



An Assessment of the EPA's SO₂ Emission Allowance Tracking System

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Abstract

On November 8, 1996, various Environmental Protection Agency (EPA) officials, scholars and industry representatives gathered at Resources for the Future (RFF) to examine the EPA's method for classifying private SO₂ allowance transactions by the Allowance Tracking System (ATS). The one-day workshop at RFF was designed to evaluate how well the EPA's classification scheme within the ATS currently meets the needs of constituencies with a vested interest in the allowance trading system, and to determine if other classifications would be more beneficial. The EPA has limited its collection of information to that which is necessary to ensure compliance with environmental goals. In particular, the EPA has interpreted its mission to be one of minimal interference in guiding the development of the allowance market and that its primary purpose is emission compliance and not the monitoring of transactions. Therefore, the goal of the ATS is to provide a central registry of recorded allowance transfers for the purpose of emission compliance. As a result, the ATS is unusual as a mechanism for monitoring market activity because it provides information about the buyer and seller of an allowance but does not provide price information. Furthermore, the EPA has limited its role so as not to exercise approval of individual allowance trades, and has excluded from consideration options for expanding the EPA's data collection effort. However, the EPA recognizes that the interests of Congress and the public extend beyond compliance with the environmental goals to include the development of allowance trading to help achieve these goals at the lowest possible cost. In addition, there is widespread interest in the development of SO₂ emission allowance trading as a prototype for other potential trading programs, and the ATS provides a potential template for the oversight role of the environmental regulator in programs such as these. Therefore, another goal of the workshop at RFF was to assess how well the ATS performs in promoting the development of allowance trading in general, and with respect to the interests and needs of each of the constituencies interested in the SO₂ allowance trading program. This discussion paper incorporates observations, suggestions and concerns expressed during this workshop. Furthermore, this discussion paper concludes with recommendations regarding the EPA's current classification methodology.

Key Words: transaction costs, regulated industries, electric utilities, emissions

JEL Classification Nos.: D23, D49, H70, K23, L94, Q25

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INTRODUCTION

Allowance trading is an innovative feature of Title IV of the 1990 Clean Air Act Amendments, intended to reduce the costs of compliance with the goals of the statute. Title IV is a precedent-setting approach to environmental legislation that places government in the role of setting standards of performance, while leaving to the private sector the task of finding the best way to meet these standards. This approach provides the firm with the flexibility to find the most cost effective way of achieving the standard. The allowance trading program has the potential of dramatically lowering the costs of attaining the environmental goal of a national average cap on SO₂ emissions.

Title IV requires the Environmental Protection Agency (EPA) to establish a system for the collection of information on allowance transfers, primarily for the purpose of monitoring compliance. The system that has been established is known as the Allowance Tracking System (ATS). Although its primary function is to facilitate regulatory oversight of compliance, the information that is available in the ATS is of interest to a number of constituencies for various purposes. Allowance brokers and electric utilities potentially could rely on the ATS to provide information about trading activity. Regulators could rely on the ATS to provide information that may be relevant to oversight of utility compliance activities and cost recovery. Policy analysts and Congress could rely on the ATS to provide an indication of the performance of the market and its effect on the costs of implementing emission reductions under Title IV. In

¹ The authors are, respectively: Research Assistant, Energy and Natural Resources Division, Resources for the Future; Senior Fellow and Division Director, Energy and Natural Resources Division, Resources for the Future; and Fellow, Quality of the Environment Division, Resources for the Future. This research was supported in part by funding from the EPA. We would like to thank the participants at RFF's November 8, 1996 workshop on the EPA's Allowance Tracking System for their constructive contributions to this report. Furthermore, we received helpful comments from EPRI's Keith White. In addition, we are especially grateful to Melanie Dean, Joe Kruger and Alex Salpeter of the EPA's Acid Rain Office for their generous assistance. All remaining errors are the responsibility of the authors.

addition, environmental advocates are interested in the ATS for information on the influence of allowance trading on the geographic or temporal pattern of emissions.

On November 8, 1996, various EPA officials, scholars and industry representatives gathered at Resources for the Future (RFF) to examine the EPA's method for classifying private SO₂ allowance transactions by the Allowance Tracking System (ATS). The one-day workshop at RFF was designed to evaluate how well the EPA's classification scheme utilizes information in ATS to meet the needs of constituencies with a vested interest in the allowance trading system, and to determine if other classifications would be more beneficial.

The EPA has limited its collection of information to that which is necessary to ensure compliance with environmental goals. In particular, the EPA has interpreted its mission to be one of minimal interference in guiding the development of the allowance market and that its primary purpose is emission compliance and not the monitoring of transactions. Therefore, the goal of the ATS is to provide a central registry of recorded allowance transfers for the purpose of emission compliance. As a result, the ATS is unusual as a mechanism for monitoring market activity because it provides information about the buyer and seller of an allowance but does not provide price information. Furthermore, the EPA has limited its role so as not to exercise approval of individual allowance trades, and has excluded from consideration options for expanding the EPA's data collection effort. It is the EPA's contention that the private sector should fill the information void, to the extent that the market needs a clear indication of allowance prices in order to be able to function. Such information is widely available from several sources and is reasonably accurate.

However, the EPA recognizes that the interests of Congress and the public extend beyond compliance with the environmental goals to include the development of allowance trading to help achieve these goals at the lowest possible cost. In addition, there is widespread interest in the development of SO₂ emission allowance trading as a prototype for other potential trading programs, and the ATS provides a potential template for the oversight role of the environmental regulator in programs such as these. Therefore, another goal of the workshop at RFF was to assess how well the ATS performs as an evaluation mechanism for allowance trading activity, with respect to the interests and needs of each of the constituencies interested in the SO₂ allowance trading program. This paper is an assessment of the ATS in

this regard. Observations, suggestions and concerns expressed during the workshop have been incorporated into this assessment.

THE ORGANIZATION OF ATS

The ATS is a database operated and maintained on EPA's National Computer Center. While ATS itself cannot currently be directly accessed, EPA provides weekly extracts of the most relevant information. These extracts, i.e., electronic files, can be assessed electronically by the public through the World Wide Web (address: <http://www.epa.gov/acidrain/atsdata.html>). As discussed below, expanded capabilities that will allow the public interactive access to these data files are in development at the EPA and are expected to be available in the summer of 1998. The following files derivable from ATS are the most relevant to the trading analysis:

ACCOUNT -- contains information such Account Number, Account Name, Account Rep ID, Alternate Rep ID, Plant ID/ORISPL, Unit/Boiler ID and various flags denoting type of account.

REPRESENTATIVES -- contains information such Account Rep/Alternate ID, Name, Address, Phone Number.

OWNERS -- contains Account Number, Owner ID, Owner Name, Binding Parties.

TRANSACTIONS -- contains information such Transaction Number, Transaction Type, Date Received, Date Recorded, Transferee Account, Transferor Account, Account Rep for Transferee, Account Rep for Transferor, Amount of Allowances Transferred.

ALLOW_IN_TRANSACT -- contains information on allowances involved in a given transaction such as Transaction Number, Starting Serial Number, Ending Serial Number.

ALLOW_HELD_BY_ACCOUNT: contains information on Account, Allowance Use Year, and Serial Number.

UTILITY -- information on the utility company that operates (responsible for dispatching) a given plant.

PLANT -- contains information on the State where Plant Located.

PLANT_UTILITY_XREF -- a file combining the PLANT and UTILITY information, for effective retrieval/query.

These files provide various ways to view current allowance data. These are very large files. For example, the TRANSACTION file includes over 9,500 transactions involving over

41 million allowances. The TRANSACTIONS file may include transactions among unit accounts, which are accounts associated with generating units, and general accounts, which can be set up by any person, group or corporation.² The general account differs from the unit account because it is not associated with an individual generating unit. There are a variety of reasons that the data in these files may not provide information in a form that is useful to potential users. For instance, a transfer from a unit account to a general account and another transfer back to the original unit account would show up as two separate transactions that actually cancel each other out. Such a sequence of transactions is not unusual. To understand the data, the user needs to conduct some analysis. However, the website does not offer the option of merging files or conducting searches yet. However, files can easily be downloaded and manipulated by interested parties.³

To facilitate monitoring of the allowance market for the various purposes suggested above, the EPA's Acid Rain Division has devised a routine to categorize allowance transfers. EPA runs several queries on ATS data to produce a file with most of the information necessary to classify a trade. Using this consolidated information, the EPA can organize allowance transfers according to various categories that are viewed as meaningful for economic and environmental measures of the program. The EPA places allowance transactions in the following categories: Intra-Utility, Inter-Utility, Utility to Broker, Broker to Utility, Utility to Fuel Company, Fuel Company to Utility, Reallocation and "Other." These categories represent all private trades reported to ATS. Since the ultimate goal is emissions compliance by utilities, allowance transfers viewed as meaningful for economic and environmental measures of the program involve those allowances acquired by utilities. As noted, the Acid Rain Division is in the process of converting the ATS from a mainframe system to a Windows based system. The new windows based system should allow for interactive data filtering and manipulation. Currently, users must rely on analysis already conducted and posted by the EPA, or download the entire database to another computer to perform independent analysis. In addition, the Acid

² A unit may be owned by more than one operating company. A transfer from a unit account to a general account of any of the owners is classified a reallocation. For further explanation, see the discussion of Reallocations in the text.

³ Another feature utilizing the above ATS data, but not available on the website, is a "history search." This feature enables the EPA to track the entire history of an allowance by its serial number.

Rain Division is in the process of developing an electronic transfer program, which converts the ATS into a paper-less system. A pilot program is planned for next year with the Southern Company. However, there are some obstacles that will need to be resolved before the electronic transfer program is fully implemented, such as an amendment to the current requirement that a transfer include both the seller's and buyer's signature.

CLASSIFYING ALLOWANCE TRANSACTIONS AND CAPTURING TRANSACTIONS COSTS

The primary interest of most users of the ATS involves a measure of "meaningful transactions." A transfer between units owned by the same utility might be meaningful for analysis of the environmental effects of sulfur dioxide emissions. Such a transfer also may be meaningful for an assessment of cost savings from flexibility resulting from transfers within a firm. However, the greatest interest among users of the ATS hinges around economically meaningful transfers between economically separate organizations, which provides evidence of the role of allowance trading for compliance. It also provides information about the value and availability of allowances that are of direct interest to utilities and brokers.

The Acid Rain Division's *current* taxonomy for categorizing allowance transactions and its *previous* taxonomy concentrate on organizing transactions to identify economically meaningful transfers among separate organizations. The main distinction between the *previous* classification scheme and the *current* scheme is the definition of inter-utility transactions. These approaches to the classification are presented in full in Dean and Kruger (1997).⁴ The categories that are used to organize transfers along with observations and potential problems are listed below. Although the categories themselves are stable, the categorizations of a transaction between two particular entities may become dated due to mergers and acquisitions.

⁴ "Using EPA's Allowance Tracking System to Assess the Allowance Market," Melanie Dean and Joe Kruger, *Proceedings of AWMA/Acid Rain Electric Utilities Conference*, January 1997.

Figure 1. Current methodology:

1,918,979 Allowances Acquired by Utilities through Private Transactions Reported to ATS from 1/96 through 9/96

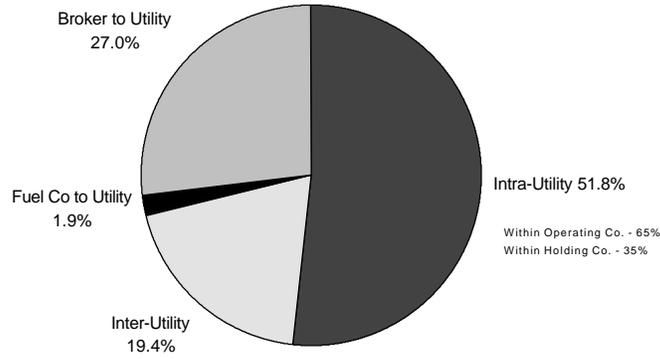
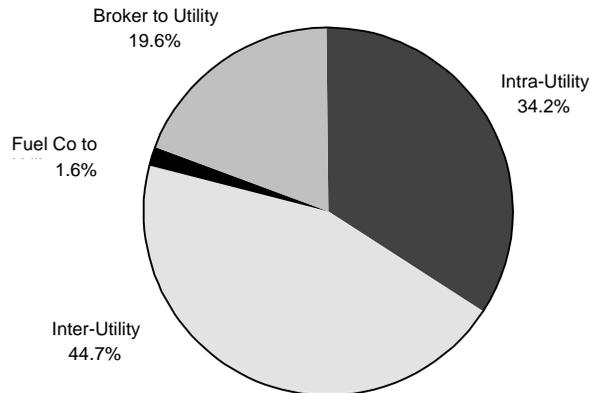


Figure 2. Previous

1,895,061 Allowances Acquired by Utilities through Private Transactions Reported to ATS from 1/96 through 9/96



*Two Main distinctions from the current methodology - No breakdowns within the Intra-Utility trades and trades between two different operating companies are classified as Inter-utility trades (even if they are within the same holding co.)

Inter-utility⁵

The *current* scheme defines inter-utility transfers as any transfer of allowances from one utility operating company's account to a different operating company's account, provided the operating companies are not controlled by the same holding company. These are viewed as economically distinct transactions. If the transaction involves a trade between two units affiliated with the same holding company, it is classified as an intra-utility transaction under the current scheme.

The *previous* scheme classified all transactions between operating companies as inter-utility transactions, without a clear differentiation about their status with regard to a holding company. As a result, this scheme overstated inter-utility transactions compared to the current approach. Figures 1 and 2 illustrate the overstatement for the period of 1 January 1996 through 31 October 1996, although the magnitude of the overstatement is inflated in this example because January had the largest number of intra-utility transfers in the history of the trading program. To improve the accuracy of the classification, the current classification algorithm determines the unit's holding company affiliation before classifying the transaction.⁶ One reason for emphasizing the difference among these type of trades in the current scheme is that these type of trades have different transactions costs.

Reallocation

Reallocation transfers are defined as any transfer from a unit account to a general account of the same operating company or holding company (and, in given circumstances, vice versa), any pooling activity, or any transfer in which the transferor is the partial owner of the transferee account (and vice versa).

Since the statute requires each unit (not plant) to be in compliance at the end of each year, the initial allocation of allowances goes to the generating unit account. Firms may want to aggregate allowances from various unit accounts into one or more general accounts to more

⁵ At the workshop, the EPA presented two sub-categories for the Inter-utility classification: economically distinct and "among co-owners." As a result of the workshop, the EPA has moved the "among co-owners" distinction to the Reallocation classification.

⁶ Holding company information is not part of the ATS, but can be found in publicly available sources such as The Electrical World's *Directory of Electric Power Producers*.

easily assess allowance holdings and needs for the future, and potentially to facilitate allowance transactions with other firms. However, when an allowance is used for compliance at a specific generating unit, the allowances must first be reallocated to the unit account associated with that generating unit.

Furthermore, when a generating unit is owned jointly by multiple operating companies, the allocation of allowances to that unit also goes to the unit's account which, as in all cases, has an authorized account representative. That representative is responsible for reallocating the allowances among co-owners according to mutually agreed upon guidelines. Some co-owners view the allowances as assets and these owners want it reflected on their books, which provides one of many possible motivations for reallocation among co-owners. The transfer of allowances to a general account obfuscates the question of compliance at a unit until the time for truing up comes at the end of the year.

Although the ATS data indicates when there are co-owners of a unit, the ATS does not indicate how an account for that unit will be managed among co-owners. Some state PUCs prevent automatic separation of allowances among co-owners. Consequently it is not possible for the EPA to employ a consistent algorithm for categorizing allowance reallocations among co-owners. One possibility would be for the agency to gather information from the manager of the unit account about the rules for reallocation, but this takes the agency in a direction other than its principle mission which concerns compliance activities. The goal of the EPA's categorization algorithm is to indicate these as reallocations rather than economically meaningful inter-utility transfers.⁷

The EPA currently evaluates the "ownership" on both sides of each transfer. This is done by determining the binding parties of both the transferee and transferor of allowances. If there is overlap of any degree, the EPA classifies this transaction as a Reallocation. As a result, this approach captures *all* transfers among co-owners as reallocations. This approach would be imperfect because in some cases a co-owner may reallocate an allowance originally allocated to a different unit to the co-owned generating unit for compliance purposes, while allocating allowances from the co-owned unit to other purposes. This reallocation may in fact be an Intra-utility transfer. However, for the sake of the methodology's validity, the EPA has decided to err

⁷At the workshop, the EPA presented transactions among co-owners as Inter-utility transfers. However, as a result of the workshop, the EPA now considers *all* transactions among co-owners as Reallocations.

on the conservative side by under reporting transactions that may be economically significant. Although the EPA has acknowledged that this methodology will underestimate Intra-utility transfers, this methodology is the best plan that has been suggested to date.

Intra-utility

Within the intra-utility transactions, there are two sub-categories: transactions between units within the same operating company (we label these "Intra-utility Class 1") and transactions between units owned by different operating companies within the same holding company (we label these "Intra-utility Class 2"). The sub-category distinction is useful because each sub-category has different transactions costs. An Intra-utility Class 1 transaction is defined as either a transfer from one unit account to another unit account within the same operating company or, in some cases, a transfer from a general account of one operating company to a unit account of the same operating company. An Intra-utility Class 2 transaction is defined as either a transfer from a unit account of one operating company to another unit account of a different operating company within the same holding company or, in some cases, a transfer from a general account of one operating company to a unit account of a different operating unit within the same operating company.

Trades within the same operating company are likely to have lower transaction costs than trades between operating companies within the same holding company. In some cases trades among operating companies within the same holding company can have transaction costs that are higher than inter-utility trades. One reason is that the Public Utilities Holding Company Act (PUHCA) requires special reporting requirements for holding companies (Parent companies that are not holding companies under PUHCA are not required to follow these requirements.). These reporting requirements have an impact on transactions costs.⁸ Any kind of reallocation or transaction between operating companies (under the PUHCA) must be documented at the market price. Since it is difficult to adhere to these reporting requirements, utilities turn to the market. This is one of the reasons for treating these trades differently.

⁸ Transaction costs for trades among operating companies within the same holding company may have be large when the operating companies are in different states and thus have different regulatory rules.

Broker/trader to utility, utility to broker/trader, fuel company to utility and utility to fuel company

These classifications are relatively self-explanatory. The EPA created these categories specifically to report on the data and to limit its interpretive role. However, there is the possibility of confusion in the case where some companies perform dual roles. To clarify the role of these "dual role" market participants, EPA determines from the participant its predominant role, and then EPA classifies them accordingly.

One important concern in registering trading activity involving brokers is the desire to avoid double-counting brokered transactions. This could occur if a broker took possession of an allowance and registered its possession with the ATS. If this was the vehicle for managing a transfer between utilities, two transactions would be reported when only one meaningful transaction really occurred.

An important factor concerns the type of brokers involved in a trade, and there are basically two types of brokers. One type takes title to an allowance and the other that doesn't take title. As a result, it is difficult to determine the incremental transaction costs associated with brokered transactions. Transactions involving brokers that do not take title will not be captured by the ATS, so double-counting will be avoided.

Other

All transactions that do not fall into the previous categories are classified as "other." So far the "other" category involves an insignificant number of transactions and allowances.

AN ILLUSTRATION OF THE CURRENT TAXONOMY

The current taxonomy will successfully organize the majority of private allowance transfers registered with the EPA into useful and descriptive categories. Tables 1 and 2 illustrate the distinction between reallocations, inter-utility and intra-utility trades. However, as the previous section indicates, there are still ample opportunities to mis-classify market activity.

As noted above, the intra-utility trades involve two sub-categories in which we have called "Intra-utility Class 1" and "Intra-utility Class 2" trades. Furthermore, each sub-category had two possibilities: one strictly involving unit accounts and the other involving general accounts. Table 1 illustrates Intra-utility trades, both Class 1 and Class 2, involving only unit accounts. Table 1 also includes an example of an inter-utility trade. In contrast, Table 2

illustrates Intra-utility trades, both Class 1 and Class 2, involving general accounts. Furthermore, Table 2 combines intra-utility trades with reallocations to illustrate the similarity between these types of trades.

Table 1. Examples of Inter-Utility and Intra-Utility Trades

unit account operating company A	Inter-Utility →	unit account operating company B
unit 1 account operating company A	Intra-Utility Class 1 →	unit 2 account operating company A
unit 1 account operating company A subsidiary of holding company Z	Intra-Utility Class 2 →	unit 2 account operating company B subsidiary of holding company Z

Table 2. Examples of Reallocations and Intra-Utility Trades

unit 1 account operating company A	Reallocation →	general account operating company A	Reallocation →	unit 1 account operating company A
unit 1 account operating company A	Reallocation →	general account operating company A	Intra-Utility Class 1 →	unit 2 account operating company A
unit 1 account, operating company A subsidiary of holding company Z	Reallocation →	general account, operating company A subsidiary of holding company Z	Intra-utility Class 2 →	unit 2 account, operating company B subsidiary of holding company Z

Table 3. Examples of Trades involving Co-owners

unit 1 account co-owned by operating companies A, B, C	Reallocation →	general account operating company A	Inter-Utility →	unit account operating company D
unit 1 account co-owned by operating companies A, B, C	Reallocation →	general account operating company A	Reallocation*	unit 2 account co-owned by operating companies A, B, C
unit 1 account co-owned by operating companies A, B A: subsidiary of holding company Z B: subsidiary of holding company Y	Reallocation →	general account operating company A	Reallocation*	unit 2 account co-owned by operating companies C,D C: subsidiary of holding company Z D: subsidiary of holding company X
unit 1 account co-owned by operating companies A, B, C	Reallocation →	general account operating company A	Reallocation →	unit 1 account co-owned by operating companies A, B, C
unit account co-owned by operating companies A, B		Inter-Utility →		unit account operating company C
unit 1 account co-owned by operating companies A,B		Reallocation*		unit 2 account co-owned by operating companies A,C,D
unit 1 account co-owned by operating companies A, B A: subsidiary of holding company Z B: subsidiary of holding company Y		Reallocation*		unit 2 account operating company C subsidiary of holding company Z

* This is an example that could be classified as an Intra-utility Class 1 transfer and as a result would not be captured as such by the ATS.

Table 3 captures the issues involving co-ownership of generating units. There is the possibility of confusion in classifying Reallocations, Intra-utility or Inter-utility where a unit has multiple owners. As explained above, the EPA's categorization algorithm is to determine the binding parties (co-owners of generating unit accounts or general accounts) of both the transferee and the transferor of a transaction. If there is *any* degree of overlap the trade is classified as a Reallocation.⁹ If ownership differs on both sides of the trade, the trade is considered an Inter-utility trade. This approach is imperfect because in some cases a co-owner may reallocate an allowance originally allocated to a different unit to the co-owned generating unit for compliance purposes, while allocating allowances from the co-owned unit to other purposes. This reallocation may in fact be an Intra-utility Class 1 transfer.

Due to this classification methodology, the EPA's *current* taxonomy will underestimate Intra-utility transfers. Nonetheless, since the Reallocation methodology errs in a conservative manner, this categorization algorithm is the best option short of expanding the EPA's data collection. It is evident that, as the number of co-owners increase, it is more difficult to categorize the trades. Furthermore, as noted before, as operating companies merge, this problem is exacerbated.

STRATEGIC BEHAVIOR IN TRADING ACTIVITY

Several hypothetical or imagined behaviors by participants in the allowance market have led to questions about whether there is strategic behavior that will obscure important allowance trading activities. One suggestion is that brokers or utility companies might "churn" the market in order to register a false level of trading activity. However, according to participants at the RFF workshop, brokers do not perform extra transactions just to "show" activity. Furthermore, the ATS does not capture transactions unless they are reported to the ATS, which involves a further level of accounting effort that would discourage "churning" the market.

An obvious motivation for strategic behavior stems from the current regulated nature of the utility industry, both for purposes of environmental compliance and for cost recovery. There are numerous interested parties including environmental groups and rate payers who would like to have a say in the decisions of utilities. In this light, maneuvers to obfuscate

⁹ As noted before, this categorization algorithm may miss some economically distinct transactions.

trading activity might be viewed as a fundamental contradiction between the interests of the public and the private. Some observers have suggested that utilities have occasionally used forward contracts to postpone taking possession of allowances and thereby avoid or postpone either regulatory interference or the attention of environmental watchdog groups.

The impending restructuring of the electricity industry, accompanied by some degree of deregulation or "re-regulation," also has strategic implications for participants in the allowance market. Allowance trading activity can be a signal of future investment plans. Further, since allowances constitute a sizable asset themselves, a utility may want to veil its activity in the allowance market, for competitive reasons. Since trades do not have to be recorded with the ATS until they become relevant for compliance, there may be less information content about actual trading volume in the ATS in the future than there has been to date. In the future, the motivation for the use of instruments such as forward contracts may follow from the competitive pressures of the industry.

For these reasons there is an apparent conflict between the interests of analysts who wish to obtain detailed information about the market, presumably through the ATS, and the interests of participants in the market who wish to keep information about their own plans and operations private. The paradox is that to the extent the interest for public disclosure prevails, providing a better measure of market performance, the market may do less well, as participants retreat from public scrutiny or the scrutiny of their competitors. The advice from many participants seems to be that the market will work best if it is left alone. However, if the SO₂ trading program and the ATS are to serve as a basis for other regulatory experiments at the national or state level, there will have to be some meaningful way to gauge the performance of these institutions and to garner lessons for the design of new ones.

WHAT NEEDS TO BE DONE TO IMPROVE THE MARKET, AND IS THERE A ROLE FOR ATS IN DOING SO?

This question invoked opposing views from participants at the RFF workshop. One view argued there is nothing wrong with the ATS or the market. The market is currently thin and in time will become more active. Furthermore, the only existing problem is "bad" information. From this perspective, when the EPA puts out incomplete information it leads to confusion. Moreover, the market doesn't need the EPA to analyze the data because private

market analysts can do it. Private sources are supplying market information that is valued higher than that supplied by EPA.

A contrasting view is there are inadequacies in the market and that private sources of market information that may cause confusion. In particular, private sources of information may not be reliable for policy evaluation purposes. The EPA can provide a source of information that in principle would be free of any bias. This view prompted the following rejoinder: "What makes the EPA's interpretation right and all of the others wrong?"

If the information that EPA supplied was transparent and objective, then there would be no opposition to the EPA supplying it. However, if the information was transparent and objective, then why would the market need it? However, one might answer that the EPA is the primary institution with perspective, incentive and responsibility to identify shortcomings in the market if they exist. The organization of data in the ATS is the way such potential shortcomings can be identified. In many cases, the proprietary interests of the private parties may limit their disclosure of data or it may render data too expensive for "public interest" groups seeking access.

There is also a difference of opinion over how well the market is working. Many market observers note that some potentially important traders have yet to get into the market, with the result that sizable potential cost savings are unrealized. The ATS is the source of information that would allow an analysis of this issue. Nonetheless, to say the market is partly broken is not to say that it needs to be fixed, but indeed the infant market may do well if left alone, especially under increasing competitive pressures in the industry to find ways to reduce costs. In any event, there is little to suggest that manipulation of information in the ATS or changes in the collection of data are ways to get players in the market.

OBSERVATIONS ABOUT THE FUTURE

Several changes are occurring that signal a maturation of the allowance market. One is in the public attitude with respect to the role of allowance trading as a means to reduce the cost of pollution control. Many observers suggest that environmental advocacy groups are no longer interested in looking at each trade from an environmental perspective. These groups have finally moved over to the EPA's stance that, for environmental purposes, aggregate trades and emissions are important, not individual trades and emissions. This shift in attitude seems

to indicate that one constraint on active participation in the market that has deterred some potential trading activity, the harsh scrutiny of advocacy groups and negative characterizations in the media, may be of diminished importance in the future.

The second trend that bodes well for the allowance market is increasing competition in the electric industry and the resulting pressure to reduce costs. In the future this pressure may override other obstacles that may have hindered the allowance trading activities of some utilities to date. Ironically, though, the move toward a more competitive industry environment will also make it harder for analysts to gather information from market participants, as it will be in the interests of those participants to veil their activities for strategic competitive purposes.

In Phase I of the SO₂ trading program, which began in 1995, the goal of most utilities has been to over-comply with necessary emission reductions in order to bank allowances for Phase II. In doing so, utilities have been able to put off capital costs as long as possible, including installing scrubbers. Since there is an abundant supply of Powder River Basin (PRB) coal (low sulfur coal) at relatively low prices, compared to the costs of capital investments for compliance, there may be further delays in the capital investments compared to what was expected when the program was adopted in 1990. The opportunity to delay large investments is consistent with the value of waiting in making capital investments in an uncertainty environment. The implication is that the flexibility implicit in the allowance trading program will be put to great use.

One area where market participants may desire greater information concerns a timely report of emissions data. Although the brokers and the utilities in general currently do not look at the emissions data, but improved access to emissions data would be useful in determining what companies are actually doing, such as, for example, a decision to burn low or high sulfur coal.

SUMMARY AND RECOMMENDATIONS

The fundamental test for the EPA's current taxonomy is whether it provides information that is potentially "wrong" or easily "misinterpreted." Workshop participants agree that the current classification scheme passed this test and offer widespread support for the EPA's current methodology for categorizing allowance trading activity. In summary, the

current classification provides information that is of widespread interest and runs little risk of providing false information.

Our analysis and the discussion at the workshop lead us to recommend the EPA proceed with its current classification methodology. However, we offer the following suggestions to clarify the methodology.

1. Documentation of the definition and limitation for the methodologies should be available with the data.
2. Replace all references to "holding company" with "parent company." In addition, it is suggested that a footnote describing why the term "holding company" was avoided (i.e., Public Utility Holding Company Act) be incorporated into the online documentation.
3. The documentation should incorporate visual examples to delineate the differences between a Reallocation, an Inter-utility trade and an Intra-utility trade.
4. The documentation should incorporate a general note indicating that the ATS is designed primarily for compliance purposes and has limitations when used for evaluation purposes. Further, this note should indicate the ATS only captures trade activity that is recorded with the EPA. Some trades may not be captured by the ATS until those allowances are used for compliance. Hence, the ATS transaction date may not be the actual trade date. Other limitations on the ATS data as a measure of allowance trading activity should be made explicit.
5. The EPA should provide its data in an interactive file format. The interactive format should allow the user to conduct various searches such as the number of inter-utility transactions, number of interstate transactions, number of transactions within a state, transaction type, history search (as indicated above) and so on.
6. Due to the concerns regarding transactions costs and market analysis, it is recommended that the EPA incorporate titles for the Intra-utility sub-categories. We utilized "Intra-utility Class 1" and "Intra-utility Class 2" as titles to make the discussion regarding intra-utility trades as transparent as possible.

Participants at the November 8 meeting included:

- Carlton W. Bartels, Director of the Environmental Brokerage at Cantor Fitzgerald;
- Elizabeth M. Bailey and A. Denny Ellerman, from MIT's Center for Energy and Economic Policy Research;
- Doug Bohi, Dallas Burtraw and Ron Lile, from Resources for the Future;
- Daniel Chartier, Manager of Emissions Trading at Wisconsin Electric Power Company;
- Melanie Dean, Joe Kruger, Brian McLean, Sharon Saile, Alex Salpeter, Claire Schary, Mary Shellabarger, Janice Wagner, all from the EPA's Acid Rain Division;
- Andrew Ertel, Manager of the Emissions Brokerage Desk at Natural Resources Group, Inc.;
- Gary Hart of Southern Company Services, Inc.;
- Ken Rose, from the National Regulatory Research Institute at Ohio State University;
- George Spencer, Editor of the *Air Daily*.