to a disproportionate burden of environmental hazards relative to other communities.²¹ Proper identification of these communities is important because one cannot hope to aid the environmental justice movement if one does not know who or what comprises an environmental justice community.

The second step of implementation calls for the investment of revenue generated by cap and trade back into those communities that are most affected by environmental pollution and health problems. This article adopts the proposal of the California Market Advisory Committee to devote “a significant portion of the allowance value to investments in communities that bear disproportionate environmental and public health burdens.”²² Under this proposal, the revenue gathered through cap and trade would be placed into the hands of the affected community to invest in clean energy and technology projects that could benefit the community’s environmental health and economic condition.

The third step calls for financial mechanisms to allow the cap and trade program to gather the revenue needed to facilitate the second step. These financial mechanisms would likely take the form of allowance auctions, luxury taxes, and possibly monetary penalties for excess emissions.²³

ADVANCING ENVIRONMENTAL JUSTICE THROUGH CAP AND TRADE

IDENTIFYING ENVIRONMENTAL JUSTICE COMMUNITIES

The first fundamental step in incorporating environmental justice in a national GHG cap and trade program is to identify the communities who are most-at-risk to environmental harms and are hindered in being able to reduce their exposure to these harms. Although it may sometimes be clear which communities are most negatively affected by environmental pollution, a formal database would serve an important role to officially recognize the environmental justice communities. By identifying these environmental justice communities, policymakers and government regulators would have a database from which to administer benefits to the communities more effectively.

Other government entities, such as the California Air Resources Board (“CARB”), which includes the Environmental Justice Advisory Committee (hereinafter “EJAC”), have proposed similar programs called the “screening method.”²⁴ Members of EJAC have advocated for such a screening method to determine which areas qualify as environmental justice communities.²⁵

PROCESS OF IDENTIFICATION

Environmental justice communities can be identified or “screened” in two ways. First, a certain neighborhood can attempt to self-identify as an environmental justice community by applying with the regulatory agency. Such an evaluation of applicants could use EJAC’s August 25, 2010 screening method recommendations to CARB as a model for the criteria to use when identifying environmental justice communities.²⁶ Specifically, EJAC has recommended that “[a]t the very least we expect the [CARB] to include race ethnicity, home ownership, age of housing stock, language isolations, age[,] and access to health services” when screening for potential environmental justice communities.²⁷ This recommendation is based on EJAC’s research, which found that, in the San Francisco Bay, income, race ethnicity, home ownership, language isolation, and land use have been “shown to be statistically significant indicators of increased cancer risk or respiratory hazards [.]”²⁸ This Bay Area study demonstrates that the effects of environmental injustice correlates with low-income and minority communities.²⁹ EJAC further recommends that the criteria take into account cumulative effects, tailoring certain criteria for certain types of regions (e.g., measuring pesticide use in farm areas), and conducting analysis on land use including the proximity of emitting facilities to residential neighborhoods.³⁰ The self-identification process would also allow environmental justice communities to voice their concerns and needs. By allowing environmental justice communities to publicly participate in the identification process, the government is legitimizing and validating the communities’ concerns and problems. This would promote one of the environmental justice’s main goals of furthering public participation.

Second, in conjunction with self-identification, regulators could also actively seek out and identify potential environmental justice communities on their own. In fact, regulators should have ultimate responsibility to identify and evaluate potential environmental justice communities. Even if that process requires fewer government resources, regulators cannot simply rely on the environmental justice communities to self-identify. Instead, the government must proactively pinpoint environmental justice communities based off a set of specified criteria. Government decision-makers and regulators could choose to partner with nonprofit groups or contract with commercial survey companies to identify those underprivileged communities that are at high risk of environmental and public health harms. While it would likely be a difficult task to index every eligible community in America, once such a list is created *in toto*, government regulators would then theoretically have a comprehensive list of communities to work from. Through this identification process, specific information about each community would accordingly be gathered, creating an encyclopedic database containing profiles of all environmental justice communities. Such a database would afford the government the ability to understand and meet the needs of individual communities in the most tailored and direct way.

However, problems could arise if a self-identified community that desires recognition as an environmental justice

community is rejected by or omitted from the designation process by the government. This could present an even bigger issue if the coveted benefits and resources that designation affords environmental justice communities are significant.

While this article cannot specifically address every situation, it suggests two possible solutions to ensure that an environmental justice communities database covers all deserving communities. First, the government should establish broad and flexible criteria that consider a wide range of environmental problems in various environmental justice communities.³¹ Second, the government could implement an appeals process whereby an applicant-community that is denied designation can make its case to an appeals board. This appeals process would allow for a more detailed review to determine whether a community satisfies the established criteria vis-à-vis a meeting and reconsideration of any special circumstances that the community in question may have.

GREATER OVERSIGHT FOR FIRMS IN ENVIRONMENTAL JUSTICE COMMUNITIES

After designating the environmental justice communities, government regulators should maintain close monitoring of the firms in these communities to ensure compliance with regulations and firms' purchase of allowances sufficient to match their emissions. These government regulators may also want to promote more public participation by implementing a public accountability process where private citizens can call and report any suspicious or illegal activity by a firm. Thus, while firms operating in designated environmental justice communities would not be subject to more stringent cap and trade regulations, they would be under more vigilant government and public monitoring compared to firms outside of environmental justice communities.

Funding for this oversight could come from various sources. First, these funds could come from the government enforcement budget already in place.³² An enforcement agency could choose to focus more of its resources on environmental justice enforcement because the cost should theoretically be lower under a cap and trade regime. Second, funding could be raised if a portion of the revenue gained through the cap and trade program's allowance auctions is specifically set aside for enforcement and monitoring efforts in environmental justice communities. In this way, the companies buying allowances would supplement the cost of enforcement.

INVESTMENT IN LOCAL ENVIRONMENTAL JUSTICE COMMUNITIES

In furthering the environmental justice goal of community empowerment, a cap and trade program can provide funding for localized investments in clean energy and technology projects that could revitalize communities surrounding the projects. By investing the capital raised by market-based programs, such as the auctioning of allowances, in these local areas, cap and trade programs could stimulate economic growth in environmental justice communities.

In recent years, much emphasis has been placed on the potential economic benefits associated with green development and "green-collared" jobs.³³ Political leaders, government policymakers, academics, nonprofit groups, economists, urban planners, labor unions, and businesses have all taken interest in fostering economic growth in conjunction with sustainable communities, clean energy technology, and improving the overall quality of life for the local residents.³⁴ The use of a GHG cap and trade program can support and combine two major environmental policy goals. The first major goal is to shift America's fossil fuel based economy towards an economy that "can function effectively through renewable energy sources and [] achiev[e] high levels of energy efficiency."³⁵ The second major goal is to encourage the broad principles of environmental justice by promoting environmental health improvement and empowering the local environmental justice communities.

Combining these two goals could bring about significant reductions in GHG emissions while also creating environmental and economic improvements in impoverished environmental justice communities. Thus, by striving for the first goal to environmental justice communities, policymakers can fulfill the second goal as well. When a plethora of the clean technology and clean energy investments and projects are funneled into environmental justice communities, green-collar jobs would be created to satisfy the need for individuals to manufacture and provide pertinent goods and services.³⁶ Van Jones, a leading expert in the area of green technology, wrote, "[w]e should use the transition to a better energy strategy as an opportunity to create a better economy," and revitalize communities by, "creat[ing] new markets, new technology, new industries, and a new workforce"³⁷ based on a corresponding need for thousands of contracts and workers.³⁸

INVESTING IN CLEAN ENERGY AND TECHNOLOGY

Investing in the development of renewable and clean energy infrastructure and technology (hereinafter, "clean energy") in local communities would lead to greater prospects for job creation and economic advancement. According to a report by the Renewable and Appropriate Energy Laboratory, "[a]cross a broad range of scenarios, the renewable energy sector generates more jobs than the fossil fuel-based energy sector per unit of energy delivered (i.e., per average megawatt)."³⁹ U.S. Commerce Department research has also shown that 16.7 jobs are created for every \$1 million spent on clean energy investments, compared to the 5.3 jobs created through \$1 million in spending on oil, natural gas, or coal investments.⁴⁰ "Clean energy investments" could include spending for building retrofits, public transportation, smart grid electrical transmission systems, solar power, wind power, and biomass fuels.⁴¹

The creation of jobs—green or otherwise—occur from the *direct*, *indirect*, and *induced effects* of spending.⁴² To borrow from an example given in a report by the Department of Economics and Political Economy Research Institute at University of Massachusetts, Amherst, significant jobs are created when resources are invested into the business of

retrofitting homes.⁴³ This first causes the direct effect creation of jobs for workers who could be retrofitting the homes.⁴⁴ But also, indirect job creation comes from the jobs associated with those industries that supply intermediate goods for the building of retrofits such as lumber, steel, and conveyances. Further, induced job creation would result when these workers spend their incomes on other goods and services, further increasing overall employment capacity.⁴⁵

These clean energy jobs, because of their characteristics and demands, are often well-suited to local residents in environmental justice communities. Clean energy jobs require traditional blue-collar workers; as Dr. Raquel Pinderhughes, a San Francisco State University urban planning and development professor, wrote that “[g]reen collar jobs are blue color jobs in green businesses- that is, manual labor jobs.”⁴⁶ At the same time, the University of Massachusetts, Amherst has reported that clean energy spending produces more jobs at all pay levels than the fossil fuel industry does, further expanding the capacity for employment at all skill levels.⁴⁷ Because clean energy jobs require more workers at every skill level, more opportunities are created for those without a college degree. According to an IMPLAN 2008 Current Population Survey, one million dollars of clean energy investments creates 8.0 jobs for workers with a high school diploma or less, while a fossil fuel expenditure of the same amount creates only 2.2 jobs of the same type.⁴⁸ And one million dollars of clean energy investments creates 4.8 jobs for workers with a high school diploma or less paying on average \$15/hour, which is over six times greater than the fossil fuel industry’s 0.7 jobs.⁴⁹

Furthermore, many of these clean energy investments tend to rely more on domestic goods, services, and labor than their fossil fuel counterparts.⁵⁰ For example, according to the report by the University of Massachusetts, Amherst, about ninety-seven percent of total spending in public transportation and building retrofits would most likely remain in the U.S. economy.⁵¹ Instead of outsourcing labor or importing goods and services, these investments’ applications are concentrated within the United States.⁵² In fact, these jobs would also benefit the localized communities in which they are located because many of them cannot be outsourced.⁵³ For example, a home can only be retrofitted where it is located and the retrofitting of a public transportation system cannot plausibly be done overseas.⁵⁴ The data above demonstrates that the clean energy sector offers a greater quantity of jobs without sacrificing quality and pay.⁵⁵ Ultimately, these jobs can empower and revitalize the local communities both economically and environmentally because they are “high quality, living wage manual labor jobs that engage [community members] in meaningful, environmentally restorative, community serving work and livelihoods.”⁵⁶

EMPOWERMENT OF ENVIRONMENTAL JUSTICE COMMUNITIES THROUGH CLEAN ENERGY

Environmental justice communities can harness the wealth of potential benefits that comes from clean energy investments.⁵⁷ As the federal government has done in the past with programs

such as the U.S. Department of Energy’s Weatherization Assistance Program, the government could also marshal financial resources to each environmental justice community for the purpose of making clean energy investments.⁵⁸ These financial resources would not come from additional taxpayer dollars, but from the revenue gained through the cap and trade program’s various financial mechanisms. The federal government should play this subsidiary role to facilitate the local empowerment of these communities.

FINANCIAL MECHANISMS IN CAP AND TRADE

The financial resources that could facilitate investments into rehabilitating environmental justice communities mentioned in the previous section would come primarily from a few financial mechanisms within the cap and trade program. The following financial mechanisms can be implemented into the cap and trade program to generate more revenue for clean energy investments in environmental justice communities.

AUCTIONING ALLOWANCES

An auction system should follow the California Market Advisory Committee’s recommendation to initially allocate a portion of allowances for free. Additionally, the government should hold an annual auction for a portion of the allowances.⁵⁹ As noted by the California Market Advisory Committee, it is possible to use “the allowance value to finance reductions of GHGs and criteria pollutants in communities that bear disproportionate environmental and public-health burdens.”⁶⁰ The percentage of allowances auctioned should then increase over time.⁶¹

Under an effective system, firms would purchase the allowances based on how many units of emissions they plan to emit. The government should also set a baseline bid price to ensure that each allowance is sold for a minimum amount. It is critical for the government to ensure that there is an adequate *demand* for these allowances, so the government must also set an overall cap that is low enough to prevent an oversaturation of allowances on the market.⁶² The auctioning of allowances would not likely generate adequate revenue if the firms do not otherwise constantly and consistently need allowances to meet their level of emissions. In addition to auctioning allowances to firms, the government could also open up the auction to the general public. Private citizens or groups in the general public can purchase allowances and effectively retire them by never using them, thus helping to decrease supply and create a greater demand that would drive up the price of allowances generally.

It is important to point out that there is no historical precedent for the auctioning off of all allowances; usually, at least a portion of the allowances are distributed freely to firms.⁶³ There is a concern such a large auction of allowances to so many regulated entities could prove unwieldy.⁶⁴ However, the government is not completely unfamiliar with other types of auctions on such a large scale. For example, the U.S. government has performed and managed treasury auctions before, which can be just as complex and large.⁶⁵ Of all the organizations and entities in the country, the federal government has the most resources, knowledge, and experience to run a GHG emissions allowances

auction.⁶⁶ Several state and federal carbon trading programs have already begun implementing allowance auctions.⁶⁷ For example, in North America the Regional Greenhouse Gas Initiative (“RGGI”) has been in place since 2009 and has allowed all RGGI states to auction a majority of their allowances and establishes a reserve price for those auctioned shares.⁶⁸

LUXURY TAX

The government should also consider implementing a luxury tax into its cap and trade program to incentivize firms to keep their emissions levels within a reasonable amount. The luxury tax should work as follows: first, the government would designate a percentage of overall emissions as the threshold where, if a firm were to emit an amount exceeding that percentage, it would have to pay a heavier tax—the luxury tax—for every ton of emissions over this threshold. For example, the government could set a luxury cap as 0.5% of the total emissions within the cap and trade system. Under this proposal, if Firm A’s amount of emissions comprises 0.6% of the total emissions, it would have to pay a hefty tax in accordance with those emissions above the luxury cap.

One scholar, Professor Kaswan of the University of San Francisco School Of Law, has proposed a similar approach. This cap and trade approach would treat certain environmental justice geographic areas differently by placing limits on the “percentage of allowances permitted from outside the program area [i.e., the markets’ geographic region], and a greater than 1:1 ratio [of allowances to emissions] could be required” and mandate even more allowance purchasing.⁶⁹ Though this is not exactly the same as a luxury tax, Professor Kaswan’s proposal could disincentivize the use of allowances by making them less valuable in certain geographic areas. In this way, the proposal conflicts with the market-based values of a cap and trade system.


The luxury cap should be carefully calculated so that firms are not discouraged from trade amongst themselves, which would disrupt the efficiency and effectiveness of the cap and trading program.⁷⁰ At the same time, the luxury cap should not be so high that firms ignore its existence. In setting a luxury tax, government regulators must strike a balance to maintain distributive justice in pollution trading and ensure that the market is not significantly disrupted. To accomplish this, the government should hire economists, research groups, and surveyors to formulate an appropriate tax.

The luxury tax serves to reconcile two competing principles that arise within the cap and trade program. The first is distributive justice: poor communities should not have to suffer a disproportionate amount of pollution and bear the majority of the nation’s emissions.⁷¹ The other is marketplace morality: firms are guided more by price signals and cheaper reductions than by concern for the localized effects of concentrated pollutants.⁷² Though it is important to incentivize firms to participate in the cap and trade program and reduce their GHG emissions efficiently and cheaply, this program must also ensure that the emissions levels in environmental justice communities do not reach unreasonable—or unjust—levels. A luxury tax would incentivize firms to make good faith attempts to reduce their own emissions instead of merely relying on allowances.

MONETARY PENALTIES

This article also proposes the investment of a portion of revenues gained from monetary penalties that firms pay for excess emissions, into clean energy investments in environmental justice communities. There have already been proposals by the California Market Advisory Committee to “use a portion of the allowance value...to finance pollution reductions in communities that bear disproportionate environmental and public-health burdens”⁷³ Using a portion of collected monetary penalties to invest in burdened communities’ clean energy projects could further encourage environmental justice through cap and trade.

CONCLUSION

At first blush, it may seem implausible for a market-based cap and trade program to harmonize with—let alone encourage—environmental justice. But implementing a cap and trade system that allows for localized clean energy investments could do just that. Identifying environmental justice communities, promoting public participation, and increasing oversight and compliance in a new cap and trade system are the steps needed to achieve this goal. Further, clean energy investments in overburdened communities, and the subsequent economic and employment benefits, could serve as the vehicle needed to harmonize these twin aims. Implementation of an effective cap and trade system can not only curb greenhouse gas emissions and climate change, but can improve the environmental health and economic condition of local communities across America. 

Endnotes: Coupling Environmental Justice with Carbon Trading

¹ See *California Adopts Extensive ‘Cap and Trade’ Plan*, CBSNews.com (Oct. 20, 2011, 8:11 PM), <http://www.cbsnews.com/stories/2011/10/20/ap/business/main20123483.shtml>.

² *Id.*

³ REG’L GREENHOUSE GAS INITIATIVE, INC., <http://www.rggi.org/rggi> (last visited Mar. 5, 2012).

⁴ See generally ALICE KASWAN, CPR PERSPECTIVE: ENVIRONMENTAL JUSTICE AND CLIMATE CHANGE, (July 2009), <http://www.progressivereform.org/perspEJandCC.cfm>.

⁵ Roberta Mann, *How to Love the One You’re With: Changing Tax Policy to Fit Cap-and-Trade*, 2 SAN DIEGO J. CLIMATE & ENERGY L. 145, 156 (2010).

⁶ *Id.*

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

continued on page 68

- ¹⁰ Alice Kaswan, *CPR Perspective: Environmental Justice and Climate Change*, CTR. FOR PROGRESSIVE REFORM (2009), <http://www.progressivereform.org/perspEJandCC.cfm>; see also *Basics of Cap and Trade*, U.S. ENV'TL PROT. AGENCY [U.S. EPA], <http://www.epa.gov/captrade/basic-info.html> (last updated Apr. 9, 2009) (stating that “[a] well-designed cap and trade program delivers . . . [f]ewer administrative costs to government . . .”).
- ¹¹ *Id.*
- ¹² *Id.*
- ¹³ *Id.*
- ¹⁴ See Alice Kaswan, *Environmental Justice and Climate Change Policy*, 38 ENVTL. L. REP. NEWS & ANALYSIS 10287, 10298 (2008).
- ¹⁵ *Id.* at 10299.
- ¹⁶ *Id.* at 10302.
- ¹⁷ Alice Kaswan, *Reconciling Justice and Efficiency: Integrating Environmental Justice Into Domestic Cap-And-Trade Programs for Controlling Greenhouse Gases*, in ETHICS IN GLOBAL CLIMATE CHANGE 240 (Dennis G. Arnold ed., 2011).
- ¹⁸ See Env'tl. Justice Advisory Comm., *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution for AB 32 Assessments*, 1-4, (Apr. 21, 2010), <http://www.arb.ca.gov/cc/ab32publichealth/communitymethod.pdf> (spelling out a “screening method” that attempts to identify communities that have been “highly impacted by air pollution”) [hereinafter EJAC]; MRKT. ADVISORY COMM. TO THE CAL. AIR RES. BD., RECOMMENDATIONS FOR DESIGNING A GREENHOUSE GAS CAP AND TRADE SYSTEM FOR CALIFORNIA 9 (2007), <http://www.energy.ca.gov/2007publications/ARB-1000-2007-007/ARB-1000-2007-007.PDF> [hereinafter Mkt. Advisory Comm].
- ¹⁹ See generally U.S. EPA, IMPROVING AIR QUALITY WITH ECONOMIC INCENTIVE PROGRAMS (Jan. 2001), <http://www.epa.gov/ttncaaa1/t1/memoranda/eipfin.pdf>.
- ²⁰ *Id.*
- ²¹ EMILY WELSCH, UNIV. MICH. ENVIRONMENTAL JUSTICE DEFINITIONS 1 (1997) <http://nmhealth.org/ehub/documents/Environmental%20Justice%20Definitions.pdf>.
- ²² MRKT. ADVISORY COMM. TO THE CAL. AIR RES. BD., *supra* note 18, at 9.
- ²³ See Alice Kaswan, *Reconciling Justice and Efficiency: Integrating Environmental Justice Into Domestic Cap-And-Trade Programs for Controlling Greenhouse Gases*, in ETHICS IN GLOBAL CLIMATE CHANGE 252-53 (Dennis G. Arnold ed., 2011).
- ²⁴ EJAC, *supra* note 18, at 1.
- ²⁵ *Id.*
- ²⁶ *Id.*
- ²⁷ *Id.* at 2.
- ²⁸ *Id.*
- ²⁹ *Id.*
- ³⁰ *Id.* at 2-3.
- ³¹ *Id.* at 2 (stating that “EJAC recommends that a broader suite of indicators should be available to tailor to the reality of each of the State’s regions.”).
- ³² See U.S. EPA, *supra* note 19, at 77-94.
- ³³ See Bryan Walsh, *What is a Green-Collar Job, Exactly?*, TIME (May 26, 2008), <http://www.time.com/time/health/article/0,8599,1809506,00.html>.
- ³⁴ See e.g. ELLA BAKER CTR. FOR HUMAN RIGHTS, MAKING GREEN WORK: BEST PRACTICES IN GREEN-COLLAR JOB TRAINING (2009), <http://www.ellabakercenter.org/downloads/gcjc/making-green-work.pdf>; RAQUEL PINDERHUGHES, GREEN COLLAR JOBS: AN ANALYSIS OF THE CAPACITY OF GREEN BUSINESSES TO PROVIDE HIGH QUALITY JOBS FOR MEN AND WOMEN WITH BARRIERS TO EMPLOYMENT (2007), <http://www.bss.sfsu.edu/raquelrp/documents/v13FullReport.pdf>; JONATHAN ROSE COMPANIES LLC & WALLACE ROBERTS & TODD, SMART GROWTH: GUIDELINES FOR SUSTAINABLE DESIGN AND DEVELOPMENT (2009), http://www.epa.gov/dced/pdf/sg_guidelines.pdf; U.S. EPA, BUILDING A SUSTAINABLE FUTURE: A REPORT ON THE ENVIRONMENTAL PROTECTION AGENCY’S BROWNFIELDS SUSTAINABILITY PILOTS (2009), http://www.epa.gov/brownfields/sustain_plts/reports/sustain_report_web_final.pdf; see CLINTON-GORE ADMIN., BUILDING LIVABLE COMMUNITIES: SUSTAINING PROSPERITY, IMPROVING QUALITY OF LIFE, BUILDING A SENSE OF COMMUNITY (2000), <http://www.smartgrowth.org/pdf/report2knew.pdf>; see ROBERT POLLIN, JEANNETTE WICKS-LIM & HEIDI GARRETT-PELTIER, GREEN PROSPERITY: HOW CLEAN ENERGY POLICIES CAN FIGHT POVERTY AND RAISE LIVING STANDARDS IN THE UNITED STATES (June 2009), http://docs.nrdc.org/globalWarming/files/glo_09062504a.pdf; see CAL. JOBS AND ECON. DEV. PANEL, THE GOVERNOR’S CONFERENCE ON LOCAL RENEWABLE ENERGY RESOURCES: CALIFORNIA’S PATH TO LOCAL RENEWABLES (2009), http://gov.ca.gov/docs/ec/Jobs_and_Economic_Development.pdf; see generally VAN JONES HARPERON, THE GREEN COLLAR ECONOMY: HOW ONE SOLUTION CAN FIX OUR TWO BIGGEST PROBLEMS 1, 79 (2008).
- ³⁵ POLLIN, WICKS-LIM & GARRETT-PELTIER, *supra* note 34, at 2.
- ³⁶ POLLIN, WICKS-LIM & GARRETT-PELTIER, *supra* note 34, at 9 (stating that “[s]pending money in any area of the U.S. economy will create jobs, since people are needed to produce any good or service that the economy supplies. This is true regardless of whether the spending is done by private businesses, households, or a government entity.”).
- ³⁷ HARPERON, *supra* note 34, at 14.
- ³⁸ *Id.* at 10.
- ³⁹ DANIEL M. KAMMEN ET AL., PUTTING RENEWABLES TO WORK: HOW MANY JOBS CAN THE CLEAN ENERGY INDUSTRY GENERATE? 2 (Apr. 13, 2004), <http://rael.berkeley.edu/sites/default/files/very-old-site/renewables.jobs.2006.pdf>.
- ⁴⁰ POLLIN, WICKS-LIM & GARRETT-PELTIER, *supra* note 34, at 9-10.
- ⁴¹ *See id.*
- ⁴² *Id.* at 9.
- ⁴³ *Id.*
- ⁴⁴ *Id.*
- ⁴⁵ *Id.*
- ⁴⁶ ELLA BAKER CTR. FOR HUMAN RIGHTS, *supra* note 34, at 7.
- ⁴⁷ See POLLIN, WICKS-LIM & GARRETT-PELTIER, *supra* note 34, at 10, 12.
- ⁴⁸ POLLIN, WICKS-LIM & GARRETT-PELTIER, *supra* note 34, at 12.
- ⁴⁹ *Id.*
- ⁵⁰ *Id.* at 10.
- ⁵¹ *Id.*
- ⁵² *Id.* at 9.
- ⁵³ *Id.* at 12.
- ⁵⁴ *Id.*
- ⁵⁵ *Id.*
- ⁵⁶ PINDERHUGHES, *supra* note 34, at 21.
- ⁵⁷ See generally POLLIN, WICKS-LIM & GARRETT-PELTIER, *supra* note 34.
- ⁵⁸ CLINTON-GORE ADMIN., *supra* note 34, at 62; see also POLLIN, WICKS-LIM & GARRETT-PELTIER, *supra* note 34, at 22.
- ⁵⁹ Mkt. Advisory Comm., *supra* note 18, at 57.
- ⁶⁰ *Id.*
- ⁶¹ *Id.* at 4.
- ⁶² *See id.* at 56.
- ⁶³ *Id.* at 58.
- ⁶⁴ *Id.* at 58-59.
- ⁶⁵ *Id.* at 59; see *How Treasury Auctions Work*, TREASURY DIRECT, <http://www.treasurydirect.gov/instit/auctfund/work/work.htm> (last visited March 6, 2012).
- ⁶⁶ See Alice Kaswan, *Decentralizing Cap-and-Trade? State Controls within a Federal Greenhouse Gas Cap-and-Trade Program*, 28 VA. ENVTL. L.J. 343, 346 (2010).
- ⁶⁷ *Id.*
- ⁶⁸ Mkt. Advisory Comm., *supra* note 18, at 15.
- ⁶⁹ Kaswan, *supra* note 14, at 10307.
- ⁷⁰ *See id.* (suggesting that “a sufficiently stringent cap will be key to a trading program’s efficacy”).
- ⁷¹ See generally Kaswan, *Reconciling Justice and Efficiency*, *supra* note 17.
- ⁷² *Id.*
- ⁷³ Mkt. Advisory Comm., *supra* note 18, at 80.