

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS  
COMPETITION COMMITTEE**

**Working Party No. 2 on Competition and Regulation**

**EMISSION PERMITS AND COMPETITION**

-- United States --

**25 October 2010**

*The attached document is submitted to Working Party No. 2 of the Competition Committee FOR DISCUSSION under item VII of the agenda at its forthcoming meeting on 25 October 2010.*

Please contact Mr. Sean Ennis if you have any questions regarding this document [phone number: +33 1 45 24 96 55 -- E-mail address: [sean.ennis@oecd.org](mailto:sean.ennis@oecd.org)].

**JT03290664**



## 1. Introduction

1. The Secretariat's guide for country submissions requested information on the scope of emissions trading schemes and general characteristics of tradable permits, the allocation of permits, the market for permits, and the effect of permits on the output market. Accordingly, this submission describes existing emissions permit trading schemes in the United States. It then discusses carbon offset programs and renewable energy certificates.

2. The United States has not established a program of tradable permits for greenhouse gas emissions at the national level. However, this summary describes the first ever national-level trading program, which addressed sulfur dioxide (SO<sub>2</sub>) emissions, and a number of regional or State programs that cover greenhouse gas emissions and other air and water pollutants. The U.S. federal antitrust agencies (Department of Justice and Federal Trade Commission) have had limited involvement with emissions trading issues. This submission briefly describes that involvement, including some consumer protection issues.

## 2. The Acid Rain Program

3. The Acid Rain Program, which is administered by the U.S. Environmental Protection Agency (EPA) as part of the 1990 Amendments to the Clean Air Act (CAA), addresses SO<sub>2</sub> emissions in the 48 contiguous states using a cap-and-trade program, and focuses on emissions from the electric power sector. The first phase of the program started in 1995 and allocated allowances (*i.e.*, permits) to utility companies that operated the larger, higher emitting plants, based on historical data and a defined formula.<sup>1</sup> The second phase of the program started in 2000 and tightened the overall emission caps at the larger plants and set new restrictions at many smaller plants (generally covering all units larger than 25 MW). Along with the allocated permits, the EPA auctions a small portion (2.8%) of allowances annually. There are two auctions conducted each year: a spot auction for permits that can be used that year, and an advance auction, to allow planning (*e.g.*, new plant construction, expansion of existing facilities), for permits that can be used starting 7 years after the auction date (although they can be traded before then). All of the allowances are tradable and can be bought or sold by anyone, including individuals and companies that are not regulated. The allowances can be banked for use in future years. There is also an opt-in program that allows sources of SO<sub>2</sub> that are not required to participate in the program to opt-in and receive allowances. During the first 11 years of the program, annual SO<sub>2</sub> emissions from U.S. sources decreased by more than 40 percent.<sup>2</sup> By using a flexible, market-based mechanism, significant emission reductions were achieved at a fraction of the anticipated cost. Ex-post analysis of the program estimates annual benefits of the program in 2010 at \$122 billion and costs for that year at \$3 billion, a 40-to-1 benefit/cost ratio.<sup>3</sup>

---

<sup>1</sup> For the first five years of the program, the allowances were allocated at an emissions rate of 2.5 pounds of SO<sub>2</sub>/mmBtu (million British thermal units) of heat input, multiplied by the unit's baseline mmBtu (as prescribed by Title IV of CAA). After 2000 the formula allowed 1.2 pounds of SO<sub>2</sub>/mmBtu of heat input, multiplied by the unit's baseline. Beginning in 2010, the CAA places a cap at 8.95 million on the number of allowances issued to units each year.

<sup>2</sup> See Napolitano et al. (2007), "The U.S. Acid Rain Program: Key Insights from the Design, Operation, and Assessment of a Cap-and-Trade Program" *The Electricity Journal* 20(7): 47-58, available at [http://www.epa.gov/airmarkt/resource/docs/US%20Acid%20Rain%20Program\\_Elec%20Journal%20Aug%202007.pdf](http://www.epa.gov/airmarkt/resource/docs/US%20Acid%20Rain%20Program_Elec%20Journal%20Aug%202007.pdf).

<sup>3</sup> Lauraine G. Chestnut and David M. Mills, "A Fresh Look at the Benefits and Cost of the US Acid Rain Program," *Journal of Environmental Management*, Vol. 77, Issue 3 (November 2005), 252-266. Year dollars are 2000.

4. In 2003, EPA began to administer the NO<sub>x</sub> Budget Trading Program under the NO<sub>x</sub> State Implementation Plan, also known as the “NO<sub>x</sub> SIP Call.” The NO<sub>x</sub> Budget Trading Program (NBP) was a market-based cap and trade program created to reduce emissions of nitrogen oxide (NO<sub>x</sub>) from power plants and other large combustion sources in the eastern United States.

### 3. Regional, state, and local permit schemes

5. In 1994, the South Coast Air Quality Management District (AQMD) in southern California set up the Regional Clean Air Incentives program (RECLAIM), which regulates SO<sub>2</sub> and NO<sub>x</sub> emissions in that region.<sup>4</sup> The program began with a focus on facilities that emitted four or more tons of SO<sub>2</sub> or NO<sub>x</sub> per year. In RECLAIM, each firm receives trading credits equal to its annual emissions limit. The limits are based on past production and existing rules and control measures. Each year the number of credits is reduced. The credits are annual and can be bought and sold within the year they are issued. Firms can sell any credits that they have beyond their actual emissions.

6. The State of Illinois adopted the Emissions Reduction Market System (ERMS) for volatile organic compounds in the Chicago area.<sup>5</sup> The program went into effect in 2000 and focuses on major stationary sources that produce volatile organic compounds in the Chicago area; major sources are defined as sources that have baseline volatile organic compound emissions of 10 tons per “Ozone Season” (May 1 through September 30). The program issues trading units based on historical emissions, reduced by approximately 12%. The program is seasonal, such that firms must hold enough trading units to cover their emissions solely during this period. Permits can be bought and sold or banked for the following season. The trading units can be bought and sold from October 1 until December 31 during what is called a reconciliation period. The ERMS also has an account of trading units that can be bought if a firm cannot buy trading units on the open market.

7. The Regional Greenhouse Gas Initiative (RGGI) is a regional CO<sub>2</sub> cap and trade program in the northeastern U.S.<sup>6</sup> and covers fossil fuel-fired power plants that generate 25MW or more each year. The program commenced in 2009 and applied a regional cap on emissions which will continue to be reduced by 2.5 percent each year from 2015 to 2018. The program has three year compliance periods, meaning that at the end of each period the regulated plant must have an allowance for each ton of CO<sub>2</sub> that was emitted over the preceding three years. The majority of the allowances are distributed through auctions, which are held quarterly by each participating State. The allowances are tradable and can be banked. Given its regional nature, the RGGI recognizes the potential for emissions “leakage,” which occurs when polluters move outside of the regulated area while still providing the service that produces the pollution to the regulated area, thereby enabling the polluters to avoid regulation. The RGGI’s member states thus are encouraged to monitor for possible leakage. The program also allows greater flexibility through offsets, enabling a limited number of greenhouse gas emission reduction projects outside the electricity sector to count towards compliance towards the program.

8. Although some of these programs have been in place for a number of years, there has been no evidence of permit market manipulation. At least one empirical study on the effects of banking in the Acid Rain Program found that the amount of banking during the first eight years of the program was efficient.<sup>7</sup>

---

<sup>4</sup> Available at <http://www.aqmd.gov/reclaim/reclaim.html>.

<sup>5</sup> Available at <http://www.epa.state.il.us/air/erms/>.

<sup>6</sup> Available at <http://www.rggi.org/>

<sup>7</sup> Ellerman, A.D., and J.-P. Montero (2007), *The Efficiency and Robustness of Allowance Banking in the U.S. Acid Rain Program*. The Energy Journal 28: 47-71.

9. The EPA's experience with the Acid Rain Program provides a good model for implementing a cap-and-trade program and has greatly influenced the development of other cap and trade programs both in the U.S. and abroad. The Program provides clear and strong incentives along with simple rules. It also uses information technology to collect large amounts of data that is made available to stakeholders, including the public. This allows for multiple levels of assessment to measure progress of the program. A 2007 EPA study<sup>8</sup> of the Acid Rain Program listed "key lessons" about effective design and operation of cap-and-trade programs in the U.S., including:

- Clear, comprehensive legislation makes it easier to implement the program and minimizes legal challenges that can introduce uncertainty, delays, and additional costs;
- A solid, but adaptable, program foundation is a substantial benefit, allowing room for new information, practices, and technologies;
- Flexibility in compliance approaches streamlines the decision-making process, fosters innovation, opens new compliance alternatives, and creates competition among emission reduction options, thereby reducing compliance costs—and lower costs make it possible to seek greater environmental protections where necessary;
- Accountability is a prerequisite for flexibility -- regulated sources must be held accountable for accurately measuring and reporting all emissions, and complying with program requirements;
- Clear, simple rules are easier and less costly to implement; complexity may be required in some cases, but should be minimized whenever possible;
- Clear and strong incentives can encourage better monitoring and improve compliance with allowance holding requirements;
- Regulators can create a cooperative relationship with industry by focusing on results and assisting regulated sources in complying with program requirements;
- Cap-and-trade programs can provide cost-effective, broad, regional reductions of air pollution and should complement efforts to attain and maintain local air quality;
- Transparency of data and program operation provide an additional level of scrutiny to verify enforcement and encourage compliance, and inform stakeholders, including the public, about the program and its results; and
- Assessment is an important tool to measure progress toward the goal of the program.

#### **4. Carbon offsets and renewable energy certificates**

10. As noted above, the United States has not established a mandatory federal program for greenhouse gas emission permits, and consequently does not have a market in which Federal emission permits are being traded. It does, however, have a voluntary market for renewable energy certificates (RECs) and instruments that aim to reduce greenhouse gas emissions. REC markets are largely driven by

---

<sup>8</sup> See note 2 above.

State initiatives requiring a certain level of renewable energy, but also have a voluntary component and fulfill the broader national market demand for renewable energy.<sup>9</sup>

#### 4.1 *Carbon offsets*

11. Carbon offsets are credits or certificates representing the right to claim responsibility for greenhouse gas emission reductions, resulting typically from individual projects. To be credible, credits should only be issued for reductions that would not have occurred in the absence of the program (i.e., they should be additional). For example, a carbon offset provider might develop a project to install a landfill methane collection system or plant trees in an effort to reduce greenhouse gasses and, in turn, will sell the emission reduction credits to interested parties once they have been verified and certified by the regulator or an accredited third party. By acquiring these greenhouse gas reduction credits, purchasers, including individuals, businesses, and governments, seek to reduce their “carbon footprint” or to become “carbon neutral.” Offsets help these organizations and individuals fulfil environmental goals and provide a basis for their advertising claims (*e.g.*, “our coffee is carbon neutral”).

#### 4.2 *Renewable energy certificates*

12. In the United States, retail electricity customers can support renewable energy by purchasing either renewable electricity or renewable energy certificates. Under the first approach, consumers purchase renewable energy through traditional electricity contracts with their local utility or power provider, in areas in which such energy is sold. Such energy is often more expensive than conventional energy; consequently, consumers usually pay a premium for it. Generators can recover some of this premium by splitting their output into two products: the electricity itself, and certificates representing the renewable attributes of that electricity. Under this second approach, generators sell their electricity at market prices applicable to conventionally produced power, and then charge for the electricity’s renewable attribute separately by selling certificates to brokers and retailers for resale to individuals and organizational purchasers across the country who use them to characterize the conventional electricity they buy as renewable and lessen their carbon footprint. The REC market, therefore, helps renewable energy generators by expanding the number of potential renewable energy purchasers, possibly avoiding transmission costs associated with traditional contracts, and helping to ameliorate supply and demand problems associated with the intermittent operation of some renewable energy facilities (*e.g.*, solar power facilities).

13. Because there is no Federal mandate for renewable electricity in the United States, the interstate market for RECs is largely voluntary.<sup>10</sup> RECs do, however, play a role in mandatory markets as well. For example, many states require electricity providers to purchase a minimum percentage of their electricity from renewable sources. Since purchasing renewable energy directly is not always practical, most states allow providers to meet their quotas through the purchase of RECs.

14. Where carbon offsets and RECs are not generated to meet regulatory targets, they are bought and sold in voluntary markets, which are growing rapidly.<sup>11</sup> In these voluntary markets, no federal agency

<sup>9</sup> The following summary is based on the Federal Register Notice of the FTC’s January 8, 2008 workshop on the marketing of carbon offsets and renewable energy certificates (*available at <http://www.ftc.gov/os/2007/11/P954501carbfrn.pdf>*).

<sup>10</sup> RECs can play a role as carbon offsets for compliance, and emerging State and regional programs are actively considering offsets as a key component to achieving emission reduction targets.

<sup>11</sup> See United State Government Accountability Office, “*Carbon Offsets: The U.S. Voluntary Market is Growing but Quality Assurance Poses Challenges for Market Participants*” (Report to Congressional Requesters, August 2008), available at <http://www.gao.gov/new.items/d081048.pdf>.

currently has a comprehensive oversight role. In the absence of national regulation, voluntary third-party certification programs have arisen, and more are under development, to help reduce inappropriate practices and provide guidance to marketers through the development of industry standards.

15. An August 2008 United State Government Accountability Office Report on Carbon offsets found that:

16. “Increased federal oversight of the U.S. voluntary market [for carbon offsets] could enhance the market’s transparency and improve consumer protection, but may also reduce flexibility, increase administrative costs, and stifle innovation... Including offsets in regulatory programs to limit greenhouse gas emissions could also lower the cost of compliance...However... concerns about the credibility of offsets could compromise the environmental integrity of a compliance system.”<sup>12</sup>

## 5. U.S. agency activity in this field

17. The US Department of Justice Antitrust Division has been a long time proponent of market-based solutions in regulatory contexts, including in emissions trading. In particular, the Division has encouraged the auctioning of permits in situations as far back as the 1986 EPA phase-down of the use of asbestos,<sup>13</sup> and was involved in planning for the Acid Rain Program in the 1990s.

18. The Federal Trade Commission is currently reviewing its environmental marketing guidelines, also known as the Green Guides.<sup>14</sup> Last updated in 1998, the Green Guides outline general principles for all environmental marketing claims and provide specifics about certain green claims, such as degradability, compostability, recyclability, etc.

19. As part of its Green Guides review process, the FTC held a January 8, 2008 workshop on the marketing of carbon offsets and renewable energy certificates (RECs)<sup>15</sup> as detailed in a Federal Register Notice mentioned above.<sup>16</sup> The FTC solicited and received 57 public comments in connection with the workshop, that are available on its web site.<sup>17</sup>

20. The FTC also combats unfair and deceptive practices in these carbon offset and REC markets as part of its general consumer protection mission. Under the FTC Act, all marketers making express or implied claims about the attributes of their product or service must have a reasonable basis for their claims at the time they make them. In the environmental advertising realm, such reasonable basis often requires competent and reliable scientific evidence.

21. On October 6, 2010, the FTC released proposed revisions to the Green Guides for public comment.<sup>18</sup> The proposed revised Guides address RECs and carbon offset claims, neither of which were addressed in the older Guides. With respect to RECs, the FTC proposes that marketers should qualify

---

<sup>12</sup> *Id.*

<sup>13</sup> Comments of the United States Department of Justice on Asbestos; Proposed Mining and Import Restrictions and Proposed Manufacturing Importation and Processing Prohibitions, EPA Docket OPTS-52036 (June 30, 1986).

<sup>14</sup> See <http://www.ftc.gov/green>,

<sup>15</sup> See <http://www.ftc.gov/bcp/workshops/carbonoffsets/index.shtml>.

<sup>16</sup> *Supra* note 11 above.

<sup>17</sup> Available at <http://www.ftc.gov/os/comments/carbonworkshop/index.shtm>.

<sup>18</sup> See <http://www.ftc.gov/opa/2010/10/greenguide.shtm>.

“made with renewable energy” claims by specifying the sources of the energy. In addition, marketers should qualify their renewable energy claims if not all the product or package’s significant manufacturing processes were powered with renewable energy or conventional energy offset by RECs. Further, the FTC suggests that marketers that generate renewable energy (*e.g.*, by using solar panels), but sell RECs for all the renewable energy they generate, should not represent that they use renewable energy. With respect to carbon offset claims, the FTC proposes that marketers should support emission reduction claims with competent and reliable scientific evidence, and should not sell the claimed reductions more than once. Furthermore, marketers should disclose if the offset purchase funds emission reductions that will not occur for two years or longer. Finally, the proposed new Guides suggest that marketers should not advertise carbon offsets if the activity underlying them is already required by law.

22. The Dodd-Frank Wall Street Reform and Consumer Protection Act,<sup>19</sup> signed into law on July 21, 2010, establishes an interagency working group to conduct a study on the oversight of existing and prospective carbon markets. The Chairman of the FTC is a member of this working group.

23. The US Environmental Protection Agency’s Green Power Partnership is a voluntary program that supports the organizational procurement of green power by offering expert advice, technical support, tools and resources. The program encourages organizations to buy green power as a way to reduce the environmental impacts associated with purchased electricity use. The Partnership currently has hundreds of Partner organizations voluntarily purchasing billions of kilowatt-hours of green power annually. Partners include a wide variety of leading organizations such as Fortune 500 companies, small and medium sized businesses, local, state, and federal governments, and colleges and universities.

---

<sup>19</sup> H.R. 4173, 12 USC. §5301 *available at* <http://www.gpo.gov/fdsys/pkg/PLAW-111publ203/content-detail.html>.