

Pollution Trading

Cashing Out Our Clean Air and Water

Issue Brief • December 2012

The last 20 years of environmental protection have seen a steady shift away from many of the tried-and-true regulatory control approaches that force industries to implement increasingly more protective pollution abatement measures. We are witnessing a move toward market-driven offset programs that substitute trading for technology. With both air and water, industries are now being offered pay-to-pollute approaches that enable them to purchase pollution “credits” instead of working to reduce their harmful discharges. Of course, these market mechanisms come with a whole host of loopholes and liabilities.

The U.S. Acid Rain Program and SO₂

Title IV of the 1990 Clean Air Act Amendments, known as the Acid Rain Program, or ARP, has become the poster child for pollution trading proponents. ARP was enacted to address the main causes of acid rain — the emission of sulfur dioxide (SO₂) and nitrogen oxides (NO_x) from coal-fired power plants — through a system of buying and selling emission allowances.¹ The goal of ARP was to reduce annual SO₂ emissions to about 9 million tons by 2010, down from the 15.7 million tons emitted in 1990.² Recent modeling indicates that this reduction goal was reached by 2007.³ What remains unclear is whether the reductions achieved under the ARP were due to market mechanisms, or whether these decreases were achieved *in spite of* pollution trading.

Prior to the enactment of Title IV, an assessment projection indicated that reductions in SO₂ as great as those achieved under a market-based ARP could be attained if older coal-fired power plants simply complied with the Clean Air Act’s New Source Review (NSR) technology retrofitting requirements.⁴ But with the introduction of trading, those technological modifications fell by the wayside. As one 2005 report indicates, “Experience since 1990 has shown that most of these facilities have managed operations to avoid triggering NSR, resulting in facility life being extended longer and adoption of new control technologies being slower than many analysts predicted in 1990.”⁵

While we may never know the real impact of substituting trading mechanisms for technological upgrades on U.S. SO₂ emissions, results from Europe's contemporaneous acid rain approach indicates that we would have done much better sticking with regulatory approaches. A 2004 comparative study of the U.S. trading approach to SO₂ with the European Union's and Japan's regulatory "command and control" systems show a much greater reduction without trading. Whereas the United States attained a 39 percent reduction in SO₂, the EU achieved 78 percent reductions.⁶ Japan's emissions fell by 82 percent.⁷ We also know that the U.S. Environmental Protection Agency (EPA) now attributes at least 1 million tons of SO₂ reductions during ARP to factors unrelated to trading, namely the increased availability and switch to low-sulfur coal sources from the Powder River Basin in the early 1990s.⁸

Was the ARP a successful trading program? Only if you ignore the reductions we would have achieved had we continued to force these industries to comply with the law and upgrade their reduction technology, without allowing trading.

The Los Angeles Air Pollution Programs: Rule 1610 & RECLAIM

While Congress was enacting Title IV, the city of Los Angeles was experimenting with its own air trading approaches to cut down on several pollutants. Although the success of ARP's trading achievements are debatable, there is little doubt that the LA programs were abject failures.

Rule 1610 was approved in 1993.⁹ It allowed stationary sources of air pollution (typically LA's oil refineries) to purchase emissions credits from scrapyard operators who were removing older, highly polluting cars off the roads.¹⁰ The pollutants traded were volatile organic compounds, or VOCs.¹¹ The Rule 1610 program underscored many of the inherent problems with trading programs. Scrapyards were removing engines from old vehicles before demolishing them and selling both the engine and the emissions credits to increase profits.¹² The oil refineries, all located in clusters among communities of color, continued to emit VOCs, along with many other co-pollutants such as benzene, a known carcinogen.¹³ These increases in stationary source emissions led to localized "hotspots" of increased impairment.

The early 1990s also saw Los Angeles introduce the Regional Clean Air Incentives Market, or RECLAIM, to try

to reduce smog in the region.¹⁴ Pre-RECLAIM regulatory approaches showed dramatic reductions in many smog-related pollutants, including NO_x.¹⁵ These reductions stopped abruptly with the implementation of the new market system. In fact, for the first two years of RECLAIM, emissions actually increased, with only minor reductions (3 percent) in the years following.¹⁶ RECLAIM never did reach its goals. According to an April 2001 article in the *Los Angeles Times*, one month before the program was scrapped:

Manufacturers, power plants and refineries have reduced emissions by a scant 16 percent — much less than was anticipated by this time. Businesses were given 10 years to eliminate about 13,000 tons of pollution annually, but as the program nears its end they have eliminated just 4,144 tons....¹⁷

RECLAIM also shares a major problem with ARP and all trading programs: it de-motivated technological advances to pollution control, allowing industries to rely on credit purchasing instead of innovation to reduce emissions.¹⁸ The 10 years of RECLAIM were, in effect, a decade lost on making any significant inroads on LA's air problems.

The Carbon Credit Marketplace

With a total value of \$176 billion, the biggest pollution marketplace experiment is the ongoing carbon dioxide (CO₂) cap-and-trade scheme that attempts to reduce climate-altering greenhouse gas emissions from industries around the globe.¹⁹ Carbon trading was included



as one of the mechanisms for meeting national emissions targets of the Kyoto Protocol, a United Nations agreement where a number of nations (the United States was not one of them) agreed to implement caps on carbon emissions and set up credit-selling mechanisms to incentivize reductions.²⁰

The European Union has taken the lead in developing an Emissions Trading System (ETS) for CO₂ emissions. Thirty countries are part of this regional cap-and-trade system.²¹ The ETS only covers certain sectors, such as power generation and steel manufacturing, but not others, such as transport and agriculture. The ETS aims to reduce CO₂ emissions in these sectors 20 percent by 2020.²² Trading started in 2005.

While it is still too early to measure the ultimate successes and failures of the carbon trading program, it is safe to say that the system has been fraught with significant problems and, at times, seems to be teetering on complete collapse. The price for carbon has been incredibly volatile. It reached €30 (\$47) in 2008.²³ It has languished below €10 for most of 2012, hitting a low of €5.99 in April.²⁴ This kind of volatility undermines economic planning, while allowing some companies to reap a windfall with overallocation.²⁵ And it has attracted hackers and outright fraud, culminating in shutting down the spot market in 2011 after a group of Eastern European hackers cost EU governments up to €5 billion in an attack.²⁶

From stolen and fraudulent credits to stockpiling, plunging demands and miscalculated caps, the carbon cap-and-trade program has more problems associated with it than any traditional regulatory program could.

Nutrient Water Trading

In 2010, the U.S. EPA, for the first time, sanctioned water pollution trading when it enacted the Chesapeake Bay Total Maximum Daily Load, a pollution allocation scheme intended to finally put an end to the devastating levels of nitrogen, phosphorus and sediment plaguing the Bay.²⁷ Under the EPA's plan, designated "nonpoint" sources of pollution under the Clean Water Act, such as farms, are now free to sell credits for these pollutants to "point" sources such as power plants, wastewater treatment plants and other "end-of-the-pipe" industries. The stated rationale behind nonpoint-to-point source trading programs is that it's cheaper to reduce discharges from sources like farms than it is to force technological improvements in the point source sector.²⁸

The coal-fired power plant industry has been quick to adopt the notion of water pollution trading.²⁹ They see it as a way to avoid technological responses to the massive amounts of nitrogen pollution coming from their facilities and killing local waterways. These nitrogen discharges jumped sharply over the last couple of years as Clean Air Act requirements forced the industry to better control its nitrogen air emissions; now, their nitrogen is pouring straight into our waterways instead of into the air.³⁰

Although the federal government had never before signed off on water pollution trading, this market approach has been implemented on a state level across the country for some 30 years. Tellingly, there is not a single documented case of water quality improvements resulting from nonpoint-to-point source pollution trading.³¹ And given the government's inability and unwillingness to verify nonpoint source reductions and the potential for point sources to increase discharges under the guise of credit purchasing, there is little likelihood that these kinds of trading programs will have any beneficial impact on water quality.

The Renewable Fuel Standard Program

The U.S. Renewable Fuel Standard, or RFS, program was enacted under the Energy Policy Act of 2005, and expanded in 2007.³² Its goal was to force oil and gas companies in the United States to increase their use of renewable transportation fuels from 9 billion gallons in 2008 to 36 billion gallons by 2022. The EPA's final regulation incorporated the monitoring of renewable fuels through a trading program that allowed companies to purchase Renewable Identification Numbers, in essence renewable fuel credits, to meet these cleanup standards.³³ RIN credits are now part of a global marketplace and, perhaps more than any other environmental trading scheme, have been vulnerable to fraud and manipulation.

For example, a Maryland man, Rodney Hailey, was convicted of selling 32.2 million fake RIN credits, worth \$9 million, to companies like ExxonMobil, BP and others.³⁴ The oil and gas companies blame the EPA for allowing Hailey to continue to sell credits even during the year he was under investigation.³⁵ At trial, Hailey implicated the oil and gas companies, claiming the companies knew that the credits were fake, but didn't care.³⁶ And the EPA says that credit purchasers don't engage in due diligence before buying their way into compliance.³⁷

The RFS system is so broken that it even prompted a researcher at the American Enterprise Institute, a

staunchly pro-market think tank, to state on the conservative Web site National Review Online:

*Fraud has permeated virtually all of these kinds of credit-trading systems, because they create a situation where you can capture the rents at relatively little risk of being caught. So, you claim to produce solar power, but instead, you just set up diesel generators and pump power into the grid, claiming the higher price guaranteed for renewables. It's the same with biofuels.*³⁸

Recent reports indicate that the EPA now believes that at least 140 million renewable energy credits (9 percent of the total market) have been fraudulently generated and sold under the RFS program.³⁹

Conclusion

Trading proponents offer a variety of rationales to support their position that allowing industries to buy their way out of protecting air and water is the way to go. But a brief overview of past and existing pollution swapping programs paints a very different picture of the market approach; it depicts a system rife with fraud and failure. Pollution trading does not bode well for the future of our most precious and irreplaceable natural resources: the air we breathe and the water we drink.

Endnotes

- 1 42 USC § 7651 – 7651(o).
- 2 U.S. Environmental Protection Agency (EPA). “Clearing the Air: The Facts About Cap-and-Trade.” (EPA-430-F-02-009). May 2002 at 5.
- 3 U.S. National Acid Precipitation Assessment Program. “Report to Congress 2011: An Integrated Assessment.” December 28, 2011 at 8, Figure 1-2.
- 4 Chestnut, Lauraine G. and David M. Mills. “A fresh look at the benefits and costs of the US acid rain program.” *Journal of Environmental Management*, vol. 77. 2005 at 255.
- 5 *Ibid.* at 253 to 254.
- 6 European Union. “Assessment of the Effectiveness of European Air Quality Policies and Measures: Case Study 1.” Project for DG Environment, carried out by Milieu Ltd, the Danish National Environmental Research Institute and the Center for Clean Air Policy. October 4, 2004 at 7.
- 7 *Ibid.* at 20.
- 8 Chestnut and Mills (2005) at 255.
- 9 South Coast Air Quality Management District. Old Vehicle Scrapping Rule 1610.
- 10 Drury, Robert Toshiyuki, et al. “Pollution trading and environmental injustice: Los Angeles’ failed experiment in air quality policy.” *Duke Environmental Law & Policy Forum*. vol. 9. Spring 1999 at 247.
- 11 *Ibid.* at 253.
- 12 *Ibid.* at 261.
- 13 Lejano, Raul P. and Rei Hirose. “Testing the assumptions behind emissions trading in non-market goods: the RECLAIM program in Southern California.” *Environmental Science & Policy*, vol. 8. 2005 at 371.
- 14 Drury (1999) at 247.
- 15 South Coast Air Quality Management District. “RECLAIM Program Three-Year Audit and Progress Report.” May 8, 1998 at 3 to 7.
- 16 *Ibid.* at Table 3-1.
- 17 Polakovic, Gary. “Innovative Smog Plan Makes Little Progress.” *Los Angeles Times*. April 17, 2001.
- 18 EPA. “An Evaluation of the South Coast Air Quality Management District’s Regional Clean Air Incentives Market - Lessons in Environmental Markets and Innovation.” November 2002 at 27.
- 19 Kossoy, Alexandre and Pierre Guigon. “State and Trends of the Carbon Market 2012.” The World Bank. May 2012 at 9.
- 20 United Nations. “Kyoto Protocol to the United Nations Framework Convention on Climate Change.” December 11, 1997 at Article 17.
- 21 European Environment Agency Joint Committee. “Decision of the EEA Joint Committee No 146/2007 of 26 October 2007 amending Annex XX (Environment) to the EEA Agreement.” Official Journal L 100, 10/04/2008 P. 0092 – 0098.
- 22 European Parliament. “Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community Text with EEA relevance.” Official Journal L 140, 05/06/2009 P. 0063 – 0087.
- 23 “Breathing Difficulties: A market in need of a miracle.” *The Economist*. March 3, 2012.
- 24 Lewis, Barbara and Nina Chestney. “EU officials hold preliminary talks on propping up carbon market.” *Reuters*. September 19, 2012.
- 25 “EU’s ‘Carbon Fat Cats’ Get Rich Off Trading Scheme: Study.” *Agence France-Presse*. March 5, 2010.
- 26 Inman, Phillip and Tim Webb. “Seven charged in carbon trading VAT fraud case.” *The Guardian*. January 26, 2011.
- 27 EPA. “Fact Sheet: Chesapeake Bay Total Maximum Daily Load (TMDL).” Available at http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/BayTMDLFactSheet8_6.pdf. Accessed October 2012.
- 28 EPA. “Water Quality Trading Policy.” January 13, 2003 at 1 to 2.
- 29 Electric Power Research Institute. “Ohio River Basin Water Quality Trading Product.” October 2010 at 1.
- 30 Duhigg, Charles. “Cleansing the air at the expense of waterways.” *The New York Times*. October 12, 2009.
- 31 Food and Water Watch. “Trading Away Your Right to Clean Water: Trading and the Financialization of Nature.” September 2012 at 1.
- 32 Energy Policy Act of 2005. Public Law 109-58, §1501; Energy Independence and Security Act of 2007. PL 110-140, §202.
- 33 McPhail, Lihong et al. “The Renewable Identification Number System and U.S. Biofuel Mandates.” U.S. Department of Agriculture Economic Research Service. BIO-03, November 2011 at 1.
- 34 Wheeler, Timothy B. “Perry Hall man convicted in biodiesel fraud case.” *The Baltimore Sun*. June 25, 2012.
- 35 House Committee on Energy and Commerce. Oversight and Investigations Hearing on “RIN Fraud: EPA’s Efforts to Ensure Market Integrity in the Renewable Fuels Program.” July 11, 2012. Preliminary transcript at 45.
- 36 Wheeler, Timothy B. “Biofuel company owner denies deceiving anyone.” *The Baltimore Sun*. June 18, 2012.
- 37 House Committee on Energy and Commerce (2012) at 9.
- 38 Keune, Nash. “Fraud and Biodiesel Credits.” July 30, 2012. Available at <http://www.nationalreview.com/articles/312581/fraud-and-biodiesel-credits-nash-keune>. Accessed October 2012.
- 39 Kotrba, Ron. “Hearing on EPA handling of biodiesel RIN fraud to occur this week.” *Biodiesel Magazine*. July 9, 2012.

Food & Water Europe is a program of Food & Water Watch, Inc., a non-profit consumer NGO based in Washington, D.C., working to ensure clean water and safe food in Europe and around the world. We challenge the corporate control and abuse of our food and water resources by empowering people to take action and transforming the public consciousness about what we eat and drink.



Copyright © December 2012 by Food & Water Europe. All rights reserved.
This issue brief can be viewed or downloaded at www.foodandwaterwatch.org.