DISCLOSURE IN THE ELECTRICITY MARKETPLACE: A POLICY HANDBOOK FOR STATES

CENTER FOR CLEAN AIR POLICY

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Introduction

This handbook for state and regional policy makers was developed as part of the second phase of the Center for Clean Air Policy's *Air Quality and Electricity Restructuring Dialogue*, a multi-year effort to develop measures that avoid or mitigate potential adverse environmental consequences associated with restructuring. The Dialogue participants -- representatives from utility, regulatory and environmental interests from across the country -- endorsed disclosure by electricity suppliers because of its potential to improve consumers' awareness of the trade-offs between the environmental impacts and the price of their electricity choices in a deregulated world. Disclosure provides the information customers need to make decisions regarding the environmental attributes of their generation sources. Disclosure also protects buyers and sellers from deceptive or fraudulent claims.

Over the course of a number of months, participants in the Center's Dialogue forged a consensus on basic goals and objectives of disclosure and on the need for mandatory disclosure for all suppliers. When it came to deciding how disclosure should be implemented, however, there was a strong divergence of opinion. This handbook presents the views of the Dialogue participants on issues where there was agreement and presents policy makers with options on other issues -- what type of information to require, how to verify the information, what type of tracking system is needed and how pollution trading markets might affect disclosure. The advantages and disadvantages of each option are outlined along with other factors policy makers may need to consider when making these decisions.

The handbook is geared to state and regional decision makers. Implementation of disclosure has already begun at this level, with a number of state legislatures or utility commissions endorsing disclosure as part of their deregulation strategies. As each state moves ahead with deregulation at its own pace, it is important that disclosure policy develops in lock step with retail access.

The Center is also working with its Dialogue participants to develop a federal disclosure policy recommendation. Federal-level action could ensure that disclosure protects all consumers equally and is implemented in the most cost-effective and consistent manner. Meanwhile, state action on disclosure will provide opportunities to test the effectiveness of various approaches, and will help inform federal policy makers. We hope that this handbook can provide guidance as states grapple with complex decisions and consumer information needs under deregulation.

The first section of the handbook presents recommendations on the goals and principles that should guide development of disclosure policy. The second section provides a detailed discussion of options for how to implement disclosure. The appendix is a review of current state activity in adopting disclosure as part of electric utility deregulation.

1. Goals of Disclosure

The development of disclosure policy and criteria for evaluating the success of the effort must be based on clear policy goals. The participants in the Center's Dialogue meetings agreed to the following goals for disclosure:

- ***Disclosing information to potential buyers about the price and characteristics of electricity facilitates transactions in the market***.

Competitive markets function relatively efficiently, as long as three conditions of competition are met -- (1) an adequate number of sellers or suppliers so that each supplier acts as a price taker, (2) suppliers are free to enter and exit the market at will, and (3) consumers have *sufficient* information to facilitate well-informed choices among suppliers. At a minimum, buyers need price information in a format that allows comparison between similar products and information that allows buyers to distinguish among electricity suppliers that claim to be different. One way electricity suppliers have chosen to distinguish themselves from one another is to identify the generating source and its environmental characteristics.

- ***Disclosure can provide consumer and supplier protection against false advertising and fraud.***

Providing information alone will not protect buyers and sellers against fraud. Information must be accompanied with a system for guaranteeing that the information is comparable and accurate. Disclosure combined with verification protects consumers from buying electricity based on false claims, and also protects suppliers with legitimate product claims by upholding the reputation and the credibility of the market.

There are two distinct levels of consumer and supplier protection: (1) making sure that suppliers are able to substantiate their claims about the power; and (2) making sure that buyers are actually receiving what they contracted to buy.

- ***Disclosure educates consumers about the environmental implications of their power choices***.

Market research indicates that the majority of consumers think the environmental impact of their product choices and behavior is important. Yet many consumers do not fully understand the relationship between their electricity use, such as turning on a light, and the environmental consequences of the electricity generation process. Disclosure begins the process of educating consumers by providing easy to understand information to raise awareness of the differences among generation options. Additional consumer education

will likely be needed to ensure that consumers fully understand the information they receive under disclosure.

- ***Disclosure promotes competition among electricity suppliers based on both quality and price.***

Price is likely to continue to be the most important consideration for the majority of consumers when using electricity and making choices among suppliers. But market research indicates that, given the opportunity, consumers will take into account the trade-off between price and the quality of the product, including electricity.[1] With disclosure of additional information about the generating sources, their characteristics and location, and differences between companies' images or reputations, buyers can exercise their preferences about both quality and price.

2. Criteria for an Effective Disclosure Policy

The Dialogue participants also discussed criteria that could be used to formulate an effective disclosure policy and measure its success. They agreed that the following criteria were appropriate:

- **Uniformity** is critical to make the information comparable and understandable. A national system of uniform disclosure standards is preferable to avoid overlapping and conflicting disclosure requirements in each state, but states will and should move ahead to adopt disclosure policies in conjunction with retail access. To reduce the chance of contradictory information requirements, states can work with their neighbors to coordinate disclosure requirements regionally and should ensure that states within the same region work closely with transmission and dispatch entities (such as an Independent System Operator or a Regional Transmission Group) to ensure information requirements can be met.

- Information must be **simple and understandable.** The National Council on Competition and the Electric Industry is sponsoring extensive market research to determine both what consumers want to know about their power choices and the best way to present information to them.[2] Their market research found that simply supplying environmental information such as emissions per kWh or fuel mix may not be adequate to help consumers weigh their choices in terms of health or environmental impacts. The Dialogue participants agreed that disclosure should be accompanied by a state or federally approved **education program** to help consumers understand and

[1] Farhar, Barbara. *Trends in Public Perceptions and Preferences on Energy and Environmental Policy, 1993.* National Renewable Energy Laboratory. Documents decades of public opinion polls on consumer decisions on energy-related matters.

[2] Levy, Teisl, Halverson, & Holt. "Information Disclosure for Electricity Sales: Consumer Preferences from Focus Groups," July 1997; and Teisl & Halverson. " Consumer Preferences from Focus Groups -- Rocky Mountain West," July 1997. Further studies are forthcoming.

interpret the information. Several states have made financing a state-sponsored consumer education program an integral part of their disclosure recommendations to their legislatures. Some states are also including benchmark information -- a standardized reference level of emissions (regional average or a target level of emissions) -- to improve consumers' understanding.[3]

- The information needed for disclosure must be **practical to track and report,** yet detailed enough to be meaningful. It is important to balance the need for accuracy, availability of information and the administrative ease with the opportunities for gaming or manipulating the system for competitive advantage.

- Environmental information should be presented in a way that is **objective and verifiable.** Historic performance should serve as the basis of disclosure and enforcement to the extent possible since it can be verified most easily. Some accommodation of prospective environmental disclosure is also needed for new generators. Prospective performance claims must have a reasonable basis, that is, be verifiable based on "competent and reliable evidence."[4]

- Standards or rules for disclosure should be **flexible** and should evolve as consumer needs dictate; for instance, disclosure may be expanded to include other environmental or economic attributes.
- States should also consider compatibility with other restructuring policies such as Generation Performance Standards or Portfolio Requirements. Each of these policies requires information systems to enforce and ideally should rely on the same tracking system and enforcement mechanisms.

Goals and Criteria for Implementing a Disclosure Policy

Goals	Criteria
Facilitate market transactions through informed choice. Promote competition among electricity suppliers based on both quality and price. Protect consumers and suppliers against deceptive marketing and fraud. Educate consumers about the environmental implications of their electricity choices.	• Uniform to ensure comparability of price and environmental information • Simple and understandable • Objective • Practical and cost-effective to track, report and verify • Flexible • Compatible with other restructuring policies

3. Types of Disclosure

[3] Environmental Futures, Inc. "The New Hampshire Retail Pilot Experience," 1997
[4] As specified by Federal Trade Commission regulations and FTC Act, Section 5.

Using these goals and criteria, the Dialogue discussed different ways disclosure policy could be implemented. Four disclosure paradigms were presented as outlined below. To achieve the goals of disclosure, the Dialogue participants agreed that **mandatory disclosure of all suppliers' power sales** is the most effective approach.

Voluntary Disclosure of Environmental Information: Many suppliers participating in the New Hampshire retail access pilot used voluntary environmental disclosure to promote their product by offering everything from "green electrons" and energy saving gadgets to an environmentally conscientious company image. Voluntary disclosure gives suppliers the latitude to advertise their electricity in whatever manner they believe best appeals to consumers and distinguishes them from other competitors. Voluntary disclosure or marketing claims must be verifiable under existing trade law, but do not have to be provided in a standardized format.

Voluntary Disclosure with Recommended Standards for Reporting: To reduce consumers' confusion and improve their ability to compare environmental claims of competing suppliers, voluntary disclosure could be more standardized by issuing guidelines on how information is presented. These guidelines would not be legally enforceable, but could increase the uniformity of information available to consumers.

Mandatory Disclosure of Product Attributes to Support Supplier Claims: Often referred to as claims-based disclosure, this approach would specify reporting requirements and verification protocol for suppliers that wish to market their electricity as environmentally superior or unique. Only suppliers that make such claims would be subject to certain reporting or certification requirements, which would be provided in a standardized format and subject to verification.

Mandatory Disclosure of All Suppliers' Power Sales: In this case, all suppliers are required to report their environmental profile in a uniform fashion, giving customers a more complete and comparable record of their choices and the trade-offs between cost and environmental performance. Mandatory supplier disclosure will require an established system for tracking and verifying environmental data.

How Well Does Your Disclosure Policy Meet Your Goals?

Types of Disclosure	Goals	For	Disclosure
	Facilitate Market Transactions through Customer Choice/ Promotes Competition on Quality and Price	***Protect Consumers and Suppliers Against Fraud and Deception***	***Educate Consumers About the Environmental Implications of their Electricity Choices***
Voluntary Disclosure	Doesn't ensure uniform information. Possibility of consumer confusion.	No enhanced verification; FTC prosecution of deceptive advertising	Limited comparability of information may result in erroneous choices
Voluntary Disclosure with Recommended Standards	Depends on degree of supplier compliance with guidelines.	Same as above.	Depends on degree of compliance.
Mandatory Disclosure for Affirmative Product Claims	Will affect choice of supplier among select group of consumers who want green or clean products.	Increased verification or certification required; therefore, more protection against fraud than voluntary disclosure.	Informs customers of the "green" or clean generation but not the range of other generation products.
Mandatory Disclosure of all Suppliers' portfolios or products	Uniformity for all suppliers increases the chance of affecting customer choice.	Scope of reporting and verification required makes it most rigorous in protecting against fraud and deceptive marketing. Protection is ultimately only as good as enforcement.	Provides the most comprehensive picture of tradeoffs between price and environmental performance. Must be supplemented with independent consumer education.

4. Implementation Issues

This section of the handbook deals with some alternative approaches for translating the goals and criteria into a state or regional disclosure policy. Each section addresses a particular question such as:

What type of information should be presented?
How should the information be traced from generator to retail buyer?
Who will verify and enforce the policy?
What is the appropriate balance between confidentiality and disclosure?

How should pollution trading be incorporated?
How much will it cost and how should the costs be collected?

The handbook references the findings and recommendations of the National Council on Competition and Electricity Industry (NCCEI) commissioned report "Uniform Consumer Disclosure Standards for New England," which is the result of research and stakeholder discussions spanning six months and released at the end of 1997. The report, authored by the Regulatory Assistance Project (RAP), provides a recommended framework for implementing price and product disclosure in New England. Along with other NCCEI reports on disclosure, it has laid valuable groundwork on these issues.

4.1 Information on Disclosure Labels

States can draw some guidance from surveys asking consumers what they *want* to know, but must also consider what consumers *need* to know in order to make informed decisions about the quality of the power they will purchase. The information must be understandable, objective and verifiable. In addition, the information should allow buyers to distinguish among alternative suppliers and facilitate transactions. Therefore, the information should capture the most significant environmental characteristics without overloading or confusing consumers. And finally, the information must be available through the tracking and reporting system which will be discussed in section 4.2.

In a series of six focus groups held in New Hampshire and Massachusetts, consumers consistently reported that they are most interested in receiving standardized pricing information. A smaller percentage expressed an interest in knowing the source and environmental characteristics of the power. But the majority of those who felt price information was more important said they would consider environmental characteristics in their decision making if it was provided.[5]

4.1.1 Price Information

Uniform price information is a key element of disclosure. Above all else, consumers must be able to compare the cost of electricity in the same terms. Electricity will undoubtedly be sold under many pricing structures, in some cases combined with other products and services. It is important, therefore, to present price information to potential buyers in a way that allows them to compare similar products under comparable price metrics. One of the first questions policymakers must ask is "What price or cost data provides the most basic and objective information to consumers?"

Electricity cost is based on several components -- meter and meter reading costs, billing costs, and also distribution, transmission and generation expenses. In the future these components will be unbundled and sold as separate products and/or by separate

[5] Alan S. Levy, et. al. "Information Disclosure for Electricity Sales: Consumer Preferences from Focus Groups," July 1997

companies. Unbundled generation price is the information consumers will need to understand the differences between suppliers' cost of generating power. Other costs, such as the cost of bringing the power from the regional transmission network to the consumers home or facility, will be the same for all suppliers.

Generation costs, which capture the cost of fuel, the overall efficiency of the generation process and the environmental control costs, can be translated to a number of price schedules, however. Some suppliers may charge customers a flat rate per kilowatt-hour (kWh), and others may charge a different rate for each period of the day. The price of generation may be divided into an energy charge (cents per kWh) and a demand charge (dollars per kW) applied to the highest hour usage in a month. Some suppliers provide discounts for large volume consumers. Even customers served by the same supplier with the same generation price schedule may pay different monthly bills depending on the amount of electricity they use, the highest usage in any single hour or their load shape (how their usage changes during the course of a day).

Given the complexity of pricing schedules, customers will need to have information simplified for comparison. The recommendation to the New England states and currently proposed in Massachusetts was to provide an average generation price (cents per kWh) calculated at different monthly usage levels.[6] Similarly, the information could be presented as an average monthly generation bill at typical usage levels. Market research supports both approaches.[7] In either case, the buyer can quickly compare his expected costs for each supplier.

Example of Price Disclosure Label

Monthly Usage	***Average Price***	***or***	***Total Bill***
250 kWh	6.0 cents per kWh		$15.00
500 kWh	5.0 cents per kWh		$25.00
1000 kWh	4.0 cents per kWh		$40.00

- ***Price Variability***

In addition to basic price information, focus group participants expressed an interest in knowing the variability of the price. Price variability could range from hourly changes in price to prices that change on a fixed schedule every month, every six months or annually. Customers will differ in their tolerance of price risk and some may be willing to pay higher prices for their power in exchange for reduced uncertainty. A number of states are

[6] Regulatory Assistance Project. "Uniform Consumer Disclosure Standards for New England," p. 11.
[7] Recent "mall intercept" research sponsored by NCCEI indicates that customers understood average monthly bill information better. The results have not yet been published.

considering requiring suppliers to disclose price variability including variability based on time of use or volume of use. (See the appendix for survey of state activities.)

Policy makers must also consider how to treat bundled services such as cable, internet access or energy management services and discounts. For instance, a supplier that offers a discount conditional on buying bundled services may be required to report the bundled price to prevent deceptive labeling. Buyers should be informed that electricity is not the only product they are obligated to purchase to receive the reduction. Information that is not presented on the label, such as the specific price schedule and terms for connection and disconnection would be provided to customers in a separate document -- the terms of service or contract for service.

- ***Price Benchmark***

Some advocates of disclosure suggest that a regional benchmark for price would be valuable to help buyers understand the relationship between the price of a particular supplier and the average price and environmental attributes of other suppliers in the region. For instance, the regional average price at each usage level could be used as a benchmark in conjunction with a benchmark for the regional average emission rates. By looking at a supplier's label, a potential consumer could determine how much the bill would be compared to the average if the supplier is offering power with lower or higher than average emissions.

While a price benchmark in theory might help consumers compare alternative supplier offers, calculating a regional average price is more difficult than arriving at a regional average emission rate for pollutants. As mentioned earlier, price and price structures will vary significantly between suppliers and between customers of the same supplier. Average price depends on many customer-driven factors rather than simply the characteristics and cost of the generation. In short, average price is not simply total revenues divided by total customers, particularly for large commercial and industrial customers. An average regional price benchmark could be calculated more easily for residential and small commercial customers because smaller customers have greater similarity in load shape. In general, the difficulty in deriving a regional average price that is comparable to the price offer to a particular customer or class of customers raises questions about the validity of the information. Policy makers must ask themselves whether the price benchmark will help customers make better choices before adding this level of complexity to the information tracking system and label.

4.1.2 Fuel Type and Emissions Information

Although price is likely to be the first and most important factor buyers will consider when comparing potential suppliers, environmental characteristics of generation also will be important to many buyers. In fact, environmental characteristics may be the only thing that distinguishes similarly priced electrons. Focus groups and "mall intercept" studies conducted in the past year, where shoppers are asked to participate in extended one-on-

one interviews provide some valuable insight into the type of environmental information that is most understandable to customers.[8]

Of several formats displaying environmental information, respondents preferred a relatively simple option that provided the supplier's:

- *Fuel mix*
- *Output-based measure of air emissions (lb. per kWh); and*
- *A reference level of environmental impact such as the regional average emission rate.*[9]

Although respondents preferred information about fuel mix over emission rates, fuel mix alone does not necessarily convey a measure of environmental impact since units burning the same type of fuel may release different levels of pollutants depending on the combustion process, the type of pollution control equipment, and the effort to recycle by-products such as ash. On the other hand, air pollution emission rates alone do not capture other environmental impacts of generation such as the potential dangers of radioactive waste. Combined, fuel mix and emissions data gives a more complete picture of the environmental characteristics without being too complicated.

Most states are considering requiring disclosure of both historic fuel mix and emission rate information for CO_2, NO_X, and SO_2. (See the Appendix on State Activities on Disclosure.) This data is readily available and includes pollutants emitted in significant quantities from fossil-fuel generation. Some states are also considering including radioactive waste and mercury emissions generated. Ultimately, the amount of information on the label must be determined by balancing the importance of the information needed to make choices among suppliers and the simplicity needed to make the information understandable. Legislation requiring disclosure can be written to allow expansion of information in the future.

- ***Historic or Prospective Data***

We recommend the use of historic emission and fuel data rather than prospective estimates because it increases data accuracy and the ability to verify information. Historic emissions rate information is collected and reported for the majority of units using continuous emissions monitoring and can be calculated with reasonable accuracy for the remaining units using EPA's estimated emission rates by generation technology and fuel type (AP42).[10]

[8] Teisl, Mario and L. Halverson. "Consumer Preferences from Focus Groups -- Rocky Mountain West," July 1997.
[9] Levy, Teisl, Halverson and Holt. "Consumer Preferences from Focus Groups," July 1997.
[10] EPA also is developing a database specifically for disclosure purposes which is expected to be publicly available by Spring 1998. The Generation and Emissions Database. will include data on emissions and fuel mix by power plant, electric generating company, power control area and NERC region.

While prospective information could present a more accurate representation of what consumers will actually buy in the next 12 months, it also presents greater opportunities for deception. There will always be a potential mismatch between claims made by the supplier about future performance and actual performance of the generation portfolio. This problem could best be addressed if historic emissions and fuel mix are reported, and the label also includes a *clear* disclaimer that last year's performance does not implicitly guarantee the same performance in the future.

- ***Updating the Label***

Policy makers must also decide how often the should be updated and when it should be presented to consumers. Ideally, the information should be updated based on the variability in the portfolio of generating plants. The average emission rate and fuel use of individual plants will be relatively stable unless major changes are made to the equipment at the facility which affects the fuel input (fuel switching or improvements in efficiency) or end-of-the-pipe emissions (adding environmental control equipment or changing combustion technologies). The state should determine the minimum frequency (annually, semi-annually, monthly) required for updating the label, with a provision requiring additional updates when significant changes in annual average emissions occur.

Disclosure information must be presented to consumers when they are making their decision about which supplier to choose. In addition, it should be provided to a supplier's existing customers at least as often as it must be updated. Obviously, the information should be presented upon request to any person and included with advertising where claims about generation or price are made. The state should specify both the format and the frequency of the disclosure requirements.

- ***Emission Rate Benchmark***

Many respondents to market research on disclosure of environmental attributes did not know how to interpret the emission information, and therefore found reference data provided by an objective third party such as the US EPA useful. The New England report recommends that the regional average emission rates be provided as a reference point or benchmark for consumers.[11] Information in non-technical terms (e.g. greenhouse gases instead of CO_2) and graphical form was considered the most "user friendly." One suggestion to simplify the information is to rank suppliers (1 to 10) rather than require reporting of actual emission rates. A ranking of 5.5 would represent the regional average emission rate and suppliers would be ranked relative to the average. Rankings, however, tend to be more subjective and therefore less credible.

[11] RAP. "Uniform Consumer Disclosure Standards for New England," October 1997, p. 17-25.

4.2 Selecting a Tracking System for Reporting and Verifying Disclosure Information.

A tracking system serves two functions. It 1) provides the information suppliers need to identify the characteristics of the power which must be reported to consumers; and 2) provides a record for authorities to audit and enforce the disclosure policy. Two approaches have been proposed for tracking and reporting information from the generating source to the end user -- settlement-based tracking and an environmental tagging system. The two approaches differ from each other in primarily one way. Settlement-based tracking requires the electrons and the attributes to be sold together. Tagging separates electrons and the attributes and allows them to be sold separately. A number of hybrid tracking systems have been developed by utilities, marketers and regulators which combine components of both settlement-based tracking and tagging.

4.2.1 Settlement-based Tracking

The settlement-based tracking system is designed to follow the path of financial transactions from the generating source to the retail supplier or load serving entity (LSE). (LSEs are generating companies, marketers or other types of firms that sell electricity at retail.) Power pools, such as New England Power Pool and the New York Power Pool (now the ISO-NE and NY ISO) have information management systems in place which track wholesale power transactions between buyers and sellers on an hourly basis. These information systems provide the data needed to document financial settlements between utilities. The contractual arrangements between utilities, however, do not govern which units are dispatched or represent the actual energy flows. Dispatch is determined independently based on the availability and operating cost of each unit. At the end of each billing period, actual generation costs and contract obligations are "trued up" in the financial settlement process.[12] Therefore, settlement-based tracking using the existing power pool or ISO information systems would track the flow of dollars between wholesale buyers and sellers.

To accommodate disclosure of environmental information, the fuel and emissions characteristics of generating units could be passed along with the price and MW information from seller to buyer. At each change of title to the power, the information about the original source of generation would be carried forward and blended with information about all other sources.[13] Hourly transactions would be averaged over weekly or monthly periods and reported to LSEs for the purpose of meeting disclosure requirements.

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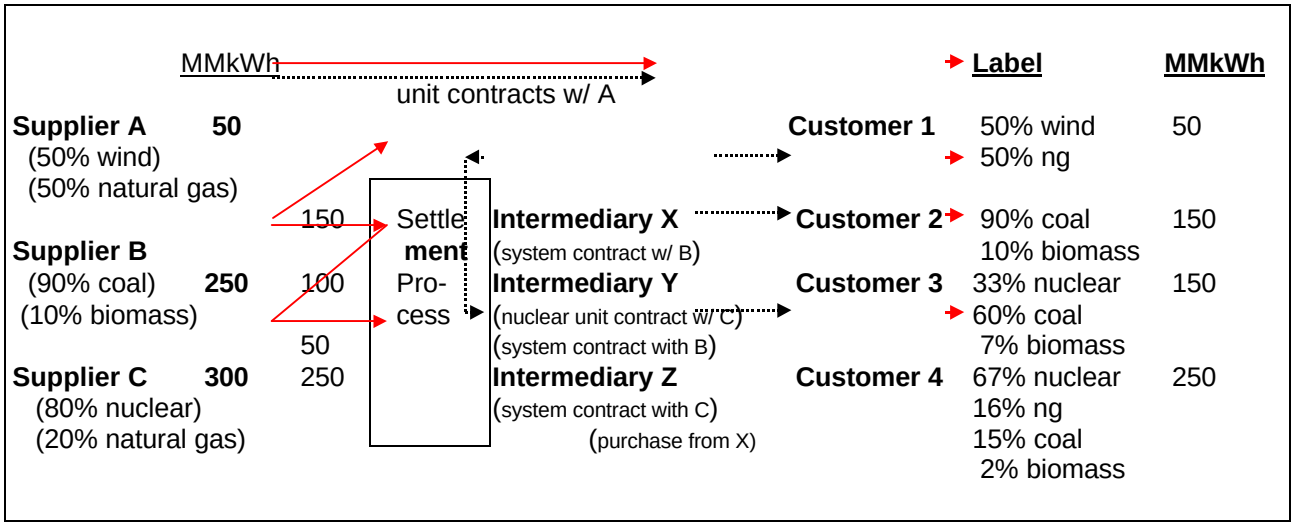
[12] Biewald, Bigelow and Regulatory Assistance Project. "Full Environmental Disclosure for Electricity: Tracking and Reporting Key Information." National Council on Competition and the Electricity Industry, p. 6, July 1997.

[13] ISO and most final sales may involve 10 or more players in a single hourly transaction according to PECO Power Team representative, Majorie Phillips. Enron argues that the change in title reaches an averages 30 each hour.

Simplified Settlement-Based Tracking System



If fuel and emissions data is not encoded with generation data in the tracking system, the LSE or the regional administrator would be responsible for cross tabulating kWhs purchased from each generator with its fuel and emissions data which must be reported and collected separately. Fuel use and emissions data is currently reported for utility-owned generators greater than 25 MW to USEPA and the EIA, but there is considerable lag between reporting and public release of environmental information.[14] The data must be made available on a more timely basis and reporting requirements expanded to include independently-owned generating units to accommodate the information needs of disclosure.

Most of the contractual transactions and energy flows will be monitored by a regional Independent System Operator (ISO), so it has been suggested that the ISO be the central clearinghouse for settlement-based tracking of environmental information. The ISO would produce a monthly summary report of power sales to retail LSEs and the agency responsible for verifying disclosure claims. Independence of the ISO from the suppliers is critical if states expect to rely on it for verification or enforcement functions. [15]

Clearly, the most effective settlement-based tracking system should rely on environmental data which is integrated into the regional power exchange information system. As ISOs develop in each region, states have a timely opportunity to work with it to incorporate the information needed for disclosure in the ISO energy tracking systems.

Settlement-based tracking can trace the sale of power from a generating unit to the end user (source to sink) as long as there is contract between parties (wholesale or retail) for the output of that specific generating unit. However, an increasing percentage of wholesale transactions are for power from a group of units owned by a company such as

[14] Biewald, et. al., p. 9.
[15] RAP., p. 55.

system purchases, or for power from all units operating during a certain time period such as spot market purchases. The fuel type and emissions characteristics of these non-unit purchases is best characterized as an blend of the generating units within the system or region operating during the reporting period. If system contracts and spot market purchases represent a large share of the total transactions, the settlement-based tracking approach results in a large portion of the retail sales labeled as a regional mix of power with the same environmental characteristics. (In New England, system contracts account for about 10 percent and pool interchange or spot purchases account for 15 percent or NEPOOL's total sales.)

To overcome this problem, the Regulatory Assistance Project recommends that New England states adopt a modified settlements-based approach. An LSE that wants to include a particular type of generating resource on its disclosure label could buy "disclosure rights" or tags from wholesale suppliers with those generating units selling into the pool or selling system power. The negotiation could take place either before or after the settlement process, but the selling party could not designate to an LSE more power from that unit than it actually sold to the pool, and the buying party could not purchase more than it purchased from the pool. These agreements allow the retail supplier to sell a particular product without the restrictions of unit contracts or direct ownership.[16]

A number of states are considering disclosure systems that would reduce the need to track all transactions through the settlement process. States like New Jersey have proposed that only suppliers that make affirmative claims must provide verification for their power sources. All other suppliers could use "default values" for emissions and fuel mix based on the regional or state averages or a state-approved high emission scenario. While claims-based disclosure decreases the need to track and verify all power sales, it places a higher burden of proof on the suppliers that would like to distinguish their power as cleaner or greener.

[16] RAP. "Uniform Consumer Disclosure Standards for New England," p. 33-35.

NERC Energy Scheduling and Transmission Reservation Tracking

The National Electricity Reliability Council (NERC) has established protocols for tracking information about contractual transactions for power in NERC Operating Policy 3 (OP3). OP3 is used for energy scheduling and gives control areas information they need to manage line loadings and respond to emergencies. This system electronically encodes or "tags" each transaction with information about generator source, MW, schedule number, sending control area and receiving control area. It could be expanded to accommodate additional information about the fuel and emissions of the generator, according to software developers.[17]

Recent concerns about confidentiality, however, have led NERC to scale back the information encoded through OP3 rather than to expand it. The Electric Power Supply Association, a trade organization representing power suppliers and brokers, argues that sometimes disclosing the source to sink information has allowed a competing supplier (including affiliated transmission suppliers and the "sink") to contact the source and eliminate the power marketer, thereby undermining the competitive market.

As a result, NERC recently made some modifications to the policy.[18] Changes included:

- Restricting the transmittal of tags only to the receiving control areas and transmission providers (not marketers as previously done.)
- Making the tagging of generator resource and loading optional.
- Eliminating the requirement to show energy title changes.

NERC has met similar resistance to FERC-proposed changes to Open Access Same Time Information system (OASIS) -- an electric transmission information tracking system which is used to reserve transmission capacity for certain transactions. FERC has proposed that the system be expanded to accommodate "source to sink" information. Pointing to experience with the NERC tagging system, opponents argue that the market is not adequately developed and the benefits (improved transmission management and policing abuses of affiliated transmission companies) will be outweighed by the costs (market corruption). If NERC scales back its information tracking system, FERC action or state or federal action would be required to reinstate it. [See related discussion about trade secrets and confidentiality below.]

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4.2.2 Tag-Based Tracking System

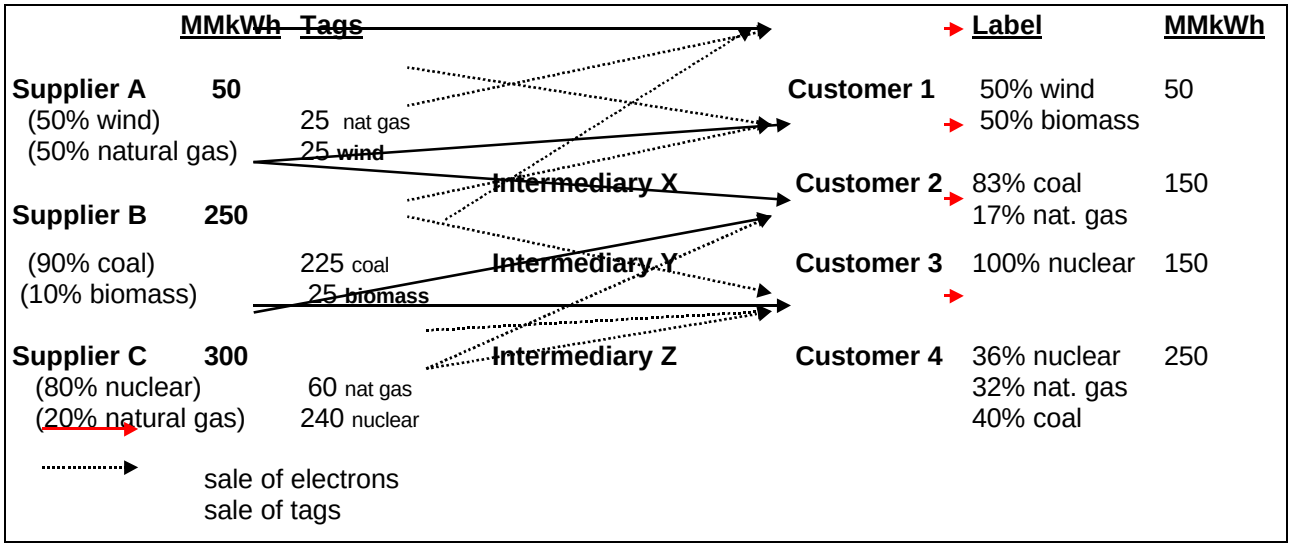
A tag-based tracking system divides electricity into two components: electrons and the generating source characteristics. The energy or electrons are indistinguishable and sold through the regional power market. Tags representing the non-price characteristics (fuel mix and emissions) of the power are dissociated from the electrons and sold in a secondary market. Thus, a supplier owning nuclear and coal plants could buy and sell electrons in the market and purchase renewable generation tags to sell "green power" to its retail customers.[19] Tags can represent fuel type, emissions, location relative to retail seller (imported or local), and any other characteristics that gain value in the market. Tags have value only to the extent there is a demand for them in the market.

[17] Conversation with Jerry Cauley, Energy Pro Services, and Don Benjamin, NERC, Nov. 1997.
[18] "NERC to Release Improved Tagging Tools and Simplified Data Requirements," Aug. 28, 1997 Press Release.
[19] Likewise, under settlement based tracking, a supplier that owns coal and nuclear generation could sell all of its power on the wholesale spot market and purchase unit contracts for green power to sell at retail.

Tags can be based on either projected or historical generation from each unit. One tag could be assigned to each one million kWh hours of generation. If tags are assigned to projected output and the projection of tags falls short of actual production during that period, financial penalties or discounts on the subsequent year projections may be assessed through an annual certification process. Although an expiration date or a limit on the tagging period is not required, it simplifies verification and auditing of the tag market. Assigning tags based on historical generation would be consistent with the earlier recommendation to use historical data for disclosure.

Trading in tags may also be geographically limited – within the ISO region or adjoining power pools/ISOs. This is expected to enhance customer acceptance and prevent the flood of tags from regions that do not have an established market. To use tags in a mandatory disclosure system for all suppliers, Enron, an independent generation and marketing company, proposes that all sales be characterized by the regional average fuel type and emissions characteristics as defined by the regional administrator or ISO. Only those suppliers that wish to distinguish their power as being something other than "average" would purchase tags to acquire specific characteristics of power, such as all renewable or zero emissions generation to verify their claims. Power sold under the tagging system would be excluded from the regional label applied to non-claims-based sales.[20]

Simplified Tag-Based Tracking System



[20] Enron Corporation, "Power Facts: A Resource Labeling System for Electric Power Consumers," July 1997; p. 4.

A tag-based system overcomes physical transmission barriers which limit the actual sale and flow of electricity. Since tags do not have to be tied to load on a real time basis, this tracking system also deals effectively with intermittence and load balancing problems associated with some renewable generation. In general, the tagging system allows for more liquidity and flexibility in creating and marketing electricity products.

One of the disadvantages of a tag-based system noted in the New England report is potential lack of consumer understanding and acceptance. While most consumers can relate to a reporting system that purports to follow the actual financial and contractual flow of electricity, it may be more difficult for them to accept a system that gives a supplier credit for selling a product without ownership or purchased power rights. Plans are underway to test consumer reaction to tagging in a manner similar to the market research conducted by NCCEI on labels.

Both the tag-based and the settlement-based tracking systems proposed by states to date establish a dual standard of tracking and record keeping. Only suppliers making claims must track and verify their disclosure information, while a default or regional average disclosure label is proposed for all other power sales. This approach places a higher administrative burden on marketers or suppliers trying to distinguish their power and allows suppliers that rely heavily on resources that are less valued in the market to be camouflaged by the averaging effect of the regional label. Ideally, the goal of mandatory disclosure for all suppliers is to require the same data and tracking for all power sales.

4.2.3 Multiple Tracking Systems

Variations of both settlement-based tracking and tagging may develop side by side. For instance, two regions with significant interregional trading of power may both require disclosure of fuel mix and air emissions, but one region may implement a tag-based tracking system and the other uses settlement-based. States must determine how to convert the attributes of the power at the border from tags to settlement-based and vice versa. The method and level of accuracy should take into account the information available from the neighboring ISO or independent administrator to verify the label assigned to imports. It may be necessary to use average regional data for system contracts or pool exchanges, while more specific information can be provided with power bought and sold under unit contracts. As long as regions agree on the attributes of greatest importance, either tracking system could be used to provide the information to buyers and enforce unfair trade practices for inter-regional sales. Indeed, the development of multiple tracking systems is less problematic than the complete lack of disclosure and tracking in contiguous states. (See the discussion of imports below.)

Disclosure policies that rely on the ISO or a dispatch entity to report and verify financial transactions in a multi-state region call for coordinated efforts by states. Policy makers should develop interstate working groups which include all the states in the ISO region to ensure that information requirements are consistent among states. The states should work cooperatively with the ISO to develop the software capability needed to implement the data reporting or verification functions. Coordination of a regional disclosure policy and

the ISO tracking system will greatly simplify implementation and verification of interstate sales.

Evaluating Tracking Systems

Attributes	Contract Path	Tagging
Ability to track flow of electrons	Does not track electrons, but tracking contracts limits the sale of power products to real-time constraints such as availability of units and transmission capacity limits.	Does not track the flow of electrons. Tags override temporal and physical constraints on the flow of electrons.
Information needs	Requires ISO/Administrator to record, aggregate, and report monthly source to sink transactions.	Independent administrator must certify tags as they are generated. Market system needed for exchange of tags and record of purchases.
Geographic Boundaries	Limits exchange of power with marketable attributes to the physical boundaries of the power grid and the economics of transmission.	Exchange of tags limited only by regional boundaries which may be needed to enhance consumer confidence. More closely parallels the broad geographic boundaries of concern for pollutants such as NO_X, SO_X and CO_2.
Gaming - Ability to Hide "dirty power"	Multitude of transactions each hour may be difficult for independent administrator to verify. Use of system average data for non-contract transactions will benefit more polluting sources.	Prevents gaming if all suppliers must hold generator-specific tags for all sales. Claims-based tagging system will camouflage more polluting sources.
Enforcement	Audits by an independent system administrator required to verify that ISO tracking functions are done accurately. Hinges on ISO's willingness to accept information tracking function.	Audits by an independent system administrator required to verify that tags held/sold match actual generation.
Impact on Market	Some argue that adding generation attributes to energy scheduling will impede market efficiency. Confidentiality may constrain access to information.	Separate market for attributes relieves the need to track transactions or overlay environmental attributes on energy scheduling system. Allows for greater product differentiation.
Confidentiality	Marketers fear source to sink tracking breaches confidentiality by disclosing intermediaries. Faces possible legal challenges for undermining competition.	Direct exchange between source and LSE eliminates intermediaries and confidentiality concerns about source to sink tracking.
Cost of implementation	Modest cost to increase information required by ISO. Information system not fully developed. Verification and enforcement costs likely to be more significant.	Modest cost in establishing information network for secondary market in tags. Enforcement costs minimal.
Consumer Confidence	Parallels contractual flow of dollars and therefore may be more acceptable .	Confidence hinges on government and environmental community endorsement.

4.3 Labeling Imports from States Without Disclosure

A state that decides to move ahead with disclosure must also consider how to treat power flowing across its boundaries from states or regions that do not require disclosure. This will be particularly important if imports represent a significant share of the retail power sales in the state. If the neighboring region(s) has a compatible tracking system in place and the ISO or independent administrator is willing to release the information, it may be possible to label imports and require full disclosure.[21] If a tracking system in not in place, imports could (1) opt in to the disclosure program; (2) simply be labeled "imports" with no information about fuel type or emissions required; or (3) be designated with a default label representing the average generation mix from the neighboring region.

Questions you need to ask:

- How significant are imports as a share of total retail sales?
- What is the difference in the average emission rate of the exporting state?
- How should they be designated on the label?

◊ Full Disclosure

◊ High Emissions Default Value

◊ Average of the Exporting Region

◊ Imports

Allowing suppliers outside the region to opt-in to full disclosure seems preferable, but without a tracking system in place in the exporting region, there is unlimited opportunity for deception. There is no way to ensure that a generating resource is not sold more than once, or that the power was generated from the resource(s) identified under disclosure. Allowing imports to opt in also may drain the most desirable resources from the exporting regions, flood the market and depress prices in the importing region.[22]

Assigning a default value based on the average of all the generating resource characteristics of the exporting region also has its drawbacks. A highly valued resource outside the region would not get credit for the value it brings to the market under this approach. Renewable generation technologies such as wind and solar would be discouraged from locating where the best resources are available if they are labeled as a generic mix of generation. But a default value for imports, particularly a high emission default value, may encourage neighboring regions to adopt disclosure in order to enjoy the benefits of a broader market for premium resources.

The recommendation to the New England Commissioners is to simply label imports as "imports from [state or region]" without any generating source attributes.[23] Evidence from focus groups indicates that consumers generally view imports as less desirable energy sources than indigenous sources. Massachusetts' proposed regulations suggest that imports should be labeled with the emission characteristics and fuel type of the exporting region.

[21] This assumes that the ISO tracks exports in the same manner it tracks power exchanges within the region. Meters at the point of export measure only the net interchange between two regions.
[22] RAP. "Uniform Consumer Disclosure Standards for New England," Oct. 6, 1997.
[23] RAP. pg. 41.

When considering how to label imports, policymakers should consider the potential quantity of imports and the difference in the average emissions rates of the imports compared to the emission characteristics of power generated within the region. For instance, imports from the midwest generally have higher emission rates and could have a significant impact on the air quality of the importing regions such as the New York Power Pool (NYPP) and Pennsylvania/Jersey/Maryland (PJM) region.

4.4 Accounting for Allowances, Offsets and Emission Credits in Disclosure

In some cases, reporting actual emissions rates may not capture the full character of a generator's environmental portfolio. With the national SO_2 allowance trading program, the OTC NO_X emission credit trading program and the voluntary carbon emission reduction program, generators may emit higher levels of pollutants and purchase reductions or offsets from other generators or other sectors. For example, the SO_2 allowance trading program allocates a prescribed number of tons of SO_2 emission allowances to each power plant. (One allowance equals one ton.) A company's allowances limit the amount of SO_2 pollution emitted each year from its plants. A company may purchase additional allowances from other companies to cover increased emissions if it determines that it is less expensive to achieve reductions at another facility than make reductions in-house.

Trading in allowances, if unaccounted for in disclosure, could result in companies that purchase allowances to comply with pollution limits being penalized. Their label would reflect the high emissions from their plants, without an indication that the emissions are being offset by reductions purchased at another facility. Likewise, the emissions from companies that sell allowances would be lower on their label, despite the fact that another company "paid" for those reductions.

Accounting for allowance trading, offsets and emission credits would complicate the tracking system and should not be undertaken unless it will have a significant impact on reported emission rates. To date, allowance trading has not been played a major role in compliance. For instance, under Phase I of the Acid Rain program, very little compliance was achieved through SO_2 allowance trading. Most utilities reduced SO_2 emissions at their own plants through fuel switching and add-on control technologies. In fact, some utilities overcomplied during Phase I and banked the emission reductions for future compliance. In Phase II, allowance trading may prove to be more important. About ten percent of the allowable emission levels in Phase 2 could be met with banked allowances acquired through trades.[24] Additional trading may take place between now and 1999, and trading is likely to be more significant for states where marginal emission reduction costs are highest.

[24] There are currently three million Tons of SO2 allowances in the national bank which could be used to meet the Phase II cap of 8.9 million tons, but only about one-third of these were acquired through inter-utility trading.

About 50 million metric tons of CO_2 reductions achieved through changes in electric supply and distribution were reported to the national greenhouse gas emission registry (1605(B)) in 1994.[25] The utility sector reported an additional 12 million tons reduction through investment in other sectors, such as commercial and industrial demand management programs, recycling materials such as coal ash, and sequestering carbon through forestry projects. [26] This represents approximately two percent of the total annual CO_2 emissions from the utility sector (500 million metric tons). While not significant now, the advent of a binding national target for greenhouse gas reductions and policy discussions of a domestic carbon trading market will accelerate the importance of these indirect investments and their effect on emission rate disclosure.

Likewise, the recent changes in the ozone and fine particulate ambient air quality standards may have a significant impact on both SO_2 and NO_X trading. The magnitude of trading will depend in large part on the difference between generators' marginal cost of compliance, which is still uncertain.

Policy makers should consider including a placeholder for including allowances, offsets, and emission credits in its disclosure policy. As the magnitude of trading increases, or if trading has a disproportionate impact on some power plants, for instance on high carbon-emitting plants, it may be well worth including in the disclosure label. This issue should continue to be monitored as implementation of the new National Ambient Air Quality Standards and the carbon reduction targets unfold.

4.5 Disclosure by Product or Portfolio

Disclosure can be required on a company-wide basis (portfolio disclosure) or for generating units grouped together to sell specialized electricity "products" such as green power. In Massachusetts, the Commission stated a preference for portfolio or company disclosure which requires each supplier to report the environmental characteristics of all its generating resources to all of its buyers. Massachusetts rejected product disclosure because the commission considered it too difficult to prevent deceptive sales practices or gaming. For instance, to ensure that a supplier did not package its generating sources into multiple products and sell the most marketable resources twice, the verification protocol would require reaggregating the sales claims of the individual product lines and matching it with actual generation from all the supplier's plants. On the other hand, portfolio disclosure may also be difficult to police.[27] Suppliers wishing to evade the requirement to disclose all their generating sources could simply create a new corporate entity to spin off its most marketable generation resources and sell them separately.

Product disclosure may be viewed as deceptive packaging by some consumers because it fails to fully inform buyers about the company's complete generating portfolio. Under product disclosure, a consumer of the supplier's wind power would not be informed if the

[25] 1605(B) is a DOE registry of voluntary greenhouse gas emission reductions.
[26] DOE/EIA, "Voluntary Reporting of Greenhouse Gases, 1995," p. 20.
[27] RAP, "Uniform Consumer Disclosure Standards for New England," p. 44.

same supplier is selling coal-fired electricity to other consumers. Portfolio disclosure gives every customer the complete picture of a supplier's operations, but limits the ability of suppliers to differentiate their electricity in response to consumers' demand.

Some customers may want only renewable power, others may prefer a mix of clean resources that are less expensive but less polluting than the "average" supplier's mix of generating sources. Consumers will have a wide range of tolerances for price and environmental tradeoffs which may call for customized products. Product disclosure is more compatible with giving consumers greater choice. Decision makers must be careful, therefore, to balance the need to prevent gaming and the need to allow consumers to exercise their individual choices.

4.6 Enforcement of Disclosure

The Federal Trade Commission (FTC) Act, Section 5 prohibits "unfair or deceptive practices," giving FTC broad jurisdiction to investigate product claims, concurrent with state attorneys general. Both expressed and implied claims must be substantiated. Therefore the FTC could require substantiation of fuel mix and emissions characteristics if they are being used in marketing power.

Some FTC has broad jurisdiction to investigate advertising abuses, the agency prosecutes deceptive advertising or labeling claims based on the percent of customers affected. In practice, more than 20% of consumers must be affected before an investigation is launched. No specific guidelines exist for advertising or labeling electricity sales, but regulations for general environmental claims for other products could provide a general framework.

FTC's claims-based environmental guidelines (16 CFR, sec. 260) were published in response to widespread abuses of "green" marketing claims such as recycled and biodegradable content and ozone-friendly claims. While the guidelines are intended to discourage vague environmental claims which can be interpreted in many ways by consumers, these guidelines simply amplify the agency's overall mandate and do not have independent force of law. The four general principles expressed in the guidelines are that:

- claims must be clear and prominent to prevent deception;
- claims should not overstate an environmental attribute or benefit;
- claims should make clear whether they apply to the product or packaging; and
- comparative claims must be presented in a manner that makes the basis of the comparison clear.

The FTC depends in large part on the market to police itself. If a competitor or consumer are suspicious of the claims of a seller, they may bring the claim to the attention of the FTC. Likewise, the Food and Drug Administration which oversees food labeling relies on competitors to help maintain the credibility of the disclosure system. This approach works

most effectively when information is readily available to verify the claims of others. So in the case of emissions disclosure, there must be a database of information based on actual generation that is accessible to the public and could be used to verify the claims of suppliers. The data base must be comprehensive enough to ensure that suppliers are not selling the same product in two different markets, for instance.

Actual generation data may be deemed confidential in a competitive market, therefore a separate "administrator" may be needed to perform the audit function through spot checks and annual certifications of fuel type and emissions information presented on the electricity label. The ISO or dispatch entity has access to the information needed to verify which units generated, and it has been suggested that the ISO could also be responsible for enforcement of disclosure. But it is critical that the enforcement agent is independent from the influence of generating companies and other LSEs to ensure unbiased enforcement. The ISO may be able to effectively serve as the information clearinghouse but is less likely to be viewed as a credible enforcement agent.[28] For that reason, many states are considering the creation of a new, independent system administrator that would be responsible for enforcement. (See for example New Jersey.) As disclosure expands to a regional or national level, the enforcement entity must have multi-state authority to access information needed to verify claims.

4.7 Increased Confidentiality Under Competition

Mandatory disclosure of environmental and price information may raise challenges by suppliers that competitively sensitive information is being jeopardized. Requests for confidentiality have been steadily increasing with the prospect of retail competition, and attempts to increase information reporting requirements for non-utility generators has met strong resistance. Therefore, case law and regulatory precedents for handling "trade secrets" will be important in guiding decisions about what information should be required and how it should be disseminated.

The Energy Information Administration, the agency charged with comprehensive energy data collection for the Congress, the federal government, the states and the public, recently issued a request for comments on the issue of confidentiality in the collection of electric power data under deregulation (Federal Register, Vol. 63, No. 8; Jan 13, 1998). EIA acknowledges the need to balance the public interest goals of providing adequate information for suppliers and consumers to make informed decisions, monitoring the benefits and detecting possible abuses of deregulation, while preventing competitive harm to companies providing data. The DOE makes the determination of whether data should be treated as a trade secret or otherwise be held as confidential according to the criteria established in the Freedom of Information Act and DOE regulations implementing the Act (10 CFR 1004.11). EIA then follows specific procedures in handling confidential data including suppressing release of company-specific data. (See Appendix A of FR notice.)

[28] RAP. "Uniform Consumer Disclosure in New England," p. 55.

Trade secrets are defined as information which is not patented, which is known only to certain individuals within a commercial concern using it, and which gives its user an opportunity to obtain a business advantage over competitors. Even where information is deemed to be a trade secret, the decision as to whether the information should be disclosed depends on the purpose of disclosure. If the public interest is significant, disclosure of trade secrets have been upheld by the courts even if it results in the loss of a competitive advantage by the owner of the information.[29]

Disclosure of aggregate fuel type and emission characteristics is unlikely to raise concerns of confidentiality since the information is currently being reported and made public through the US EPA, FERC and DOE's EIA. If, however, more specific generating unit information is required which may jeopardize the competitive position of the suppliers, such as the terms and conditions of fuel contracts, the burden would be on the agency or legislative body requiring disclosure to define the public interest being served. State Public Utility Commission decisions to treat information as confidential are frequently made on a case by case basis, but in general the Commission weighs the public interest in disclosing the information against the possible harm to the disclosing party.

Even where data is not considered confidential, EIA has had a recurring problem of utilities simply not providing requested information. Non-response to data requests is expected to increase in a competitive environment, particularly among non-utility entities.[30] Clarifying EIA's data collection authority combined with increasing the agency's resources to police nonrespondents may be required to ensure consistent reporting and adequate data for verification of disclosure requirements.

States need to advocate for stronger EIA authority to collect the necessary data to implement disclosure. To the extent that individual generating unit data is needed to confirm disclosure claims, states may also argue that the data be reported to EIA and released to state agencies even in cases where it is considered confidential and not appropriate for public release. States should work directly with the regional ISO or dispatch entity to ensure that the tracking system for energy and transmission scheduling is compatible with the data needed to implement and enforce disclosure policies with confidentiality safeguards in the handling and dissemination of information.

4.8 Allocation of the Costs of Disclosure

Information comes at a cost. Estimates of the cost of different disclosure policies have primarily tried to measure the cost of establishing a tracking system. For instance, one estimate for developing the software for settlement-based tracking suggests that

[29] Scott Hempling. "Disclosure of Fuel Mix and Emission by Retail Electric Service Providers: Issues of Confidentiality vs. Public Right to Know," published May 1997 by the National Council on Competition and the Electric Industry.

[30] EIA. "Effect of Electric Power Industry Restructuring on EIA Data Collection, March 1997.

customers might expect an increase of two cents a month on their bill for disclosure.[31] This estimate does not take into account the cost of education campaigns or resources needed for enforcement which may involve state-funded agencies.

Although the expected cost of disclosure is expected to be modest, policy makers must decide how those costs should be collected and distributed as needed. Several alternatives or mix of options could be used:

- Costs born by the LSEs or ISO. This would be most appropriate for the costs of tracking and certifying data which will be the responsibility of the ISO or a private entity.
- Costs recovered through an distribution access charge. Costs such as state-sponsored education campaigns or funds needed to establish an independent public administrator for enforcement of disclosure could be collected through a per kWh public benefits charge.
- Costs collected through taxes. The choice of whether to use the tax system (perhaps levied on electricity sales) or a distribution access fee is largely a political one that must be decided by legislators.

Cost of implementing and enforcing disclosure is another factor that should be considered when determining the type and extent of disclosure a state should adopt. More information is needed to determine these costs accurately. In general however, the total costs are expected to be reasonable and should not have a significant impact of the price of electricity.

4.9 Compatibility of Disclosure with Resource Portfolio and Generation Portfolio Standards

A number of states have adopted renewable portfolio (RPS) or generation performance standards (GPS) as part of their restructuring initiative. An RPS requires all suppliers selling retail power in the state to include a minimum amount of renewable power in their portfolio. A GPS standard requires all suppliers' products or portfolio to meet a minimum average emission rate standard as a condition for selling retail power in the state. States that are considering these policies will need to tailor disclosure to facilitate verification of the RPS or GPS and prevent gaming.

The first question state policymakers must answer is what level of disclosure is needed to be compatible with RPS or GPS? If portfolio or performance standards apply to every company, then disclosure should apply to the company's total portfolio or companies must periodically aggregate their products for verification. If the standards apply to every product, then disclosure should be required for every product. That way, every customer

[31] RAP, "Uniform Consumer Disclosure Standards for New England," Oct. 1997, p. 56.

will be guaranteed to receive power that at a minimum meets the renewable or emissions standard.

Dealing with imported power will clearly be more critical to these states. To be effective, RPS and GPS must be imposed equally on in-state and out-of-state suppliers to prevent a flood of imported power that is more polluting. Verification of imported power disclosure claims will be important to enforce RPS or GPS.

5. Conclusion

Disclosure is essential for facilitating customer choice in a deregulated electricity market. Customers will need information in a comparable format that allows them to select suppliers based on both price and quality of the power. Disclosure also provides protection for both buyers and sellers from deceptive marketing by establishing a system to verify any and all claims.

States must continue to move ahead to adopt disclosure hand-in-hand with retail access. As the appendix on state activities indicates, states are likely to adopt a range of approaches to disclosure and will be implementing disclosure on different timelines. This will provide an opportunity to test the effectiveness of various approaches, but also may create conflicting or multiple information requirements for suppliers. States will have to grapple with how to treat power imported from neighboring states or regions without disclosure policies. Coordinating with states within the same ISO will eliminate many of the border issues.

Ultimately a national policy will ensure the most consistent and most effective disclosure policy. States should be proactive in influencing federal policy to make disclosure an integral part of utility restructuring, and can use their own experience as a testing ground on how best to implement disclosure nationally.

6. References on Environmental Disclosure

Federal Trade Commission, "Guides for the Use of Environmental Marketing Claims: The Application of Section 5 of the Federal Trade Commission Act to Environmental Advertising and Marketing Practices," July 1992.

Grace, Robert, "A proposal for a Comprehensive System of Customer Information Disclosure and Verification of Fuel Source and Environmental Attributes for Competitive Sales of Electricity," AllEnergy Marketing Company, June 1997.

Hempling, Scott, "Disclosure of Fuel Mix and Emissions by Retail Electric Service Providers: Issues of Confidentiality vs. Public Right to Know," published by the National Council on Competition and the Electric Industry, May 1997.

Holt, Edward, "Disclosure and Certification: Truth and Labeling for Electric Power," published by the Renewable Energy Policy Project, January 1997.

Levy, Alan; Mario Teisl, Lynn Halverson, Edward Holt, "Information Disclosure For Electricity Sales: Consumer Preferences from Focus Groups," published by the National Council on Competition and the Electric Industry, May 1997.

Moskovitz, David; Tom Austin, Cheryl Harrington, Bruce Biewald, David White, and Robert Bigelow. "Full Environmental Disclosure for Electricity: Tracking and Reporting Key Information," published by the Regulatory Assistance Project, March 1997.

Oppenheim, Jerrold, "Consumer Protection Matters: Disclosure of Price and other Contract Terms," published by the National Council on Competition and the Electric Industry.

Regulatory Assistance Project, "Using Tradable Tags for Resource Disclosure," May 1997.

Regulatory Assistance Project, "Information Disclosure for Effective Customer Choice," October 1996.

Appendix: Survey of State Disclosure Activities

This compendium of disclosure activities covers a broad range of actions including pending and passed legislation, proposed regulations or regulatory orders. In some cases the disclosure is still "under study" or has been recommended by an appointed legislative or regulatory committee. If you have information about developments on disclosure in your state please contact Paige Shelby by email: Paige.Shelby@CCAP.org or by phone: (202) 408-9260.

State:	Actions Taken:

Arizona	(1/96) Commission Order to examine restructuring

Minimum Amount of Information Required: No formal action on disclosure, although disclosure of fuel mix and emissions has been brought up in working groups by several environmental organizations.	**Which Suppliers Must Disclose:** **Level of Disclosure:**
When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

* http://www.cc.state.az.us/utility/electric/reports.htm

State: California	**Actions Taken:** (9/8/97) Senate Bill 1305 - effective immediately

Minimum Amount of Information Required: If retail supplier claims to be different from net power then they must disclose fuel mix percentages. If retail supplier does not claim to be different from net power, then they must disclose net system power fuel mix percentages.	**Which Suppliers Must Disclose:** All retail suppliers of electricity **Level of Disclosure:** product
When Information Needs To Be Presented to Buyer: Retail suppliers must disclose in all product-specific written promotional materials distributed to consumers, except ads and notices in general circulation media, or at a minimum on a quarterly basis.	**Endorsed Tracking System:**
Enforcement Mechanism: Mandatory claims - based	
Imports: "California Energy Resources Conservation and Development Commission shall have authorization to access the electricity generation data in KWH by hour at the point at which out-of-state generation is metered, to the extent the information has been submitted to a system operator."	

* http://www.leginfo.ca.gov/pub/bill/sen/sb_1301-1350/sb_1305_bill_971009_chaptered.html

State:	**Actions Taken:** (12/96) Commission releases report on electric industry

Colorado	restructuring

Minimum Amount of Information Required: Suggestions in Commission Report include disclosure of emission rates and generation mix	**Which Suppliers Must Disclose:** **Level of Disclosure:**
When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

*http://www.puc.state.co.us/

State: Delaware	**Actions Taken:** (6/97) H.R. 36 orders commission to provide report on restructuring (12/98) The Commission releases draft report to the House of Representatives The Commission recommends that the General Assembly and environmental agencies develop environmental information standards.

Minimum Amount of Information Required:	**Which Suppliers Must Disclose:** **Level of Disclosure:**
When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

* htttp://ww.state.de.us/govern/agencies/pubservc/major/major1.htm#electric

State:	**Actions Taken:** (3/98) Pre-rulemaking proposal by the Florida PSC (note this

Florida	action is not associated with restructuring)

Minimum Amount of Information Required: price "fuel type, quantity and corresponding percentage of each fuel type used for system generation"	**Which Suppliers Must Disclose:** **Level of Disclosure:**
When Information Needs To Be Presented to Buyer: monthly with bills	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

* htttp://www.state.de.us/govern/agencies/pubservc/major/major1.htm#electric

State: Georgia	**Actions Taken:** Commission is holding public hearings on restructuring. Disclosure has been mentioned as a possible policy option.

Minimum Amount of Information Required:	**Which Suppliers Must Disclose:** **Level of Disclosure:**
When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

*http://www.psc.state.ga.us/

State:	**Actions Taken:**

Illinois	(1997) H.B. 362 passes

Minimum Amount of Information Required:	**Which Suppliers Must Disclose:**
Known sources of electricity supplied Pie chart which depicts % of each contributing source Chart which shows the CO_2, NO_x, SO_2 emissions, and nuclear waste attributable to known sources of electricity.	All electric utility and alternative retail electric suppliers
	Level of Disclosure: Appears to be product-level

When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
With bills on quarterly basis and posted on commission WWW site	None at the moment

Enforcement Mechanism:
To be determined

Imports:
If certified in state, all suppliers must comply with the disclosure policy.

*http://www.state.il.us/icc/libdocs/elecdereg/

State:	**Actions Taken:**
Kansas	(1996) HB 2600 creates Retail Wheeling Task Force (12/97) Final report of the Retail Wheeling Task Force presented to Kansas legislature.

Minimum Amount of Information Required:	**Which Suppliers Must Disclose:**
"Commission must adopt rules and regulations establishing minimum, enforceable, uniform standards for the form and content of disclosure and labeling that would allow consumers to easily compare the price, variability, contract terms and conditions, resource mix, and environmental characteristics of their electricity purchases."	**Level of Disclosure:**

When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**

Enforcement Mechanism:

Imports:

*http://www.kumc.edu/kansas/ksleg/KLRD/RWTFFINR.HTML

State:	**Actions Taken:**
	(12/97) LPSC staff report on restructuring

Louisiana	(9/98) Committee meetings to discuss environmental and consumer protection concerns (including disclosure)

Minimum Amount of Information Required:	**Which Suppliers Must Disclose:**
	Level of Disclosure:
When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

* Matt Troxle, Louisiana Public Service Commission

State: Maine	**Actions Taken:** (12/1996) PUC Report to legislature (5/97) H-568 (LD 1804) The commission is currently holding hearings on disclosure

Minimum Amount of Information Required: Generation resource mix	**Which Suppliers Must Disclose:** power suppliers
	Level of Disclosure: company-level
When Information Needs To Be Presented to Buyer: Published quarterly	**Endorsed Tracking System:**
Enforcement Mechanism: ISO would oversee compliance	
Imports:	

* http://www.state.me.us/mpuc/energy.htm; Electric Restructuring Docket No. 95-462

State:	**Actions Taken:** (5/97) Commission Staff Report recommends electric

Maryland	deregulation

Minimum Amount of Information Required:	**Which Suppliers Must Disclose:**
Environmental rating system for suppliers (emissions-based)	All power suppliers
	Level of Disclosure: Company

When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
	None

Enforcement Mechanism:
To be determined

Imports:

*http://www.psc.state.md.us/psc/other/stfpaper.html

State:	**Actions Taken:**
Massachusetts	(11/97) Restructuring Bill passes House and Senate (1/98) DTE releases "Order Proposing Regulations and Soliciting Comment"

Minimum Amount of Information Required:	**Which Suppliers Must Disclose:**
If known source: average price and price variability, fuel mix, emissions (and regional average), and labor characteristics For system power: average New England characteristics	All retail suppliers
	Level of Disclosure: Company

When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
When requested by consumer, in a pre-service disclosure statement, in advertising, and with all bills at least quarterly	Settlement-based

Enforcement Mechanism:
All claims must be consistent with information provided to ISO, false information or failure to comply may result in the suspension or revocation of the supplier's license.

Imports:
If imports have a contract with a generator unit, then characteristics of the generating unit are ascribed for disclosure. If not, then the average fuel mix and emissions rate of exporting system will be disclosed.

*Massachusetts Department of Transportation and Energy; http://www.magnet.state.ma.us/dpu/index.htm

State:	**Actions Taken:**
	(6/97) Commission order sets forth framework for electric

Michigan	industry restructuring. (10/97) Commission files Customer Focus Issues Report and Recommendations to Legislature.

Minimum Amount of Information Required: Fuel mix (pie graph) Annual air emissions for electricity used per year (total lbs NO_x, SO_2, CO_2,) Regional standard (average Midwest or East Central emissions for equal amount of electricity used in a year)	**Which Suppliers Must Disclose:** All Suppliers (upon request of customer) **Level of Disclosure**: Company

When Information Needs To Be Presented to Buyer: Upon request of customer	**Endorsed Tracking System:** None

Enforcement Mechanism:
Standards set for identifying and defining supply sources
Mechanism needed to ensure accurate reporting

Imports:
Needs to be tracked and reported in environmental disclosure, but how?

*Ron Calen, Michigan Public Service Commission;
http://ermisweb.cis.state.mi.us/mpsc/reports/restruct/focus.htm

State: Minnesota	**Actions Taken:** (11/97) PUC study Environmental disclosure discussed in public hearings

Minimum Amount of Information Required:	**Which Suppliers Must Disclose:** **Level of Disclosure:**

When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**

Enforcement Mechanism:

Imports:

*http://www.state.mn.us/ebranch/puc/download/default.hum

State: Montana	**Actions Taken:** (5/97) S.B. 390 Electrical Restructuring Bill passes (11/97) PUC submitted for public comment Draft Electric

	Restructuring Rules to implement S.B. 390.
Minimum Amount of Information Required: Price Fuel Mix (pie graph by %) Total Air Emissions created by annual energy use (total lbs SO_2, NO_x, and CO_2) in a bar graph format Average emissions in NW projected from an equal amount of energy used.	**Which Suppliers Must Disclose:** All Electric Providers **Level of Disclosure:** Product
When Information Needs To Be Presented to Buyer: To all small customers (less than 10KW or XXdt) with their service contract, and with any promotional material.	**Endorsed Tracking System:**
Enforcement Mechanism: Annual report must contain sufficient documentation to support all environmental claims made to consumers. Commission may investigate any claims.	
Imports:	

*http://www.psc.mt.gov/gaselec/elec.htm
http://nebula.nris.mt.gov/cgi-bin/foliocgi.exe/97_bills.nfo/querry=390/doc/{@82048}?

State: Nevada	**Actions Taken:** (7/97) AB366 signed into law
Minimum Amount of Information Required: "The commission shall establish minimum standards for the form and content of all disclosures, explanations or sales information disseminated by a person selling a competitive service to ensure that the person provides adequate, accurate and understandable information about the service which enables a customer to make an informed decision relating to the source and type of electric service purchased.	**Which Suppliers Must Disclose:** **Level of Disclosure:**
When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

* Bob Cooper, State of Nevada, Bureau of Consumer Protection

State: New Hampshire	**Actions Taken:** (1996) Pilot program (5/21/96) HB 1392 Electric Utility Restructuring Bill No mandatory disclosure at start date of retail competition, but

	working group set up to consider disclosure of environmental emission impacts and energy mix.
Minimum Amount of Information Required:	**Which Suppliers Must Disclose:**
	Level of Disclosure:
When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

* http://www.state.nh.us/puc/d96150pg.html

State:	**Actions Taken:**
New Jersey	(4/97) NJBPU adopts report "Restructuring the Electric Power Industry in New Jersey" endorsing disclosure. Environmental Disclosure subcommittee charged with developing a collaborative proposal for disclosure. (12/97) Subcommittee report released, presenting two alternative approaches. To be followed by a Phase 2 Report on remaining issues. No legislation at this time
Minimum Amount of Information Required: All suppliers with affirmative claims: Fuel mix Emissions Data (SO_2, CO_2, NO_x, per unit of output) with benchmarks based on NJ Air Quality Targets or state average All other suppliers: Default value (created by either a Regional Average data excluding affirmative claims, or by a high emissions scenario)	**Which Suppliers Must Disclose:** All suppliers **Level of Disclosure:** Product
When Information Needs To Be Presented to Buyer: With customer's bills, in contracts, and with all marketing materials	**Endorsed Tracking System:** Settlement-based or contract path
Enforcement Mechanism: Independent System Administrator with cooperation of PJM ISO	
Imports:	

*Report: An Environmental Disclosure System for New Jersey

State:	**Actions Taken:**
New York	(7/96 and 3/97) Pilot programs approved but without any disclosure policy. (3/98) PSC issued draft white paper on environmental disclosure
Minimum Amount of Information Required:	**Which Suppliers Must Disclose:**

	Level of Disclosure:
When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

* Harvey Tress, New York Public Service Commission; http://www.dps.state.ny.us/fileroom/doc3529.t

State:	**Actions Taken:**
North Carolina	(4/97) proposed HB 1127 - still in house (9/97) NC Utility Commission begins study on deregulation
Minimum Amount of Information Required: Percentage of each type of fuel Water use and wastewater discharge associated with electrical generation Air emissions (NO_x, SO_2, CO, PM, Pb, VOC, CO_2, and hazardous air pollutants)	**Which Suppliers Must Disclose:** registered electricity supplier **Level of Disclosure:**
When Information Needs To Be Presented to Buyer: Included with marketing materials to new customers, and periodically to existing customers	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

*http://www.ncga.state.nc.us/cgi-bin/billnum.pl

State:	**Actions Taken:**
Ohio	PUC and legislature studying electric restructuring Legislative Study Committee recommends that mandatory disclosure is part of restructuring legislation.
Minimum Amount of Information Required: Generation resource mix	**Which Suppliers Must Disclose:**

Environmental characteristics of power supplies	
	Level of Disclosure:
When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

* Ohio Legislative Subcommittee on Restructuring Draft Report

State: Oregon	**Actions Taken:** Portland General Electric Plan pilot plan approved allowing for retail choice by 10/98
Minimum Amount of Information Required: PGE pilot plan includes disclosure of: generation source annual air emissions system average resource mix	**Which Suppliers Must Disclose:** Electricity suppliers certified to do business in the Customer Choice Introductory Program
	Level of Disclosure:
When Information Needs To Be Presented to Buyer: At time of sign-up, and four times a year thereafter	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

*Ron Karten, Oregon Public Utility Commission; Wind Energy Weekly 4/3/98

State: Pennsylvania	**Actions Taken:** (12/96) Electricity Generation Customer Choice and Competition Act becomes law (8/97) Pilot programs approved (pilot program suppliers must disclose fuel mix to customers upon request) (11/97) Proposed Rulemaking Order submitted for comments on disclosure
Minimum Amount of Information Required:	**Which Suppliers Must Disclose:**

Price (and price variability if applicable) Energy Efficiency Information (provided twice annually) Graph of the most recent annual average percentage of each resource used in the total electricity supplied, or the anticipated future mix	All EDCs and suppliers **Level of Disclosure:** Company
When Information Needs To Be Presented to Buyer: "Upon customer inquiry, upon entering into agreements with new customers, and as soon as possible when a significant change occurs in energy sources as specified in the terms of service with existing customers"	**Endorsed Tracking System:**
Enforcement Mechanism: Claims shall be factually supported upon customer inquiry and in the terms of service.	
Imports: "If the supplier cannot identify the energy source of its supply…the supplier shall disclose the average energy mix or equivalent information from the relevant market and identify that market by name. If the supplier cannot identify or approximate the energy source, the supplier shall disclose this fact."	

* http://puc.paonline.com/electric/electriccomp.htm; Andrew Altman, Clean Air Council

State: Rhode Island	**Actions Taken:** (8/96) H-8124 Substitute B, signed into law PUC will present draft rules at next Commissioner's Meeting Jan 27, 1998.
Minimum Amount of Information Required: Supply mix Emissions (and regional average)	**Which Suppliers Must Disclose:** All retail suppliers **Level of Disclosure:** Product
When Information Needs To Be Presented to Buyer: On bills, and with advertising	**Endorsed Tracking System:** Settlement-based
Enforcement Mechanism:	
Imports:	

* Mary Kilmarx, Rhode Island Public Utilities Commission

State: Vermont	**Actions Taken:** (12/94) Pilot program begins (12/96) PUC order/recommendation to Legislature (4/97) S. 0062 Electrical Utility Restructuring Bill passes Senate, still in House.
Minimum Amount of Information Required: Generation sources in the seller's mix and the percent of each source Quantity of major environmental impacts on Vermont per	**Which Suppliers Must Disclose:** Retail providers of Electricity

unit energy Energy efficiency opportunities	**Level of Disclosure:** Product
When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism: Electric System Benefits Administrator (appointed by Public Service Board) will perform annual review of disclosure, possible punitive damages	
Imports: No company can sell retail electricity in Vermont unless electricity was produced in compliance with the portfolio's environmental standards.	

*http://www.leg.state.vt.us/database/status/summary.cfm

State: Virginia	**Actions Taken:** (11/97) Commission issues Draft Report (model) on restructuring
Minimum Amount of Information Required: Disclosure (of fuel mix and emissions rate) has been proposed as a possible environmental conservation measure	**Which Suppliers Must Disclose:** All suppliers
	Level of Disclosure: Company-level
When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism: Mandatory claims-based by SCC or some other state agency	
Imports: Would like to place environmental restrictions on imports, but believes such an action to be against the US Commerce Clause	

*http://ditl.state.va.us/scc/news.htm

State: Washington	**Actions Taken:** (8/97) PUC approved Puget Sound Energy Pilot Program
Minimum Amount of Information Required: Pilot Program Suppliers: generation source(s) emission information for CO_2, SO_2, and NO_x	**Which Suppliers Must Disclose:** Energy suppliers in pilot program
	Level of Disclosure:

When Information Needs To Be Presented to Buyer:	**Endorsed Tracking System:**
Enforcement Mechanism:	
Imports:	

* Doug Kilpatrick, Washington Utilities and Transportation Commission