Can the Market Be Fair and Efficient?
An Environmental Justice Critique of Emissions Trading

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INTRODUCTION

As the 1990s come to a close, market-based approaches and environmental justice have emerged as two of the most innovative concepts in environmental policy. These concepts have expanded the environmental movement to address both economics and civil rights, with broad-based political support including President Clinton.¹ Until recently, market-based approaches and environmental justice have co-existed peacefully in their separate realms of environmental policy. The intersection of these two concepts, however, was inevitable. As the environmental justice movement matured, its focus expanded from hazardous waste facility sitings and contamination to other types of environmental impacts, such as air pollution.² Naturally, market-based approaches such as emission trading permits came under scrutiny by the environmental justice movement as the most recent policy innovation in air pollution control. Environmental justice advocates were particularly concerned with the efficacy of the market


². See e.g., Richard J. Lazarus, Distribution in Environmental Justice: Is There a Middle Ground?, 9 ST. JOHN'S J. LEGAL COMMENT 481, 483 (1994) ("Environmental justice is not just about siting . . . Environmental justice is about distribution. It is about distribution in the first instance, and it is about distribution over time.").
as a method to distribute environmental burdens and benefits. Traditional economic analysis assumes a level playing field as a precondition to the market. Yet real world intersections of income, race, gender, and other factors tilt the playing field in certain groups' favor. Because of such real world inequities, environmental justice advocates have begun to argue that market-based approaches cannot fairly distribute environmental quality.

On July 23, 1997, Communities for a Better Environment (CBE), in conjunction with the Center on Race, Poverty and the Environment and the NAACP Legal Defense and Education Fund, became the first environmental justice advocates to allege unfairness to minority communities from an emissions trading program. In its administrative complaint, based on Title VI of the Civil Rights Act of 1964 (Title VI) and Executive Order 12,898, CBE challenges the use of mobile source emissions trading

3. See John B. Cobb, Jr., Toward a Just and Sustainable Economic Order, 51 J. Soc. Issues 83, 87 (Winter 1995) ("Most advocates of the free market affirm the need for... rules [governing the market].... As long as all producers within the market abide by the same rules, there is a level playing field.").


5. Throughout this Comment, I use "minority communities" instead of "communities of color" to be consistent with the language of Executive Order 12,898 and related federal memoranda. By naming such communities "minority" versus "communities of color," however, I do not mean to imply that such communities are a numerical minority of the population. For instance, people of color represent more than 85% of the population in the San Pedro/Wilmington area.

6. Executive Order 12,898 directs federal agencies to ensure that their actions comply with Title VI of the Civil Rights Act of 1964. Title VI states that "[n]o person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." 42 U.S.C.A. § 2000d. An individual can allege a violation of Title VI implementing regulations by making a prima facie showing that a recipient of federal funds or a federally funded activity has disparate impact on a protected class. See New York Urban League v. New York, 71 F.3d 1031, 1036 (2d Cir. 1995).

7. Because CBE is the lead plaintiff and complainant, for brevity's sake I will
rules in Los Angeles that allow oil companies' marine terminals to buy emissions credits rather than install pollution abatement technology. These emissions credits, created by scrapping old, high-polluting vehicles, allow marine terminals to continue emitting volatile organic compounds (VOCs) at their facilities, while complying with air quality standards. While the net emissions of VOCs in the air basin remain the same, CBE alleges that allowing air pollution from scrapped vehicles to be relocated to these marine terminals causes toxic hot spots that disproportionately impact the surrounding Latino communities in the San Pedro/Wilmington area of Los Angeles.

CBE's environmental justice challenge to emissions trading rules has set two of the hottest issues in environmental policy on a collision course. On the one hand, traditional market-based approaches focus on efficiency by finding the least costly solution to a problem. But economics often ignores distributional fairness among participants in the market. In contrast, an environmental justice analysis does not view efficiency as a goal. In-

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8. Mobile source emissions trading rules govern trading of emissions from mobile sources such as automobiles and trucks.

9. See Complaint and Memorandum of Points and Authorities for Relief From Environmental Justice Violations, Communities for a Better Env't v. South Coast Air Quality Management Dist., (U.S. EPA filed July 23, 1997) (EPA No. 1OR-97-R9) [hereinafter Complaint, CBE v. SCAQMD]. CBE also filed suit in federal district court against the four oil companies that own the marine terminals in questions. While these complaints allege a disparate impact to communities surrounding the marine terminals, the allegations in the complaints are based on violations of the federal Clean Air Act. 42 U.S.C. § 7609. See Communities for a Better Env't v. Unocal Corp., No. 97-5414 (C.D. Cal. filed July 23, 1997); Communities for a Better Env't v. Ultramar Corp., No. 97-5413 (C.D. Cal. filed July 23, 1997); Communities for a Better Env't v. Chevron Corp., No. 97-5412 (C.D. Cal. filed July 23, 1997); Communities for a Better Env't v. Tosco Corp., No. 97-5411 (C.D. Cal. filed July 23, 1997); Communities for a Better Env't v. GATX Capital Corp., No. 97-5410 (C.D. Cal. filed July 23, 1997). The cases pending at the time of publication are: Communities for a Better Env't v. Unocal, Civ. No. 98-5175 DT (BQRx) (C.D. Cal.), Communities for a Better Env't v. Ultramar, Civ. No. 98-5174 DT (BQRx) (C.D. Cal.), Communities for a Better Env't v. Chevron, Civ. No. 98-5173 DT (BQRx) (C.D. Cal.).

10. VOCs are a component of ground level ozone, one of the main components of smog. Ozone is a criteria pollutant listed under § 108 of the CAA for which the EPA has promulgated National Ambient Air Quality Standards under § 109. See 42 U.S.C. § 7408; 42 U.S.C. § 7409.

11. Toxic hot spots are created when releases of toxic air contaminants "create localized concentrations ... [that] expose individuals and population groups to elevated risks of adverse health effects, including, but not limited to, cancer and contribute to the cumulative health risks of emissions from other sources in the area." CAL. HEALTH & SAFETY CODE § 44301(d).

12. See Complaint, CBE v. SCAQMD, supra note 9 at ¶ 5-6.
stead, environmental justice advocates place a high premium on relieving low-income and minority communities of environmental burdens regardless of resulting higher costs to certain market participants or society as a whole.\textsuperscript{13} Can these seemingly incompatible positions be theoretically as well as practically reconciled? In essence, can the market for environmental benefits be fair and efficient simultaneously?

This Comment uses CBE's Title VI complaint as the starting point for a broader environmental justice critique of pollution markets. Part I of this Comment discusses the background of environmental justice and marketable permits, explaining how pollution markets work in theory and in practice. The Los Angeles pollution market is reviewed as a case study. Part II presents CBE's Title VI complaint against mobile source emissions trading rules in Los Angeles. Part III steps back from CBE's specific complaint to consider a theoretical Title VI challenge to the entire pollution market concept, asking whether pollution markets are inherently discriminatory. This Part begins by examining what a disparate impact means in the context of emissions trading and then analyzes whether structural or extrinsic market factors of pollution markets cause per se discrimination. Part III concludes that while pollution markets do not inherently discriminate against minority communities, disparate impacts can occur as a result of trading. Part IV then argues that since pollution markets are not per se discriminatory, elimination of markets is not necessary to address potential disparate impacts. Part IV identifies possible market alternatives to mitigate disproportionate impacts on minority communities and concludes by analyzing their effects on the efficient operation of pollution markets.

I. ENVIRONMENTAL JUSTICE AND POLLUTION MARKETS

A. A Brief History of Environmental Justice

The environmental justice movement is a synergy of the grass-roots environmental and civil rights movements of the
1960s and 1970s. Environmental justice recognizes that race is a key factor in determining the distribution of environmental burdens. Environmental justice can have a variety of meanings. In the context of this Comment, however, I define environmental justice as "the fair treatment of people of all races, income, and culture with respect to the development, implementation, and enforcement of environmental laws, regulations and policies." The "environmental justice movement confronts government and business with issues of civil and human rights, indigenous land rights and sovereignty, cultural survival, racial and social justice, worker protection, and environmentally sustainable growth." Environmental justice seeks "the fair treatment of people of all races, income, and culture with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment implies that no person or group of people should shoulder a disproportionate share of the negative environmental impacts resulting from the execution of this country's domestic and foreign policy programs."

In the early 1980s, protests over the siting of a PCB landfill in a predominately African-American community in Warren County, North Carolina, focused activists and the public on the connection between race and the environment. Protests in Warren County prompted a 1983 U.S. General Accounting Office (GAO) study of hazardous waste landfill sitings in the South. The GAO study found a statistically significant relationship between the location of landfills and the race and socioeconomic status of the surrounding communities. In 1987, the United Church of Christ undertook a national survey of the distribution of hazardous waste sites. The study found that minority communities were more likely to be located near commercial hazardous waste facilities than white communities. Furthermore, race was the single best indicator of the location of commercial hazardous waste facilities. This survey and subsequent studies

15. EO 12,898, supra note 1.
17. EO 12,898 supra note 1.
18. See Bullard, supra note 13, at 5-6.
19. See id. at 6.
20. See id.
21. See UNITED CHURCH OF CHRIST, TOXIC WASTES AND RACE IN THE UNITED STATES: A NATIONAL REPORT ON THE RACIAL AND SOCIO-ECONOMIC CHARACTERISTICS OF
have been influential in substantiating grass-roots accounts of environmental racism as well as garnering political support for environmental justice mandates.\textsuperscript{22}

B. Environmental Justice Mandates

In response to the mounting evidence of disproportionate impact and political pressure from environmental justice advocates, President Clinton signed Executive Order 12,898 (EO 12,898), entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," on February 11, 1994. With this action, President Clinton made clear that environmental justice is an administration priority. EO 12,898 requires each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."\textsuperscript{23} To achieve this goal, EO 12,898 created an interagency working group to coordinate efforts in and between all the federal agencies.

In conjunction with EO 12,898, President Clinton issued a memorandum directing federal department and agency heads to ensure that "all programs or activities receiving Federal financial assistance that affect human health or the environment do not directly, or through contractual or other arrangements . . . discriminate on the basis of race, color, or national origin" in accordance with Title VI of the Civil Rights Act.\textsuperscript{24} The memorandum also directed each federal agency to consider effects on minority and low-income communities when preparing environmental analyses pursuant to the National Environmental Policy Act.\textsuperscript{25} The U.S. Environmental Protection Agency (EPA), in particular, has a special duty to ensure federal agencies have fully analyzed

\textsuperscript{22} For an analysis of available empirical evidence related to distributional impacts of pollution on communities of color, see, for example, \textit{Environmental Justice: Hearings Before the Subcommittee on Civil and Constitutional Rights of the Committee on the Judiciary House of Representatives}, 103rd Congress, 98-105 (1993) (prepared statement of Paul Mohai, Assistant Professor, School of Natural Resources and Environment, University of Michigan, Ann Arbor); Paul Mohai and Bunyan Bryant, \textit{Demographic Studies Reveal a Pattern of Environmental Injustice, in ENVIRONMENTAL JUSTICE} 10, 10-23 (Jonathon S. Petrikin ed., 1995).

\textsuperscript{23} EO No. 12,898, §1-101.

\textsuperscript{24} ENVIRONMENTAL PROTECTION AGENCY, INSIGHT POLICY PAPER, EPA-175-N-94-001, Mar. 1994.

\textsuperscript{25} National Environmental Policy Act of 1969, 42 USC § 4321-4347.
environmental impacts of emissions regulations on minority and low-income communities through its duty under the Clean Air Act (CAA) to review environmental effects of proposed actions of other federal agencies.26

Even before EO 12,898, the EPA had begun responding to the concerns of environmental justice advocates. In 1990, the agency formed an internal working group to study evidence of inequitable distribution of environmental risk. As a result of the working group's findings, the EPA created the Office of Environmental Equity, later renamed the Office of Environmental Justice and directed the Office of Civil Rights to investigate environmental justice complaints.27 In addition, the EPA established the National Environmental Justice Advisory Council (NEJAC), which is composed of academics, community and environmental activists, industry representatives, non-governmental organizations, state and local government officials, and tribal representatives.28 NEJAC provides independent advice, consultation, and recommendations to the EPA on environmental justice issues.29

President Clinton recently renewed the Administration’s support of environmental justice on the fourth anniversary of EO 12,898 by asking each cabinet member to designate an official in their department to work with the Council on Environmental Quality on environmental justice issues.30

C. Theory and Practice of Pollution Markets

While environmental justice critiques date back to the social movements of the 1960s, market-based approaches to pollution control are a more recent phenomena.31 Emissions trading mar-

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26. See INSIGHT POLICY PAPER, supra note 24 ("The Environmental Protection Agency, when reviewing environmental effects of proposed action[s] of other Federal agencies under section 309 of the CAA, 42 U.S.C. § 7609, shall ensure that the involved agency has fully analyzed environmental effects on minority communities and low-income communities, including human health, social, and economic effects.").


31. Throughout this Comment, I use the terms "emissions trading," "marketable permits," and "pollution markets" interchangeably to mean trading of pollution credits within an external market structure. In some literature, emissions trading also encompasses internal trades (between different parts of the same facility) such as
kets, in particular, gained nationwide attention with the passage of the 1990 CAA Amendments. As amended, Title IV of the CAA established a nationwide market for sulfur dioxide as part of the EPA's Acid Rain Program. The CAA Amendments also provided guidelines for states to develop their own economic incentive programs to meet federal air quality requirements. Congressional approval of the CAA Amendments represented the first national victory for environmental economists and academics advocating market mechanisms. Success with the sulfur dioxide market drew attention around the nation and spurred the EPA and state environmental agencies to consider marketable permits for several other types of emissions.

D. The Economic Principles of Pollution Markets

Marketable permits, or pollution markets, are based on simple economic principles that have been analyzed comprehensively in the legal literature. As in a command and control system, the government first determines a cap or limit on the

netting or bubbling. This Comment does not address internal trades from emission trading programs.


34. See J.E. de Steiguer, Three Theories From Economics About the Environment, 45 BIOSCIENCE 552, 555-56 (Sept. 1995) ("A practical success of environmental economists - that is, of putting theory into action - was the provision for marketable pollution permits in the CAA of 1990."). Prior to the 1990 CAA Amendments, the EPA experimented with emissions trading, allowing internal (different sources within the same facility) and limited external (between certain different facilities) trades but not a functioning market (only external trades). For an analysis of EPA's Emission Trading Program, see generally Daniel J. Dudek & John Palmisano, Emissions Trading: Why is This Thoroughbred Hobbled?, 13 COLUM. J. ENVIR. L. 217 (1988); Robert W. Hahn & Gordon L. Hester, Where Did All the Markets Go? An Analysis of EPA's Emissions Trading Program, 6 YALE J. ON REG. 109 (1989).

35. See Leyla Boulton, Comment & Analysis: For Sale: A License to Pollute: Traded Pollution Permits Have Curbed Sulfur Dioxide Emissions in the US and Could Soon be Extended More Widely, THE FIN. TIMES, May 6, 1996; Dallas Burtraw, Call It 'Pollution Rights,' But It Works; At Last, an Innovative Environmental Policy We Can Breathe Easier Over, WASH. POST, Mar. 31, 1996, at C03.


37. Command and control or direct regulation is the current method of environmental pollution control. Under this system, regulations usually specify what technology should be used or set a pollutant discharge rate cap. See PROJECT 88 - ROUND II 5 (Robert Stavins ed., 1991).
amount of pollution allowed. Once the pollution baseline is established, the regulatory agency assigns permits to each facility within the market area, allowing them to pollute in allocated increments. The sum total of the marketable permits must not exceed the desired pollution level.

Once the permits are assigned, facilities can determine how to meet their allotted level of pollution. The facilities might install conventional pollution abatement technology (as is now required by direct regulation). Alternatively, facilities may develop new technologies or change production processes to reduce pollution. If a facility reduces emissions below its permitted level, it can sell its excess credits to others, thereby gaining a monetary incentive to reduce pollution beyond compliance. For some facilities (for example, older facilities that would have to be retrofitted or for which it is too expensive to control emissions), it will be more cost effective to buy such excess credits and continue to pollute above the allotted level than to control emissions at its own facilities. Thus, unlike the command and control system, marketable permits allow each facility to choose the most cost-effective way to achieve pollution abatement. As a result, a pollution market allows localized differential pollution levels as long as overall pollution levels within a given area meet the established standard.

E. Case Study: South Coast Air Quality Management District

In 1993, the Southern California Air Quality Management District (SCAQMD), the regional agency responsible for implementing federal CAA requirements in Los Angeles, began developing its own pollution markets. The framework for SCAQMD emissions trading rules is the Regional Clean Air Incentives Market (RECLAIM). RECLAIM created the first mandatory market

38. Acceptance of pollution markets as a regulatory tool implies acceptance of a constant level of pollution. Many environmental groups including CBE challenge the basic concept of pollution markets precisely because they issue "rights" to pollute. These groups do not believe industry should have the right to pollute at all. See Telephone Interview with Scott Kuhn, Staff Attorney, Communities for a Better Environment (Dec. 9, 1997). I have not addressed this criticism of marketable permits because this Comment is focused solely on analyzing the distributional impacts of pollution markets.


40. See SCAQMD Regulation XX. Because the purpose of this Comment is to analyze pollution markets from an environmental justice perspective, I have not presented an in-depth discussion of RECLAIM itself. There are many well-written articles that provide detailed analyses of RECLAIM. See generally Matthew Polesetsky, Comment, Will a Market in Air Pollution Clean the Nation's Dirtiest Air? A Study of the
in nitrogen oxide and sulfur oxide emissions, pollutants that ultimately lead to the formation of ozone and sulfur dioxide, respectively. Since adopting RECLAIM in 1993, SCAQMD has adopted a number of other market-based emissions trading rules to give regulated facilities and individuals flexibility to find the most cost-effective method of compliance. These rules increase the program's scope by incorporating other types of pollution sources (e.g. mobile sources and area sources) into the market.

1. **RECLAIM: Los Angeles' Pollution Market**

RECLAIM has been in operation since 1994. Under RECLAIM, all facilities emitting four or more tons a year of nitrogen oxide or sulfur oxide must participate in the market. Other facilities may participate on a voluntary basis. RECLAIM allocates annual emission permits to participating facilities based on historical activity levels and applicable required emissions controls. Los Angeles does not currently meet federal and state air quality standards.

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41. The CAA requires attainment of National Ambient Air Quality Standards (NAAQS) for criteria air pollutants. Criteria pollutants are pollutants causing human health impacts due to their release from various pollution sources. EPA has established NAAQS pursuant to the CAA for the following criteria pollutants: ozone, particulate matter, sulfur dioxide, carbon monoxide, lead and nitrogen dioxide. See CAA § 109, 42 U.S.C. § 7409 (1970) (amended 1977). As precursor pollutants to ozone and sulfur dioxide, nitrogen oxide and sulfur oxide are also regulated under the CAA. Attainment deadlines for NAAQS vary by pollutant and severity of pollution in the region. The federal government has given states authority to implement programs to meet NAAQS. In addition, California has established its own State Ambient Air Quality Standards that are more strict than national standards. See South Coast Air Quality Management District, Federal Air Pollution Law, (last modified July 1, 1996) available at <http://www.aqmd.gov/aqmd/legalaut.htm>.

42. See SCAQMD Regulation XVI (Mobile Source Offset Programs) and Regulation XXV (Intercredit Trading).

43. See SCAQMD Rule 2001(b) (Feb. 14, 1997). Rule 2001(b) will regulate approximately 65% of the nitrogen oxide emissions and 85% of the sulfur oxide emissions from stationary sources in the South Coast Air Basin. See Polesetsky, supra note 40, at 380.

44. Id.

45. The starting allocation for a RECLAIM facility is determined by the following methodology:
quality standards for ozone as measured by the ozone precursors, nitrogen oxide and sulfur oxide. Thus, the amount of pollution allowed by each facility decreases approximately five to eight percent annually. RECLAIM's goal is to reduce nitrogen oxide by seventy-five percent and sulfur oxide by sixty percent by 2003, which will significantly contribute to meeting federal and state air quality standards by 2010. A facility can meet permitted emissions reduction by changing its own processes or through buying others' excess emission credits. By allowing facilities to choose the least expensive method of emissions reduction, RECLAIM is projected to save an average of $57.2 million (in 1987 dollars) annually over existing command and control regulation. Audits performed by the SCAQMD in 1996, 1997, and 1998 indicate that the market in nitrogen oxide and sulfur oxide emissions has resulted in more than $42 million worth of trades since 1994 and is "on track" to meet both 2003 reduction

\[
\text{Starting Allocation} = \sum (A \times B_i) + \text{ERCs} + \text{External Offsets where:}
\]

<table>
<thead>
<tr>
<th>A</th>
<th>= the throughput for each NO\textsubscript{X} and SO\textsubscript{X} source or process unit in the facility for the maximum throughput year from 1989 to 1992 inclusive [historical activity levels].</th>
</tr>
</thead>
<tbody>
<tr>
<td>B\textsubscript{i}</td>
<td>= the applicable starting emission factor for the subject source or process unit as specified in Table 1 or Table 2 of Rule 2002.</td>
</tr>
<tr>
<td>ERC</td>
<td>= emission reduction credit means the amount of credit for emission reductions pursuant to SCAQMD Regulation XIII.</td>
</tr>
<tr>
<td>External Offsets</td>
<td>= an emission reduction determined pursuant to SCAQMD Rule 1309(b)(1) for use to mitigate an emission increase, where the emission reduction is made at a facility other than the facility creating the emission increase.</td>
</tr>
</tbody>
</table>

SCAQMD Rule 2002(c). Year 2000 and 2003 are also used as benchmark years to measure emissions reduction. Year 2000 and 2003 allocations are determined using a similar methodology as the starting allocation. See SCAQMD Rules 2002(d) and 2002(e).

46. See SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, FINAL 1997 AIR QUALITY MANAGEMENT PLAN (1996) available at <http://www.aqmd.gov/aqmp/97aqmp/chapters/m-chap2.html> [hereinafter SCAQMD 1997 Plan]. The South Coast Air Basin, which includes Los Angeles, also violates federal and state air quality standards for carbon monoxide and particulate matter. See id.: RECLAIM, however, does not include emission credits for these air pollutants.


48. See Cone, supra note 47. Under § 182 of the CAA, severe non-attainment areas such as Los Angeles must meet federal standards by November 15, 2010. See SCAQMD 1997 Plan, supra note 46.

49. See Johnson & Pekelney, supra note 40, at 2.
goals.\textsuperscript{50}

2. Additional Emission Trading Rules

a. Mobile Source Emissions Credits

One criticism of RECLAIM and similar emissions trading programs is that they do not include automobile emissions, one of the largest sources of air pollution.\textsuperscript{51} To address this criticism, SCAQMD adopted Regulation XVI, Mobile Source Offset Programs, which incorporates automobile emissions into the pollution market.\textsuperscript{52} Under Regulation XVI, SCAQMD specifies five different methods to create mobile source emissions reduction credits (MSERCs).\textsuperscript{53} Generally, MSERCs are created by retrofitting high emissions vehicles and equipment or by scrapping older, high polluting vehicles and equipment. Because vehicles and equipment emit more than just nitrogen oxide and sulfur oxide, MSERCs are also given for carbon monoxide, VOCs, and particulate matter. Only nitrogen oxide and sulfur oxide MSERCs, however, can be used as trading credits with facilities


\textsuperscript{51} See Perry S. Goldschein, Going Mobile: Emissions Trading Gets a Boost From Mobile Source Emission Reduction Credits, 13 UCLA J. ENVTL. LAW AND POLY 225, 239 (1995) (citing a Wall Street Journal report stating that "[o]ne shortcoming of market-based regulation is that no one has yet devised a comprehensive way to apply it to the biggest polluter of all: automobiles"); Michael C. Naughton, Establishing Interstate Markets for Emissions Trading of Ozone Precursors: The Case of the Northeast Ozone Transport Commission and the Northeast States for Coordinated Air Use Management Emissions Trading Proposals, 3 N.Y.U. ENVTL. L.J. 195, 232 (1994) ("Mobile sources account for 40% and 43% of VOCs and NO [ozone precursors], respectively, on a national level . . . . Mobile sources also account for a large share of VOCs and NO in Los Angeles.").

\textsuperscript{52} See Goldschein, supra note 51, at 253-55 (discussing development of Rule 1610 by SCAQMD).

\textsuperscript{53} See SCAQMD Regulation XVI, Rule 1605, Credits for the Voluntary Repair of On-Road Motor Vehicles Identified Through Remote Sensing Devices (Oct. 11, 1996); Rule 1610, Old-Vehicle Scraping (Jan. 8, 1999); Rule 1612, Credits for Clean On-Road Vehicles (July 10, 1998); Rule 1620, Credits for Clean Off-Road Mobile Equipment (July 10, 1998); Rule 1623, Credits for Clean Lawn and Garden Equipment (May 10, 1996).
participating in RECLAIM.\footnote{See SCAQMD Rule 2001 (Feb. 14, 1997).}

MSERCs for other air pollutants (carbon monoxide, VOCs, and particulate matter) can be used (1) towards the creation of new or modified facilities; (2) as an alternative method of compliance with Regulation XV (Trip Reduction/Indirect Sources), Regulation XI (Source Specific Standards), or Rule 2202 (On Road Motor Vehicle Mitigation Options); or (3) for voluntary retirement as an air quality benefit.\footnote{This is a comprehensive list of additional uses of MSERCs. The uses of MSERCs, however, vary from rule to rule. For a discussion of Rules 1605 to 1623, see supra note 53.} Facilities that do not participate in RECLAIM can also utilize nitrogen oxide and sulfur oxide MSERCs (as well as MSERCs for other pollutants) as a cost-effective alternative to complying with other SCAQMD regulations. Creation and trading of MSERCs is voluntary, unlike participation in RECLAIM.\footnote{See Goldschein, supra note 51 at 253-55.}

\subsection*{b. Area Source Emission Credits}

Another component of air pollution that RECLAIM did not initially capture comes from small, unregulated sources such as household and business water heaters, furnaces, and pumps. While the individual effect of such small sources is negligible (hence their unregulated status\footnote{Rule 2506(c)(2) defines an area source as: any NOx or SOx emitting activity occurring from a non-mobile source within the District which is not subject to District or state permitting or registration requirements and includes but is not limited to processes or equipment not requiring a permit or exempt from written permit pursuant to Rule 219 – Equipment Not Requiring a Written Permit Pursuant to Regulation II) SQAQMD Rule 2506(c)(2) (Apr. 11, 1997).}, their cumulative emissions can be quite significant. For example, nitrogen oxide emitting area sources account for five percent of the South Coast Air Basin's smog contribution.\footnote{See Marla Cone, AQMD Expands Air Pollution Credit Market Smog: Program Will Now Cover Small Sources in Homes and Businesses, Such as Water Heaters, Furnaces, Small Pumps, Motors, L.A. TIMES, Apr. 12, 1997, at B1 (Area sources "contribute 61 tons of nitrogen oxides a day, or about 5% of the region's total contribution to smog.").}

In an effort to decrease these emissions, SCAQMD approved Rule 2506, Area Source Credits for Nitrogen and Sulfur Oxide. Similar to the Mobile Source Program, Rule 2506 allows individuals, owners, and manufacturers of unregulated, non-mobile sources that emit nitrogen oxide and sulfur oxide to earn area source credits (ASCs) by trading in old,
higher-emitting equipment for low-emissions equipment. ASCs can then be sold to other individuals, owners, and manufacturers subject to regulation (creating a market similar to RECLAIM). For example, through the purchase of ASCs, an oil refinery can pay to switch residential water heaters to cleaner-burning fuels and then use the ASCs to meet its own emissions standards. Because Rule 2506 is a voluntary program, the number of potential buyers and sellers participating in this market is unclear.\(^9\) ASCs can also be traded in the RECLAIM market (at a discounted rate) or used as an alternative method of compliance with other SCAQMD regulations, as permitted.\(^60\) Area sources alone, however, remain unregulated by SCAQMD and use of ASCs is strictly voluntary.

The primary goal of RECLAIM (as with any pollution market) is to provide facilities with increased flexibility to meet state and federally mandated emissions reduction requirements while lowering the cost of compliance.\(^61\) The integration of area and mobile source emissions into RECLAIM furthers this goal by providing facilities cost-effective emission reduction credits and increased compliance flexibility. Such flexibility, however, can have significant, though unintended distributive consequences.

II. CBE'S LEGAL CHALLENGE TO EMISSIONS TRADING RULES

A. Early Criticisms of RECLAIM

When SCAQMD first proposed the adoption of RECLAIM, public officials, the business community, and environmentalists voiced numerous concerns. Generally, the criticisms fell into three categories: initial design of the pollution market, effects on economic growth, and effects on environmental quality and health.\(^62\) Based on the latest annual audit, concerns about the

\(^{59}\) See id. at B1 ("Because the new credit program is voluntary, AQMD officials say they cannot estimate how many firms might take advantage of it."); cf. SCAQMD Rule 2001(b) (mandating participation in RECLAIM of all stationary sources emitting four or more tons of nitrogen oxide or sulfur oxide per day and thereby guaranteeing approximately 350 initial market participants in RECLAIM).

\(^{60}\) See SCAQMD Rules 2506(k)(1) and 2506(k)(2) (Apr. 11, 1997) (stating that ASCs can be converted to RECLAIM trading credits at a 10% discounted rate). The discounted rate was a compromise with environmentalists to ensure a net benefit in air quality. See Cone, supra note 58 at B1.

\(^{61}\) See SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, AGENDA No.37, SECOND ANNUAL RECLAIM PROGRAM AUDIT REPORT (Feb. 14, 1997).

\(^{62}\) See Marla Cone, Activists Urge Rejection of Pollution Credit Plan, L.A. TIMES, Sept. 9, 1993, at 23; Marla Cone, Anti-Smog Plan Praised, Jeered as Hearings Begin,
design of the pollution market and its effects on jobs have not materialized. RECLAIM's trading market is “active and thriving” resulting in a total of 1,253 trades of more than 298,000 tons of nitrogen oxide and sulfur oxide as of the end of 1997.\textsuperscript{63} Moreover, RECLAIM has had minimal impacts on the region’s economy with only 1.32 percent of jobs at RECLAIM facilities lost due to the trading market in 1997.\textsuperscript{64}

Effects on environmental quality and health, however, are less clear. From the outset, environmentalists were concerned about whether actual pollution reduction could be achieved and whether pollution hot spots would form around facilities that choose to buy credits rather than reduce their own emissions.\textsuperscript{65} RECLAIM has not completely addressed these issues. Based on audit results, overall environmental quality is improving. RECLAIM is on track to meet the 2003 emissions reduction requirement, with a compliance rate ranging from eighty-five percent to ninety-four percent for each of the first four years.\textsuperscript{66} In fact, ozone concentrations are at the lowest point in four decades.\textsuperscript{67}

Still, the localized environmental health impacts of RECLAIM are not known. Specifically, audits required by RECLAIM do not measure the distributional impacts of pollution in relation to the environmental health of Los Angeles residents. Instead, the required audits look at per capita exposure to air pollution, emissions trends, and disproportionate impacts of facilities participating in RECLAIM versus facilities not in RECLAIM.\textsuperscript{68} Consequently, no data is being collected on the exposure of communities surrounding sources purchasing credits versus communities where credits are either sold or not purchased. Clearly, emission credits allow pollution to be relocated from one community to another, which changes, or could change, the distribution of accompanying environmental risk. Audits for other SCAQMD emission trading rules are even less comprehensive.

\begin{itemize}
  \item L.A. TIMES, Sept. 10, 1993, at 3; Cone, supra note 47 at A1; Marla Cone, AQMD Plan for Blue Skies Turns Hazy Smog: Agency struggles to save the proposal that has been criticized by business and environmentalists, L.A. TIMES, Aug. 21, 1993, at 1; Marla Cone, Key Southland Firms Assail Pollution Credit Proposal, L.A. TIMES, Aug. 17, 1993, at 1.
  \item See SCAQMD 1997 COMPLIANCE REPORT, supra note 50, at 2-3; SCAQMD SECOND ANNUAL AUDIT REPORT, supra note 50, at 4-1, 4-7.
  \item See SCAQMD 1997 COMPLIANCE REPORT, supra note 50, at 6-1.
  \item See SCAQMD Second ANNUAL AUDIT, supra note 50.
  \item See SCAQMD 1997 COMPLIANCE REPORT, supra note 50, at 5-2.
  \item See SCAQMD SECOND ANNUAL AUDIT REPORT, supra note 50, at 8-2.
  \item See SCAQMD Rule 2015(b)(1)(B), (b)(1)(J), and (b)(3)(H) (Feb. 14, 1997).
\end{itemize}
For instance, some mobile and area source credits audits merely require economic efficiency evaluations. Others require only mandatory access to records upon request. 69

B. CBE's Title VI Challenge

From RECLAIM's inception, CBE was critical of the ability of market mechanisms to fairly distribute environmental quality. 70 Of particular concern was the potential development of pollution hot spots. Because stationary sources are located predominately in low-income and minority communities, environmental justice advocates believe that pollution hot spots would tend to disproportionately affect those communities. 71 NEJAC, the EPA's environmental advisory committee, was also concerned about the distributional effect of emissions trading. In 1995, NEJAC notified the EPA of its concerns and formed a special subcommittee to study this issue. 72 Neither the EPA nor SCAQMD, however, formally responded to CBE or NEJAC concerns until CBE took legal action.

On July 23, 1997, CBE filed an administrative complaint with the EPA against SCAQMD and the California Air Resources Board (CARB). 73 In the complaint, CBE contends that mobile source emissions trading creates toxic hot spots that disproportionately impact low-income minority residents in the South Bay area of Los Angeles in violation of Title VI of the Civil Rights Act of 1964. 74

1. Title VI of the Civil Rights Act of 1964

All recipients of federal funds must comply with Title VI of

69. See e.g., SCAQMD Rule 2506(n) (Apr. 11, 1997); SCAQMD Rule 1610(m) (Jan. 8, 1999).


71. See Mohai and Bryant, supra note 22, at 12-16 (finding that race and income are significant factors in the distribution of environmental hazards from an analysis of 15 empirical studies of the distribution of environmental hazards, 11 of which focused on air pollution).


73. See Complaint, CBE v. SCAQMD, supra note 9; Cone, supra note 1. CBE also simultaneously filed federal lawsuits against four oil companies participating in mobile source emissions trading for CAA violations. See supra note 9. CARB is the state agency with general oversight over all California air districts including the SCAQMD. As the recipient of federal funds from the EPA under § 105 of the CAA, 42 U.S.C. § 7405, both SCAQMD and CARB must to comply with Title VI requirements.

74. See Complaint, CBE v. SCAQMD, supra note 9, ¶¶ 5-6.
the Civil Rights Act of 1964. Section 601 of Title VI states that "[n]o person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Section 602 of Title VI authorizes and directs federal agencies to enact "rules, regulations, or orders of general applicability" to achieve the statute's objectives. Accordingly, the EPA has promulgated regulations implementing Title VI, which provide that "a recipient shall not use criteria or methods of administering its program, which have the effect of subjecting individuals to discrimination because of their race, color, national origin, or sex."

Discrimination claims brought under Title VI can be proven under two standards: intentional discrimination under section 601 or disparate impact under section 602. The intentional discrimination standard is equivalent to the analysis of a violation of the Equal Protection Clause of the Fourteenth Amendment. Under the disparate impact standard, a plaintiff alleging a violation of a federal agency's Title VI implementing regulations need only make a prima facie showing that the alleged conduct has a disparate impact regardless of intent. In its administrative complaint, CBE alleges violations of EPA's Title VI implementing regulations under Section 602. More specifically, CBE alleges that five companies, located in predominantly Latino communities, have purchased pollution credits pursuant to Rules 1610 and 1142, thereby increasing their pollution emissions and causing a disparate impact on the community.

75. 42 U.S.C.A. § 2000d.
77. 40 C.F.R. § 7.35(b).
79. See Alexander v. Choate, 469 U.S. 287, 293 (1985). Legal action under Section 601 will likely fail as attempts by environmental justice advocates to allege violations of the Equal Protection Clause of the Fourteenth Amendment have been unsuccessful precisely because of the discriminatory intent requirement. See James H. Colopy, Note, The Road Less Traveled: Pursuing Environmental Justice Through Title VI of the Civil Rights Act of 1964, 13 STAN. ENVTL. L.J. 125, 145-152 (1994).
2. **SCAQMD Rule 1610 and Rule 1142**

CBE's complaint focuses on the use of MSERCS under Rule 1610 and Rule 1142. Rule 1610 allows persons or facilities to scrap pre-1981 passenger cars and light duty trucks in exchange for VOC, nitrogen oxide, carbon monoxide, and particulate matter MSERCS.\(^8\) MSERCS can then be used as an alternative method of compliance with rules under Regulation XI, Source Specific Standards.

Rule 1142, one rule under Regulation XI, requires all marine tank vessels to limit VOCs\(^8\) that are released during "loading, lightering, ballasting and housekeeping events" to two pounds of VOCs per 1000 barrels.\(^8\) If this threshold emissions level is exceeded, Rule 1142 requires a ninety-five percent reduction of the total VOC emissions.\(^8\) To meet this strict standard, marine terminal operations have installed vapor recovery systems.\(^8\) Rule 1610, however, allows the purchase of MSERCS as an alternative to expensive vapor recovery systems. Of the five companies that have purchased the vast majority of MSERCS under Rule 1610, "four operate bulk oil unloading facilities located at marine terminals in predominately Latino communities."\(^8\) CBE alleges that each facility is causing a disparate impact to the surrounding Latino communities by buying MSERCS generated under Rule 1610 to meet its required ninety-five percent VOC emissions reduction under Rule 1142.\(^8\) Instead of reducing their own VOC emissions by installing vapor recovery systems, each

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81. See SCAQMD Rule 1610(a) and 1610(b)(3) (Jan. 8, 1999).
82. Rule 1142 defines VOCs as "any chemical compound which contains the element carbon, except methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds." SCAQMD Rule 1142(b)(14) (July 19, 1991).
83. See SCAQMD Rules 1142(a) and 1142(c)(1)(B)(i) (July 19, 1991). For example, most VOC emissions occur when marine tank vessels are loaded with oil. When oil is loaded into a tanker, the oil pushes out the air inside the tanker. This air, which has been sitting inside the tanker, is loaded with VOCs that are emitted into the atmosphere.
85. See Scott Kuhn, *How Market-Based Regulations Can Create Environmental Injustice: Environmental Justice, Pollution Trading and Community-Based Lawyering in Los Angeles 22* ("Marine vapor recovery equipment can reduce emissions by 95 percent and has been installed in the San Francisco Bay Area, Louisiana, New Jersey, and other locations.") (on file with author). Marine vapor recovery equipment is similar to gasoline vapor recovery equipment on fuel pumps required at every gas station in California.
86. See Complaint, CBE v. SCAQMD, supra note 9, ¶ 6.
87. See id. at ¶ 25. Oil companies want to avoid triggering the requirement for a vapor recovery system because installation costs would begin at approximately $2 million dollars. See *Which Way, L.A.?* supra note 70.
marine terminal purchased enough MSERCs from scrapping old cars to attain the ninety-five percent reduction. Consequently, the amount of VOC emissions at these terminals is actually increasing, while the ninety-five percent reduction is taking place elsewhere in the Air Basin.

More importantly, VOC emissions by old, high-polluting vehicles that were once dispersed throughout the Air Basin are now concentrated in the Latino communities surrounding these marine terminals. Thus, the predominately Latino communities that live near the marine terminals are subjected to higher levels of VOCs than would be allowed if MSERCs did not exist. In addition, CBE alleges that SCAQMD's approval of multiple MSERC trades in the same area exacerbates existing disproportionate adverse environmental conditions, causing an additional cumulative disparate racial impact to the affected Latino communities.


89. VOCs are comprised both of toxic and non-toxic constituents. Emissions of VOCs can have local and regional health effects. On a local level, VOC emissions from a stationary source could impact the surrounding community's health as toxic air contaminants. For example, loading of gasoline by an oil tanker releases toxic air contaminants such as benzene, a known human carcinogen. See Kuhn, supra note 85, at 21. On a regional level, once released into the atmosphere VOCs undergo a complex chemical reaction that contributes to ground level ozone, one of the main components of smog. The negative health effects of smog can include increases in asthma, bronchitis, and premature death from respiratory and cardiac disease. See Marla Cone, Costly U.S. Smog Curbs Draw Scant Opposition Pollution: Used to Fierce Attacks Elsewhere, EPA Chief Finds More Acceptance in California, L.A. TIMES, Mar. 14, 1997, at A3.

90. CBE also makes three additional claims. The first one alleges illegal disparate racial impacts from miscalculation of current emissions levels by SCAQMD, thus allowing more VOC emissions than reported. CBE obtained significant proof of this allegation when a whistleblower from SCAQMD recently revealed that car scrapping was not actually meeting the pollution savings estimated by formulas in Rule 1610. Because Rule 1610 car scrapping requirements were not being implemented properly, the credits were overvalued in that they actually reduced less pollutants than stated. This in turn allowed more emissions into the atmosphere than indicated by the credits. See Marla Cone, Smog Panel to Overhaul Car Buyback Program, L.A. TIMES, April 25, 1998, at A25; Marc Cooper, Smoke Screen, NEW TIMES LOS ANGELES, February 5, 1998. For example, based on information obtained from Unocal, which operates one of the marine terminals in question, CBE estimates that Unocal's vapor sources are 12 to 1247 times higher than what was reported in Unocal's Rule 1142/1610 compliance forms. See Letter from Richard Toshiyuki Drury, Legal Director, Communities for a Better Environment, to United States Environmental Protection Agency Region IX (Oct. 6, 1998) (on file with author); see also Letter from Richard Toshiyuki Drury, Legal Director, Communities for a Better Environment, to Ann Goode, Environmental Protection Agency, Office of General Counsel (Nov. 23, 1998) (on file with author). This revelation has caused increased scrutiny by the California EPA, CARB, and the
C. EPA's Response and Future Action

After a preliminary investigation, EPA accepted CBE's Title VI complaint for full investigation on October 9, 1997, on the basis of SCAQMD actions under Rule 1610 "occurring in the 180 day period prior to (and after) the filing of the Complaint." EPA regulations implementing Title VI require the EPA Office of Civil Rights to make its preliminary findings and recommendations to the recipient of federal funds, award official, and assistant Attorney General for Civil Rights within 180 days. To date, EPA has yet to issue any preliminary findings or recommendations in response to CBE's complaint.

As part of its preliminary findings, the EPA must determine if mobile source emissions trading under Rule 1610 does, in fact, create a disparate impact under Title VI as alleged in CBE's complaint. The Recipient then has fifty days to reply before the EPA issues a formal written determination. If EPA finds no violation, then the complaint is dismissed. If non-compliance is found, then the recipient has ten days to comply voluntarily through informal means, or EPA may terminate or refuse to


The second allegation asserts that SCAQMD, by ignoring evidence of disparate racial impacts in the administrative record, intentionally discriminated based on race, violating the Equal Protection Clause of the Fourteenth Amendment, Title VI, and 42 U.S.C. § 1983. Finally, the last allegation asserts that EPA approval of Rule 1610 would violate Title VI and EO 12,898. SCAQMD Rule 1610 has been submitted to the EPA by SCAQMD and CARB for approval and incorporation into California's State Implementation Plan (SIP). A SIP specifies how a state will achieve mandated air quality standards set by the federal CAA. For the purposes of this Comment, I do not analyze these last three claims because they do not directly challenge the potential disparate impact of emissions trading.

91. Letter from Rafael DeLeon, Acting Director, United States Environmental Protection Agency Office of Civil Rights, to Peter Greenwald, General Counsel, South Coast Air Quality Management District, and Kathleen Walsh, Office of Legal Affairs, California Air Resources Board 2 (Oct. 9, 1997) (on file with author).

92. See 40 C.F.R. § 7.115(c)(1).

93. Although there have been media reports that preliminary findings and recommendations to CBE's Title VI complaint would be finished by the end of Summer 1998, nothing has been issued as of the printing of this Comment, some 570 days after the complaint was accepted by the EPA. See Cooper, Lohmann's Legacy, supra note 90. Furthermore, EPA has yet to meet this 180-day deadline in any other case.

94. See 40 C.F.R. § 7.115(d)(2).
award or continue financial assistance.95

D. Significance of CBE's Challenge

While CBE's actions have been portrayed as an all out attack against emissions trading,96 in reality the organization makes a very narrow critique of specific trading rules. CBE's complaint only disputes the incorporation of MSERCs created under Rule 1610 into a stationary source market via Rule 1142. Even if use of Rule 1610 were stopped by CBE, MSERCs could still be obtained through four other rules in effect.97 These MSERCs could then be used as alternative compliance methods for Rule 1142 as well as approximately seventy other different types of sources regulated by SCAQMD.98 Moreover, CBE's complaint does not challenge emissions trading within RECLAIM, nor does CBE directly dispute the validity of the pollution markets in general.

Of course, the scope of CBE's administrative complaint is limited by procedural requirements of Title VI as well as political and legal constraints.99 CBE's narrow challenge of emissions trading has a greater chance of success than a broader claim and could provide an important stepping stone for further attack. Although CBE's challenge (if successful) would not eliminate pollution markets, CBE still believes that stopping VOC mobile source emissions trading will have an environmentally beneficial health effect in the surrounding community.100 Eliminating disparate impacts of VOC emissions are crucial because VOCs can be toxic air contaminants at the local level.

Response to CBE's Title VI complaint has been remarkable, particularly given that EPA has yet to issue a decision on the merits. Filing of CBE's complaint has spurred SCAQMD into adopting and implementing a ten-point environmental justice

95. See 40 C.F.R. § 7.130(e).
96. See Cone, supra note 1 at A1; Environmental Justice: Group Files Civil Rights Claim Against California Pollution Trading Program, DAILY ENV'T REP., July 28, 1997; Robert Stevens, Civil Rights Laws Are Cited in Challenge To California Pollution-Control Tactics, WALL ST. J., July 24, 1997; Wood, supra note 1.
97. See SCAQMD Rule 1605 (Oct. 11, 1996); Rule 1612 (July 10, 1998); Rule 1620 (July 10, 1998); Rule 1623 (May 10, 1996).
98. See SCAQMD Regulation XI, Rules 1101-86.
99. For example, a Title VI administrative complaint must be filed with the EPA within 180 days of the alleged discriminatory action. This statutory requirement constrains the ability of CBE to allege disparate impacts that occurred outside of this time limit. In addition, the time limit creates another concern in considering which actions to allege in the complaint because a large amount of demographic data is required to support a disparate impact claim.
100. See Telephone Interview with Scott Kuhn, Staff Attorney, Communities for a Better Environment (Dec. 9, 1997).
initiative that calls for an extensive study of toxic hot spots, increased community involvement, and review of SCAQMD's toxic air contaminant rules. SCAQMD also formed an Environmental Justice Task Force in January 1998 to examine emissions trading programs and other environmental justice issues.

On the federal level, NEJAC passed a resolution urging the EPA and SCAQMD to carefully analyze the potential that emissions trading rules would create toxic hot spots in low-income or minority communities prior to approving the program. EPA is expected to release its federal Urban Air Toxics Initiative and Guidance on Toxic Situations, which will include discussion of emissions trading programs. The Clinton Administration has also announced plans to hold a series of local symposiums on emissions trading, the first of which will be held in Los Angeles. As to CBE's complaint, EPA officials are reported to be deeply divided over potential conflicts between market-based incentives and environmental justice.

III. ARE POLLUTION MARKETS INHERENTLY DISCRIMINATORY?

This Comment now steps back from CBE's challenge of specific emission trading rules to consider a disparate impact analysis of the entire emissions trading system. Given the publicity surrounding the CBE challenge, a comprehensive environmental justice review of emissions trading markets such as RECLAIM cannot be far behind. The issues raised by CBE imply that the emissions trading concept could be inherently flawed. Specifically, the question of whether pollution markets are per se discriminatory must be addressed. Clearly, if the market is inherently discriminatory, examining potential disparate impacts from specific transactions, such as CBE's Title VI complaint, becomes unnecessary. Thus, this Part broadens CBE's critique by ana-

102. See SCAQMD 1997 ANNUAL REPORT, supra note 50.
104. See Environmental Protection Agency, EPA BACKS AIR-CREDIT TRADING DESPITE ENVIRONMENTAL JUSTICE CLAIMS, INSIDE CAL/EPA, June 12, 1998, at 1, 8.
105. See id. at 8.
106. See Cooper, LOHMANN'S LEGACY, supra note 90.
lyzing a theoretical Title VI challenge to the entire concept of emission markets.

A Title VI analysis of pollution markets must start by defining the meaning of disparate impact in the emissions trading context. A Title VI analysis of pollution markets must start by defining the meaning of disparate impact in the emissions trading context. How are disparate impacts measured in a market system? Once a disparate impact standard is established, the analysis then moves to the market itself. Do pollution markets discriminate against minority communities a \textit{a priori}? To determine if emissions trading is \textit{per se} discriminatory, the analysis must look both at structural characteristics of pollution markets and extrinsic factors to such markets. Structural factors include the type of pollution impact the market was designed to address and the types of sources regulated in such a market. Extrinsic factors include the demographics of pollution source locations and decisionmaking processes used by market participants to determine emissions trades.

\subsection*{A. Disparate Impact Analysis of Emissions Trading}

The EPA has no set guidelines for determining what consti-

\footnote{107. Title VI requires only a prima facie showing of a disparate impact. \textit{See supra} Part II.B.1. The elements of a Title VI disparate impact claim, including the burden shifting framework, derive from the analysis of cases decided under Title VII disparate impact law. \textit{See New York Ruban League v. New York}, 71 F.3d 1031 (2d Cir. 1995). This Comment assumes that a Title VI disparate impact standard will be used by regulatory agencies and courts to determine discrimination to low-income and minority communities in the context of pollution markets as EO 12,898 specifically directs federal agencies to use Title VI in accomplishing environmental justice goals. \textit{See supra} Part I.B. The disparate impact standard is the most promising legal theory for environmental justice advocates because it does not require discriminatory intent, lowering the burden of proof. \textit{See supra} note 79.

While the use of the disparate impact standard is allowed when filing an administrative complaint with the EPA, it is unclear whether private parties can sue in federal court on a disparate impact theory of liability. Nevertheless, courts have implied a private right of action to implement other agencies' Title VI implementing regulations. \textit{See U.S. DEPARTMENT OF JUSTICE CIVIL RIGHTS DIVISION, TITLE VI LEGAL MANUAL} 53-59 (Sept. 1998); Chester Residents Concerned for Quality Living v. Self, 132 F.3d 925, 936-37 (1997). The Third Circuit recently held that § 602 of Title VI allows private plaintiffs to bring suit on a disparate impact theory without having to show discriminatory intent or exhaust administrative remedies by filing an administrative complaint with the EPA. \textit{See Chester}, 132 F.3d at 937. The Supreme Court subsequently granted certiorari in \textit{Chester}, but the Court later dismissed the case as moot because the challenged permit was denied in the interim. \textit{See v. Chester Residents Concerned for Quality Living, __ U.S. __}, 119 S.Ct.22 (1998). In dismissing the case, the Court also vacated the opinion by the Third Circuit. \textit{Id.} Consequently, whether an implied private right of action using a disparate impact standard under § 602 of Title VI exists remains unresolved. \textit{See The South Bronx Coalition for Clean Air v. Conroy}, 20 F. Supp.2d 565 at 572 (S.D.N.Y. 1998); Julie Brienza, \textit{High Court Dismisses Appeal Over Private Lawsuits in Environmental Racism Case}, TRIAL, Sept. 1998, \textit{available in WESTLAW} 34-SEP Trial 99.
tutes a prima facie disparate impact under Title VI. Disparate impact seems to be determined on a case-by-case basis by the reviewing agency or court. Thus, EPA's investigation of CBE's complaint will set a precedent for disparate impact analyses of emissions trading programs specifically and market based approaches more generally.

108. Forty nine Title VI administrative complaints have been filed with the EPA since EO 12,898 directed use of Title VI to accomplish environmental justice goals. There are 15 complaints under active investigation and 6 complaints under consideration for acceptance with EPA. See John Chambers, The Supreme Court has Agreed to Take up an Issue That Has Stymied Regulators and Judges: Waste Disposal Facilities Planned for Construction of Minority Areas, NAT'L L.J., June 22, 1998, at B6. Yet, only recently has the EPA issued any guidance for investigations of Title VI administrative complaints. See U.S. ENVIRONMENTAL PROTECTION AGENCY, INTERIM GUIDANCE FOR INVESTIGATING TITLE VI ADMINISTRATIVE COMPLAINTS CHALLENGING PERMITS (Feb. 1998) [hereinafter EPA, INTERIM GUIDANCE]. The guidance emphasizes that "[e]valuations of disparate impact allegations should be based upon the facts and totality of the circumstances that each case presents," and that there is no "single technique for analyzing and evaluating disparate impact allegations." Id. at 9. Nonetheless, EPA provides five basic steps to any disparate impact analysis: (1) identify the affected population; (2) determine the demographics of the affected population; (3) determine the universe(s) of facilities and total affected population(s); (4) conduct a disparate impact analysis; and (5) determine the significance of disparity. Id. at 9-11. This general framework for analysis, however, does not establish any criteria for finding a disparate impact. EPA's guidance is purposely general because of the fact-intensive nature of a disparate impact analysis, but has caused criticism by many affected parties. See, e.g., Letter from Frank V. Bifera, General Counsel, New York State Department of Environmental Conservation, to Ann E. Goode, Director, U.S. Environmental Protection Agency Office of Civil Rights 3 (May 6, 1998) (on file with author). In addition, this guidance only addresses Title VI investigations of challenged permits, not enforcement and other issues such as emissions trading markets under the CAA.

Moreover, EPA has not completed final disparate impact analyses for any of the complaints currently under investigation. See Keith N. Cole and Carita T. Shanklin, Environmental Permits as Civil Rights Violations: Three Recent Developments in a Rapidly Emerging Area of Law, THE METROPOLITAN CORP. COUNS., July 1998. Only one preliminary Title VI investigation has been completed. In the Draft Demographic Information for the Proposed Shintech Facility in Louisiana, the EPA reiterated the fact-based nature of disparate impact analysis. See U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF CIVIL RIGHTS, TITLE VI ADMINISTRATIVE COMPLAINT RE: LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY/PERMIT FOR PROPOSED SHINTECH FACILITY, DRAFT REVISED DEMOGRAPHIC INFORMATION 4 (April 1998) available at http://www.epa.gov/region6/shintech/apr98>. Thus, this first draft demographic analysis sheds little light on what EPA's Title VI disparate impact standard would be for emissions trading markets.

Similarly, case law interpreting disparate impact under other agencies' Title VI implementing regulations do not provide much direction. Courts that have found a prima facie disparate impact under Title VI generally have relied on statistical evidence. See, e.g., Guardians Ass'n v. Civil Service Comm'n of City of New York, 633 F.2d 232, 239-42 (2d Cir. 1980); Bryan v. Koch, 627 F.2d 612, 617 (2d Cir. 1980); Coalition of Concerned Citizens Against I-670 v. Damian, 608 F. Supp. 110, 127 (S.D. Ohio 1984). Neither the governments nor the courts, however, have identified any particular statistical methodology for use in Title VI disparate impact analysis.
Emissions trading presents special challenges to performing an accurate disparate impact analysis because of the dynamic nature of air pollution emissions in a market system. A disparate impact analysis of emissions trading must carefully assess multiple transactions between numerous pollution sources occurring over a period of time. Historically, disparate impact environmental justice investigations under Title VI analyzed static problems such as hazardous waste facility sitings, exclusion from participation in decisionmaking processes, or denial of environmental benefits. These types of alleged discriminatory actions are fixed in time with relatively constant exposures to pollutants once sources are sited, allowing direct comparison of impacts between affected and unaffected areas.

In contrast, exposure to air pollution from emissions trading varies with each trading period. Consequently, potential disparate impacts also vary with each trading period. A pollution source could choose to buy credits one year, install new abatement technology the next year, and create credits the year after. Each of these choices will change the distribution of air pollution emissions and hence the potential disparate effects. If twenty sources are changing their pollution abatement methods and trading simultaneously, an accurate assessment must compare the effects of each trade with the others. Demographic profiles of all communities surrounding pollution sources selling and buying credits must be assembled and compared to determine if emissions are truly being reallocated in a disproportionate manner.

The complexity of analyzing dynamic market actions de-
creases the ability to assess disparate impacts in a timely manner, if at all.

In addition, EPA's Title VI implementing regulations narrowly define disparate impact. Title VI does not address historic discrimination. Under EPA regulations, EPA is only required to investigate alleged discriminatory actions filed within 180 days of their occurrence. Thus, alleged discriminatory actions occurring outside this six month time limit would be rejected as untimely by EPA, unless such actions are alleged as part of a pattern of discrimination. This statutory time limit has particular ramifications for a disparate impact analysis of emissions trading because it creates an artificial time barrier on market actions. Local emissions within a pollution market are in a constant state of flux from trading. Thus, investigating any number of trades at a fixed point in time might not reveal the true distributional effect of emissions trading. What could be deemed a disparate impact within the 180 day investigatory window, might not be disparate after another 180 days of trading.

B. Structural Market Factors

Whatever standard EPA adopts to measure disparate impact, the analysis then moves to the market, itself. EPA's regulations implementing Title VI state that "[a] recipient shall not use criteria or methods of administering its program which have the effect of subjecting individuals to discrimination." If environmental justice advocates can prove the market structure is per se discriminatory, making a prima facie case of disparate impact under Title VI will be much easier. In analyzing market structure, the first factor to examine is the type of pollution that the market is designed to regulate.

112. See 40 C.F.R. § 7.120(b)(2).
113. There is case law to suggest that each trade could be viewed as a continuing violation, and as long as one trade fell within the 180 day limit, a Title VI claim challenging emission trading could be timely. See Havens Realty Corp. v. Coleman, 455 U.S. 363, 380-81 (1982) (holding that "where a plaintiff, pursuant to the Fair Housing Act, challenges not just one incident of conduct violative of the Act, but an unlawful practice that continues into the limitations period, the complaint is timely when it is filed within 180 days of the last asserted occurrence of that practice.").
114. See 40 C.F.R. § 7.35(b).
1. Local v. Regional Air Pollution Impacts

Pollution markets are designed to reduce pollution at the regional level (for example, over the four-county South Coast Air Basin). This design reflects both market structure requirements and the environmental science of air pollution abatement. First, a market requires certain conditions to be successful. These conditions include a critical mass of market participants, low transaction costs, market certainty, and accurate monitoring and enforcement. The particularly critical first condition can be easily accommodated by creating a pollution market covering a large geographical region. The larger the market, the more potential market participants can be included. A critical mass of market participants is needed to ensure a continuous supply of buyers and sellers.

Second, smog itself is regional in nature. For example, formation of ground level ozone, one of the main components of smog, occurs after specific pollutants such as nitrogen oxide and VOCs are released into the atmosphere where they react with sunlight as well as each other. This chemical reaction does not occur in a localized manner (that is, in the specific neighborhood the pollutant was released), but rather throughout the atmosphere on a regional level. Thus, a market for ozone pollutants need only reduce nitrogen oxide and VOC emissions on the regional level to reduce resulting smog. The localized impact of pollutants is not considered in the market because it does not affect the regional formation of ozone.

115. See Polesetsky, supra note 40, at 371-75 (summarizing the reasons that these four elements are necessary for a successful market program).

116. See Robert W. Hahn and Roger G. Noll, Barriers to Implementing Tradable Air Pollution Permits: Problems of Regulatory Interactions, 1 YALE J. ON REG. 63, 66 (1983) ("The feasibility of a permits market is in part an empirical issue that turns on the number, geographic distribution, and abatement cost functions of the sources of pollution in a region, on the technical relationship between emissions and pollution, and on the specific legal and institutional features of the permits market.").

117. See Polesetsky, supra note 40, at 372 ("Without enough participants, a competitive market will not develop.").


119. See Telephone Interview with Jeff Wehling, Senior Air Quality Specialist, Environmental Science Associates (Nov. 10, 1997).

120. See id.

121. See James T.B. Tripp and Daniel J. Dudek, Institutional Guidelines For De-
In contrast, the environmental justice critique focuses solely on the local impacts of air pollutants. Since environmental justice advocates are concerned with the disproportionate impacts on low-income and minority communities specifically, they do not address regional impacts because regional impacts affect numerous communities. While smog affects the entire South Coast Air Basin as opposed to a specific community, air pollutants causing smog have both a regional and local impact. While VOCs and nitrogen oxide only contribute to smog on a regional level, they are also toxic on a localized level. This brings environmental justice and marketable permits advocates to a head.

Market supporters argue that emissions trading creates health benefits for all communities within the market by reducing the overall amount of air pollutant emissions that contribute to ozone formation, which leads to smog. Negative health effects from smog can include asthma, bronchitis, and premature death from respiratory and cardiac disease. Environmental justice supporters argue that the health of specific local communities cannot be sacrificed for overall regional health benefits. Even though smog levels might be reduced, benefiting everyone, including low-income and minority communities, this benefit does not offset the significant local health impacts to specific people. For example, SCAQMD admits that "air toxic health risk

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signing Successful Transferable Rights Programs, 6 YALE J. ON REG. 369, 376 (1989) (Pollution markets "cannot address problems caused by specific sources with localized impact.").

122. For a discussion of the regional and local effects of VOC emissions, see supra note 89.

123. See Cone, supra note 89.

124. Localized health impacts from air pollutants vary widely. For example, nitrogen oxide "irritates the eyes and lungs, and lowers resistance to respiratory illness." Evelyn B. Kelly, Oh, Say, Can You NOT See: The Top-Five Air Pollutants, 21 CURRENT HEALTH 2 16 (1994). Emissions, such as VOCs, can also have a toxic effect because some of their components are carcinogens. See supra note 89, at 21. While such toxic air contaminants are regulated separately at the federal, state and local level, existing regulation was not designed to accommodate the dynamic nature of emissions trading. For example, SCAQMD's main air toxic control measure, SCAQMD Rule 1402, Control of Toxic Air Contaminants From Existing Sources, requires certain facilities generating significant health risk to implement risk reduction plans. See SCAQMD Rule 1402 (Apr. 8, 1994). Preparing and approving a risk reduction plan, however, is a lengthy process. Rule 1402 allows up to five years for plan implementation. Due to the dynamic nature of emissions trading, the level of air toxics emitted from a stationary source could vary widely with each trade and may or may not trigger the significance thresholds of Rule 1402. Emissions trading of air toxics raise a host of issues that are outside the scope of this Comment. The discussion here is only meant to point out some general issues concerning potential local health impacts of toxic air contaminants.
is primarily caused by... VOC emissions." Environmental justice advocates argue that these localized impacts should not be ignored by market systems.

2. Consequences of Pollution Sources

The next structural factor to analyze in determining whether pollution markets are per se discriminatory is the type of source regulated by the market. CBE alleges that one mobile source emissions trading rule, Rule 1610, is inherently unfair because it allows automobile emissions previously dispersed over an entire air basin to be concentrated in a specific community. This redistribution of emissions, however, is actionable under Title VI only if the emissions are being disproportionately concentrated in predominantly minority communities. In addition, the redistributive effect of trading has different results when other pollution sources are considered. This section goes beyond CBE's critique of one specific mobile source trading rule to consider the potential disparate effects of the primary pollution market (stationary sources) the mobile source market, and the area source market.

a. Pure Stationary Source Market

At its inception, RECLAIM was designed to include only stationary sources emitting four or more tons of nitrogen oxide or sulfur oxide. In a pure stationary source system, localized air pollution effects are relocated from one community to another. These transfers of pollutants would be considered disparate under Title VI if the trend of relocation tends to impact a certain racial group disproportionately in comparison to all other groups—for example, if factories in a predominately African American community consistently bought emission credits.

But if undesirable land uses are already located predomi-

125. SCAQMD SECOND ANNUAL AUDIT REPORT, supra note 50, at 8-8.
126. See Has Politics Ruined the SO2 Auctions?, TEX. ENVTL. INSIDER, Apr. 24, 1996 (Pollution trading markets "ignore regional and localized pollution concerns.").
127. Preliminary studies performed by Manuel Pastor indicate that "minorities in Los Angeles County faced twice the exposure to hazardous waste facilities as did whites" even when controlled for income, zoning, occupations and other factors. His research on air pollution specifically suggests a similar disparate pattern for exposure to emissions. See Manuel Pastor Jr., INSIGHT Environmental Equity Makes Business Sense, L.A. TIMES, Nov. 2, 1997, at D4; see generally J. Tom Boer, Manuel Pastor, Jr., James L. Sadd, and Lori D. Snyder, Is There Environmental Racism? The Demographics of Hazardous Waste in Los Angeles County, 78 SOC. SCI. Q. 794 (Dec. 1997).
nately in minority communities, disparate effects on minority communities from trading seem unlikely.\(^{128}\) Based on current demographic data of communities surrounding stationary sources, one could assume that disparate impacts from trading to communities of color as a whole would be low. Most emissions relocations would not be from a white to a minority community, but rather from a minority to a minority community. While it is possible that emission relocations from one minority community to another could have a disparate impact, the fact that the emissions are only redistributed among already disadvantaged communities would be evidence that the trading program itself is not the cause. Although certainly if emissions from all communities were relocated only to Asian American communities, for example, a disparate impact could be proven.

The location of a stationary source in a minority community, however, does not indicate an intrinsic disparity in the pollution market. Emissions trading does not affect the location of sources. Once stationary sources are disproportionately sited in minority communities, then these communities will be impacted at a greater rate than other communities. Thus, one could argue that emissions trading in a stationary source market reflects a current disparity in facility sittings rather than creating disparate impacts of its own. Emissions trading cannot change the fact that stationary sources are located in the minority communities.

b. Hybrid Mobile and Stationary Source Market

In contrast, the incorporation of mobile source credits in a stationary source trading program will change the localized pollution distribution. Because mobile sources can move in and out of different communities, they do not have a lasting localized impact on any one community. Thus, the relocation of mobile emissions to a fixed geographical area will essentially concentrate pollutants formerly impacting all communities in the community surrounding the stationary source.\(^{129}\)

Still, a Title VI disparate impact from emissions trading can only be proven if one community is impacted disproportionately


\(^{129}\) This assumes that cars scrapped for MSERCs are driven throughout the entire Air Basin and not solely within a particular community. Still, the impacts from dispersed automobile emissions are much less concentrated than from a fixed continuous emission point. Imagine a car driving by your house every hour versus idling in front of your house all day.
in comparison to all other communities. For example, to investigate CBE's allegations of illegal disparate impact, the EPA is analyzing over 30 trades approved by SCAQMD under Rule 1610, even though CBE's complaint names only seven trades by four companies\textsuperscript{130} over a four year period.\textsuperscript{131} If recent trades by other companies are found to similarly impact white, Asian, or Black communities at comparable rates, then mobile to stationary source trading may not be violating Title VI.\textsuperscript{132} Nevertheless, from a structural perspective, MSERCs have an inherently higher likelihood of disparate impact than a pure stationary source system because MSERCs relocate emissions from what is essentially all communities to one specific community.

c. Hybrid Area and Stationary Source Market

Like stationary sources, area sources are emissions from non-mobile sources, but on a much smaller scale. Area source emissions occur from processes or equipment such as refrigerators, coffee roasters, or air conditioners that are exempt from local or state permitting or registration.\textsuperscript{133} Area sources can be either residential or commercial and thus are widely distributed throughout the air basin.\textsuperscript{134} Like mobile sources, the use of ASCs will take emissions over a larger geographical area and concentrate them within the community surrounding the stationary source. For example, an oil refinery could retrofit residential water heaters located throughout an entire county to cleaner burning fuels to gain enough ASCs to offset its emissions at one facility. This trade would effectively take emissions over a county-wide area and concentrate them around the stationary

\textsuperscript{130} These companies, however, are four of the five largest users of MSERCs under SCAQMD Rule 1610 and 1142. See Complaint, CBE v. SCAQMD, \textit{supra} note 9, ¶ 23.

\textsuperscript{131} See Letter from Rafael DeLeon, Acting Director, United States Environmental Protection Agency Office of Civil Rights, to Peter Greenwald, General Counsel, South Coast Air Quality Management District, and Kathleen Walsh, Office of Legal Affairs, California Air Resources Board 2 (Oct. 9, 1997) (on file with author); Telephone Interview with Kevin Parikh, EPA Office of Civil Rights (Oct. 23, 1997).

\textsuperscript{132} For example, Chevron, also a large user of MSERCs as alternative means to comply with SCAQMD Rule 1142, impacts a predominately white and middle-class neighborhood. See Kuhn, \textit{supra} note 85, at 24, n.83.

\textsuperscript{133} See SCAQMD Rule 2506(c)(2) (Apr. 11, 1997).

\textsuperscript{134} Equipment not requiring a SCAQMD permit includes mobile, combustion and heat transfer, utility, glass, ceramic, metallurgical processing and fabrication, abrasive blasting, machining, printing and reproduction, and food processing and preparation equipment. See SCAQMD Rule 219 (Sept. 11, 1998). Given the diversity of area sources exempt under Rule 219, I assume that such sources are evenly distributed within the Air Basin and not concentrated in one particular community.
source using ASCs.

Area source emissions, however, are not necessarily widely distributed. ASCs could also be created within a given community, for example, heating units within a particular housing tract. Consequently, trading between area sources could serve to transfer emissions between minority communities much like a pure stationary source market. But there may be significant localized health differences to a local community between emissions from several small sources versus one large source. The smaller scale of area source emissions indicates that their localized health impacts would be correspondingly less to the surrounding community. Thus, the relocation of emissions from an area source community to a stationary source community could have greater local impacts due to the concentration of emissions at one point source.

C. Extrinsic Factors

Even if structural market factors do not inherently discriminate against minority communities, extrinsic market factors could still lead to per se discrimination by pollution markets. For instance, if the marginal cost of pollution is correlated with race and/or income, then pollution markets would lead to disparate impacts. Economic principles indicate that stationary sources will buy emission credits when such credits are cheaper than retrofitting their own facilities. If facilities buying credits (facilities with high marginal costs) are predominately located in minority communities, then emissions will be redistributed to the surrounding minority communities. To determine whether the redistribution of such emissions are disparate under Title VI, however, more information linking demographics to marginal cost is needed.

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135. Area sources by definition do not emit enough nitrogen oxide or sulfur oxide to trigger state or local permitting requirements. See SCAQMD Rule 2506(c)(2) (April 11, 1997). Thus, area sources emit lower concentrations of emissions than stationary sources. The concentration or degree of exposure to a pollutant is a primary factor in determining its negative health effect. See Samet and Utell, supra note 118 ("The likelihood of an adverse response to an inhaled pollutant depends on the degree of exposure to the pollutant, the site of deposition and the rate of clearance, and the individual characteristics of the exposed person that determine susceptibility.").
Market-based approaches are predicated on the idea of choice. Because markets offer polluters a wide range of choices to abate pollution, the most efficient, cost-effective means can be found for each facility. Studies estimate that market-based approaches could yield cost savings of thirty to forty percent over command-and-control regulation. Yet, market choice is precisely what leads to disparate impacts from an environmental justice perspective. Because market choice allows some facilities to pollute more and some less, there will always be unequal localized pollution effects. When these emissions are disproportionately distributed, environmental justice advocates argue that market choice disparately impacts low-income and minority communities.

This assertion must be examined carefully. While market choices allow differential pollution emissions, there is nothing inherent in choice that dictates disparate impact. As noted above, disproportionate impacts from emission trading could simply be a reflection of disparate stationary source siting. Disparate siting, however, does not explain why some facilities decide to reduce their own pollution and some facilities decide to buy credits. The decision to buy or sell pollution credits is based on a complex calculation of a facility's marginal cost of pollution abatement. Thus, to prove that market choice will inevitably lead to disparate impacts on minority or low-income communities, one must prove that the marginal cost of pollution is correlated with income and/or race of the community surrounding the stationary source.

136. In this section, I assert that choice is an extrinsic market factor based on the assumption that pollution markets are free and open to everyone. But, market choice can also be seen as a structural factor if the design of the market itself limits the market participants. In some pollution markets like RECLAIM, the market is closed to the public. See SCAQMD Rule 2001(b) (Feb. 14, 1997). By restricting the market to polluters only, the price of emission credits is skewed because demand is artificially constrained. For example, environmental justice advocates are prevented from purchasing and retiring pollution rights, thereby limiting the competition and, thus, the price for emission credits.


140. This argument does not include discriminatory intent as part of market choice. Rather, this argument assumes that market choice is made without discriminatory intent, but that factors controlling marginal costs (and hence market de-
The marginal cost of air pollution abatement is determined by a variety of factors. Factors in this cost calculation could include the expected lifetime of the facility, the cost and availability of emission credits, the cost of new technology, the ability of new technology to create emissions credits (as a self-financing mechanism), and the availability of capital to finance each alternative. The toxicity of emissions also relates to the marginal cost of abatement. Professor Manuel Pastor has begun preliminary demographic research on air pollution emissions from stationary sources. His research suggests that the toxicity of the air emissions is positively correlated with the racial composition of the surrounding community—meaning the higher the percentage of minority residents, the more toxic the release. Assuming the degree of toxicity is positively related to cost of pollution abatement, Pastor’s preliminary research indicates that stationary sources with higher marginal costs will be located in minority communities. Since stationary sources with high marginal costs will buy credits from sources with low marginal costs, emissions will be effectively relocated to minority communities. Still, under Title VI, the relocation of the emissions to minority communities is disparate only if the impact to a specific minority community is significantly higher than comparable communities. There would be no disparate impact if emissions are relocated from a Latino community with a lower marginal cost to a Latino community with a higher marginal cost. Much more research is needed to accurately assess the potential disparate impact for this type of market trading. In particular, a survey of pollution sources’ marginal costs and demographic data surrounding individual pollution sources would help to determine whether the impact on a specific minority community is likely to be significantly higher than on comparable communities. If a majority of


142. See supra note 127.

143. “EPA generally would expect the rates of impact for the affected population and comparison populations to be relatively comparable under properly implemented programs.” EPA, Interim Guidance, supra note 108, at 11. Thus findings of disparate impact imply statistically significant differences. EPA is quick to note, however, that because there is “no one formula or analysis,” it is free to “identify on a case-by-case basis other comparisons to determine disparate impact.” Id.
pollution sources are located in minority communities but have heterogeneous marginal costs, disproportionate impacts are possible.

D. Summary of Title VI Critique

A Title VI challenge of an entire pollution market would face numerous hurdles. First, establishing an accurate measure of disparate impact in emissions trading is difficult given the statutory time limit of EPA's Title VI implementing regulations and the dynamic nature of pollution trading. Because the market equilibrium is constantly changing with each trade, assessing disparate impacts to a community at a specific point in time becomes problematic. Next, based on available data, neither the market structure nor extrinsic market factors appear to be inherently discriminatory against low-income and minority communities. Still, emissions trading can result in disparate impacts to communities under certain circumstances. For instance, mobile and area source credits have a higher potential to create disparate impacts given the relocation of emissions from a larger to smaller area. But even if pollution markets create disparate impacts in some circumstances, this does not end the Title VI analysis.

IV. POSSIBLE EQUITY SOLUTIONS AND MARKET CONSEQUENCES

If emissions trading is found to have disparate impacts, Title VI does not automatically mandate the elimination of emissions trading. Under Title VI, if disparate impacts occur as a result of an approved pollution market such as RECLAIM, SCAQMD (or a similar federally funded agency) has the burden of demonstrating that pollution markets have a "substantial legitimate justification." It is likely that the cost-effective reduction of criteria air pollutant emissions is a legitimate purpose. Thus, the burden switches back to the affected community to show that a less discriminatory alternative would have sufficiently served SCAQMD's legitimate interest of market efficiency and environmental protection. If a less discriminatory alternative is feasible, then the recipient of federal funds can voluntarily comply through infor-

144. A stronger case for per se discrimination could be made if a connection between marginal cost and race were proven by subsequent studies.


146. See id.
mal means. Alternatively, EPA may terminate or refuse to award or continue financial assistance.

Because pollution markets are not per se discriminatory, a call to end all emissions trading seems unwarranted, especially given the enormous cost savings of markets. In addition, there is no substantial political support to end the use of market mechanisms in environmental protection. Since the success of the sulfur dioxide market created under the 1990 CAA Amendments, pollution markets have gained acceptance by mainstream lawmakers, environmental agencies, and the Clinton Administration. EPA recently approved emissions trading programs in Michigan and Connecticut, bringing the total number of states participating in trading to seven. Michigan's program is particularly ambitious, allowing trading in VOCs, carbon monoxide, sulfur dioxide, particulates, nitrogen oxide, and lead across state lines.

Consequently, this Part investigates less discriminatory alternatives available within a market framework. The following four alternatives are examined for their potential to avoid disparate impacts as well as achieve market efficiency: (1) partial return to command-and-control regulation; (2) environmental justice trade approvals; (3) restricted trading areas; and (4) negotiated compensation. The creation of a database mapping the demographic and marginal cost profile of communities surrounding pollution sources should be a precondition to implementing any of the proposed alternatives.

A. Baseline Data: Demographic and Marginal Cost Profiles of

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147. The elements of a Title VI disparate impact claim, including the burden shifting provision, derive from the analysis of cases decided under Title VII disparate impact law. *See* New York Urban League v. New York, 71 F.3d 1031 (2d Cir. 1995).


149. *See e.g.*, Burtraw, *supra* note 35 (stating that the sulfur dioxide market created under the 1990 CAA Amendments is estimated to save $1.8 to $4.5 billion per year in compliance costs).

150. *See e.g.*, Boulton, *supra* note 35 (stating that success of the 1990 CAA Amendments "has inspired the EPA to consider extending trading to oxides of nitrogen, toxic substances such as mercury, and possibly even the particulate dust emitted by long-distance haulage trucks"); John J. Fialka, *Breathing Easy: Clear Skies Are Goal As Pollution Is Turned Into a Commodity*, WALL ST. J., Oct. 3, 1997 at A1 ("Since its 1994 inception, the [sulfur dioxide] trading program, administered by EPA, has contributed to a 30% drop in sulfur-dioxide emissions from major polluters.").


152. *See id.*
Pollution Sources

Regulators must be able to identify potential disparate impacts before developing and implementing strategies to avoid such impacts. Because the environmental justice critique of emissions trading is new, there is no general background data to support or refute claims of disproportionate impact, except for data collected for specific legal actions. If environmental justice advocates want markets such as RECLAIM to incorporate distributional concerns, a broader data pool is needed to identify potential disparate impacts. Such data should be collected pursuant to EO 12,898, which directs "each Federal agency, whenever practicable and appropriate, [to] collect, maintain, and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding facilities or sites expected to have a substantial environmental, human health, or economic effects on the surrounding populations." 153

SCAQMD has taken the first step in this data collection process. As part of its recent ten-point environmental justice plan (approved in response to CBE's legal challenge), SCAQMD has embarked on a comprehensive study of toxic hot spots, including cumulative impacts from multiple sources. 154 The ten-month study will use special micro-scale monitoring devices to measure neighborhood toxicity levels. 155 Measurements of toxic hot spots, however, are not enough. While the SCAQMD study will identify current areas that are disproportionately affected by air pollution, it will not help the agency determine future potential hot spots from emissions trading. To accomplish this goal, SCAQMD needs to collect demographic data of communities surrounding each stationary pollution source in RECLAIM. SCAQMD should also collect marginal cost data for each stationary source to determine which sources would be most likely to purchase emission credits.

If a demographic and marginal cost database for RECLAIM (or similar pollution markets) was created, the regulatory agency could determine how existing trading is affecting communities within the market as well as potential future effects. Linking

153. See EO No. 12,898, §3-302b, supra note 1.
155. See SCAQMD PRESS RELEASE, supra note 101.
marginal cost to demographics would also allow the regulatory agency to forecast potential future trades. Thus, the regulatory agency would be able to reform market policies to avoid future disparate impacts. If a comprehensive database is not created, disparate impacts will be recognized only on a piecemeal basis (in communities that choose to take legal action). Furthermore, a demographic and marginal cost database is required to minimize the effects that market alternatives would have on efficiency, as described below.

B. (Partial) Return to Command and Control System

One obvious remedy to potential disparate impacts created by emissions trading would be a full return to the command-and-control system. Given the market savings realized by RECLAIM and similar pollution markets, it is unlikely that this remedy is a viable political or economic option. A partial return to direct regulation, however, could diffuse potential disparate impacts from emissions trading. For example, CBE recommends elimination of mobile source credits from car scrapping because these MSERCs have a tendency to concentrate once widely dispersed emissions into a specific community. It requests that EPA deny approval of Rule 1610 for use to comply with federal CAA requirements, in effect ending the primary method of alternative compliance with Rule 1142.

To ensure that mobile emissions would not be relocated to specific communities, however, all MSERCs (not just car scrapping under Rule 1610) would have to be eliminated. As a result, market efficiency would suffer because one inexpensive source of emissions credits would be removed from the market. CBE's complaint cites the purchase of MSERCs under Rule 1610 by four oil companies over a four year period. In that time, the combined oil companies scrapped 3,293 cars. At an average price of $600 per car, the total cost of compliance with Rule 1142

156. See supra text accompanying notes 49, 149, 150, 151 and 152.
157. SCAQMD has approved the use of Rule 1610 as a means of compliance with the California Clean Air Act. Use of Rule 1610 to comply with federal CAA requirements, however, must be approved by the U.S. EPA pursuant to 40 C.F.R. §§ 51.490 to 51.494.
158. Because cars scrapped under Rule 1610 are assumed to have a life of least three years, some MSERCs purchased by these oil companies are credited until the year 2000. See Complaint, CBE v. SCAQMD, supra note 9 at ¶¶ 29-30, 33, 36-38, 41.
159. See id.
for these four companies was approximately $2 million. Without MSERCs, each company would be forced to install a vapor recovery system or similar abatement technology at a cost of $6 to $30 million each.

Area source credits (ASCs) could replace MSERCs as a cheap alternative to compliance with Rule 1142. But as discussed above, relocation of area source emissions could also have disparate effects, leading to a similar ban on its use. Consequently, elimination of VOC MSERCs and ASCs effectively destroys all emissions trading for this pollutant. Further, eliminating mobile and area source emissions from the market ignores the significant contributions of automobiles and area sources to smog formation. Still, trading in other pollutants such as nitrogen oxide or sulfur oxide would continue, allowing costs savings in these areas.

In the alternative, the regulatory agency could put additional restrictions on the use of MSERCs to reduce their potential disparate impacts. For example, MSERCs could be limited to a certain percentage of a stationary source's overall trading. The percentage of MSERCs allowed for each stationary source could vary according the each source's surrounding community demographics to reduce potential disparate impacts as much as practicable. The same could be done for area source credits. Obviously, these restrictions would come at the cost of efficiency, as stationary sources would be limited in their use of MSERCs or ASCs.

The Bay Area Air Quality Management District (BAAQMD) provides another example of how credit restrictions could work. BAAQMD is currently drafting an interchangeable emission credits rule for mobile, area, and stationary sources. The proposed rule limits the use of credits to the stationary source in which they were created. Also, credits cannot be used in lieu of installing required technology or meeting hazardous or toxic air pollutant emissions standards. By restricting credit usage,

160. See Telephone Interview with Scott Kuhn, Staff Attorney, Communities for a Better Environment (Dec. 9, 1997) (the average cost of a car scrapped under Rule 1610 is $600).
161. See Kuhn, supra note 85.
162. The purpose of SCAQMD Rule 1142 is to reduce VOC emissions. Thus, only VOC emission credits can be used as an alternative compliance method. RECLAIM credits cannot be used in this context as they only regulate nitrogen oxide and sulfur oxide emissions.
164. See id. at ¶ 2-9-304.
BAAQMD has virtually eliminated the potential for discriminatory impacts. The tradeoff is an increased cost of pollution control. In particular, limiting the use of credits to the stationary source where the credit was created eviscerates the concept of trading altogether. Instead, the BAAQMD rule resembles a credit banking system. Preventing credits from being used for compliance with other types of rules also increases the cost of pollution control.

C. Environmental Justice Trade Approval

A more narrowly tailored alternative to address disparate impacts would be to use individual trade approvals based on distributional criteria. For example, while SCAQMD monitors trading in RECLAIM by requiring facilities to register their trades, it does not have discretionary approval over such trades.\textsuperscript{165} SCAQMD could alter its registration process to require trade approvals based on findings of no disparate impact to surrounding communities. Before a trade is approved, SCAQMD could compare the community where the credit originated with the community that the emissions are being relocated to using a demographic database. If a disparate impact would occur, SCAQMD could reject the trade.

Unfortunately, a disparate impact analysis of emissions trading is not very useful on an individual trading level. Because each trade changes the distributive equilibrium, an accurate analysis must encompass a series of trades. The appropriate time period for trade approvals would be decided by the regulatory agency based on administrative and accuracy concerns. The agency would have to determine how many trades should be approved simultaneously to allow an accurate picture of the distributional consequences. At the same time, the agency would need to consider the administrative consequences of requiring approvals of groups of trades.

An approval system based on a series of potential trades creates serious market inefficiencies. Requiring approval of all trades would drastically increase the transaction costs and create uncertainty in the market. Instead of instantaneous trading, market participants would have to plan their trading months in advance to allow time for a disparate impact analysis prior to approval.\textsuperscript{166} The timeframe is further complicated by the tempo-

\textsuperscript{165} See SCAQMD Rule 2007(e) (Dec. 7, 1995).
\textsuperscript{166} Similar studies performed by EPA under Title VI are statutorily allowed 180 days for completion, but no Title VI investigation has ever met this deadline. See
ral limits on emission credits. A disparate impact analysis could put the use of credits in jeopardy because such credits are only valid during a finite time period (usually one year). To accelerate the approval process, market participants could perform their own disparate impact analysis prior to choosing a trading partner. Individual disparate impact assessments, however, would not be representative of the true disparate impact once additional trades were factored into the analysis.

In addition, an approval requirement could also lead to trading strictly along ethnic or racial lines. One way for facilities to avoid disparate impacts would be to trade between communities of the same race or ethnicity. Intraracial trading would eliminate future disparate impacts, but would serve to perpetuate existing bias in pollution emissions because emissions could not be relocated out of a specific community without fear of trade rejection by SCAQMD. Problems also arise for stationary sources that are located in racially mixed communities. How are disparate impacts determined if there is no dominant racial group? Perhaps these communities would be confined to trading among themselves.

Clearly, a trade approval system would create serious administrative difficulties because of the nature of disparate impact analysis in a market system. Approval based on a group of trades inherently conflicts with a market system based on individual choice. While preserving the market system in name, such a pre-approval system destroys the cost-efficiencies driving the market.

D. Restricted Trading Areas

Another method to incorporate distributional concerns into a pollution market would be to restrict the areas in which emissions could be traded. For instance, communities that are currently disproportionately impacted could be designated non-trading zones for future trades. Representative Lewis introduced a similar proposal in the Environmental Justice Act of 1992. He proposed a moratorium on the siting and permitting of new toxic chemical facilities in "environmental high impact areas." See Environmental Justice Act of 1992, H.R. 2105, 103rd Congress, 1st Session (May 13, 1993).
the zone to sell credits.\textsuperscript{168} Thus, such non-buying zones would facilitate the redistribution of emissions from disparately affected communities to less-affected communities through credit sales. To capture changes in emissions distribution caused by credit sales, non-buying zones could be reviewed and redesignated every trading period.

As with any restriction on market trading, a non-buying zone would diminish market efficiency. Pollution sources within non-trading zones would not be able to buy credits, potentially eliminating the least-costly compliance method for some sources. Obviously, sources that would have chosen to buy credits will bear the economic impact of this policy measure. However, non-buying zones would not completely end efficiency savings from emissions trading. Unlike a strict command-and-control scheme that specifies the method of emissions reduction, non-trading zones would still allow other compliance choices.

Non-buying zones would by definition also reduce the number of buyers in the pollution market, creating another market concern. Without specific demographic data for all pollution sources within a given market, the total effect on market buyers is unknown. If a critical mass of sources are affected, a viable emissions trading market could collapse. Too many sellers would drive the price of credits down, removing the financial incentive for sources to create credits and thus eliminating additional emissions reductions.

\textit{E. Compensation for Affected Communities}

A fourth possible alternative to is to provide some type of compensation to communities who bear a disparate amount of air pollution emissions. While this alternative would not avoid disparate impacts, it would provide affected communities with some benefit. Compensation could be provided directly from the pollution source or through the regulating agency via a fund created by contributions of pollution sources participating in the market. Both methods would force polluters to internalize the costs of disparate impacts to low-income and minority communities. The cost of compensation would be reflected in the price of goods or services provided by the pollution source, in turn forcing the end users of the pollution source to pay for the burden on the community.

\textsuperscript{168} A complete non-trading zone, regulated only by a command-and-control system, would eliminate the incentive for sources to reduce emissions by selling credits.
As long as compensation requirements are applied equally to all market participants, this alternative would not have a significant effect on market efficiency. Compensation costs would simply be added to the marginal cost of abatement, and the market would continue to operate normally (assuming compensation is not prohibitively expensive). If, however, compensation programs were voluntary—meaning that affected communities could decide to reject compensation in favor of less pollution—then market efficiency would be impacted. Some pollution sources would be denied the least-costly abatement method. In addition, transaction costs would increase because community approvals of trades would increase the time required to complete each trade. Market uncertainty would also increase because no source could be guaranteed emission credits without community approval.169

CONCLUSION

The "basic assumption . . . that it was safe to focus on allocation efficiency because distribution would take care of itself" can no longer continue, especially when environmental regulation is left to the market.170 The potential for disproportionate impacts on low-income and minority communities from emissions trading is real. As a result of CBE’s Title VI complaint, the California Air Resources Board put approval of all proposed VOC emissions trading programs in the state on hold until environmental justice concerns in CBE’s case were more fully assessed.171 EPA is also considering the need to include environmental justice provisions in the CAA regulations allowing economic incentive programs.172

In the interim, however, pollution markets are continuing to

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169. See supra Part V.C., for a similar discussion. In effect, compensation would take the form of a trade approval by the community instead of the regulatory agency. In addition, compensation plans often face other political roadblocks. Some environmental justice advocates argue that it is "immoral to 'pay' individuals to expose themselves to health risks." Christopher Boerner & Thomas Lambert, Environmental Justice Can Be Achieved Through Negotiated Compensation, in ENVIRONMENTAL JUSTICE 85, 94 (Jonathon S. Petrilkin ed., 1995). Because this Comment focuses on the effects to market efficiency, moral issues regarding environmental justice remedies are not discussed.

170. Lazarus, supra note 2 at 485.


172. See Letter from Felicia Marcus, Regional Administrator, United States Environmental Protection Agency Region IX, to Richard Toshiyuki Drury, Legal Director, Communities for a Better Environment (Mar. 17, 1997) (on file with author).
spread throughout the country, with Michigan and Connecticut becoming the most recent states to gain EPA approval of emissions trading programs.173 There is also support for pollution markets on the international level. President Clinton has continued his support of market-based approaches by proposing an emissions trading program among industrialized and developing nations as part of the Global Warming Treaty signed in Kyoto, Japan in 1997.174

As federal, state, and local agencies and environmental justice advocates begin to talk about concerns of disparate impacts from emissions trading programs, the discussion must go beyond specific emission trading rules. Certainly, CBE's case provides the strongest argument yet that emissions trading causes disparate impacts. But, questions regarding the distributional consequences of an entire pollution market are of even greater importance.

Making the leap from a narrow analysis of the disparate impacts of specific trading rules to an inquiry about per se discrimination by market trading will not be easy. The disparate impact analysis becomes much more complicated when all pollution sources are considered. In addition, market structure and market choice must be examined. While the concept of emissions trading does not create or exacerbate disparate impacts to low-income and minority communities a priori, nevertheless, disparate impacts are possible in a market system. To identify potential future disparate impacts, demographic data of communities surrounding pollution sources should be correlated with each source's marginal cost of pollution control. Thoughtful and educated decisionmaking about the distributional effects of pollution markets cannot occur until such data are collected.

Once potential disparate impacts are identified, a less discriminatory market system must be designed. Each alternative analyzed in this Comment presents different costs and benefits to both market efficiency and environmental justice. A delicate balance must be struck between incorporating controls on the market's distribution of environmental burdens and the costs such controls impose on the market. If the costs become too great, the market could collapse altogether.175 Clearly, policy-

173. See Lobenz supra note 151.
175. The failure of past emissions trading programs (although not external market systems) have been attributed to high transaction costs and uncertainty from such
makers from the local to the national level have invested too much time, effort, and money in pollution markets to regulate them out of existence. Moreover, the potential cost savings from pollution markets is just too great to lose.\textsuperscript{176} The market, however, cannot achieve maximum efficiency and fairness simultaneously. Compromise must be made on both sides. The challenge now is in leading the dialogue toward such a compromise.

\textsuperscript{176} See Burtow \textit{supra} note 35.