

# THE NEW CHALLENGE IN STATE P2 PROGRAMS: MEASURING THE PROGRESS AND IMPACT OF P2 REGULATORY INTEGRATION

States are increasingly integrating P2 into everyday environmental agency activities, such as enforcement, inspections, and rulemaking. But can we tell if it's working? Our

review of 11 state P2 programs reveals how they are developing innovative and comparable metrics that both demonstrate and catalyze progress in regulatory integration.

## **Background**

In the late 1980s and early 1990s, most state pollution prevention (P2) efforts focused on the provision of technical assistance, based on the premise that a lack of technical knowledge was the primary impediment to business implementation of P2. It has become increasingly apparent that technical assistance alone is insufficient to motivate systematic change in industry. As a result, state and federal agencies have adopted policies aimed at infusing P2 into the regulatory system.

## ***A review of 11 states' P2 integration metrics***

This process of "P2 regulatory integration" is an attempt to overcome regulatory inertia against P2. It works by weaving P2 fully into agencies' core environmental programs—including permitting, enforcement, rulemaking, and inspections.

States' measurement of their own progress in promoting P2 has followed a similar course—that is, a focus on measuring the impact of technical assistance has preceded measurement of P2 regulatory integration. States began by tracking their activities related to technical assistance provision, such as the number of training sessions offered or facility P2 assessments performed. A recent *Pollution Prevention Review* arti-

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***Michael Crow, Anne Reynolds,  
and Anthony Sasson***

cle by Manns and Varlamoff<sup>1</sup> indicates that, in 1996–97, most states were still focusing their P2 measurement on the provision of technical assistance, despite the growing focus on P2 regulatory integration.

Now that trend is changing. In the spirit of government reinvention, state efforts to integrate P2 into day-to-day operations have accelerated. Along with reinvention have come new requirements for government performance measurement.

At this confluence, states are beginning to experiment with the challenge of measuring their progress in P2 regulatory integration. In doing so, states must answer the question: ***Is the agency really integrating P2 into its activities?*** Most agencies do not have a system in place to answer whether P2 is becoming fully integrated or institutionalized over time.

Furthermore, even when an agency has good knowledge of the level to which P2 is woven into agency activities, a second question is necessary: ***Are the agency's integration activities stimulating P2 and achieving environmental goals?*** A comprehensive P2 regulatory integration performance measurement system—which our research did not uncover—would answer both of these questions for an agency.

Our hope for this article is to stimulate practitioners' emerging thinking on the development of such comprehensive systems for their own states. There is no other known national effort that provides a status report on the practices used to measure P2 regulatory integration. We consider this article a vital, early step to help streamline measurement systems, to spur further innovation, to encourage early standardization across states, and to share early lessons with state P2

programs that are beginning to design or adopt a measurement system.

## Methodology

In September 1999, Tellus Institute began a review of the measurement practices of several state P2 programs, as part of an effort by the Ohio Environmental Protection Agency (Ohio EPA) to develop a plan for its own P2 regulatory integration metrics. For this purpose, "P2 regulatory integration" means efforts to institutionalize P2 and a prevention approach in everyday agency activities, such as inspections, permitting, enforcement, and rulemaking. We specifically decided not to look at metrics related solely to agency provision of P2 technical assistance.

To gather information relevant to Ohio's needs, we interviewed and/or collected data from appropriate P2 staff at 11 state agencies on the metrics these states use to measure P2 regulatory integration activities, and how the states collect and use data related to these metrics.<sup>2</sup> To supplement this information, we also examined recent literature on P2 integration and the "Pollution Prevention Metrics Menu" developed by the Northeast Pollution Prevention Roundtable, published by the Northeast Waste Management Officials Association (NEWMOA), and agreed to by the Northeastern states. We summarized the information in a database and draft report, which we made available to interviewees in November 1999 for their factual review.<sup>3</sup>

## Our Findings

Our research revealed much more depth and variety in metrics for P2 regulatory integration than we had anticipated. Granted, much of the measurement is linked to P2 regulatory integration pilot projects, rather than to ongoing, institutionalized procedures. However, most states appear to have at least some institutionalized metrics.

**In the spirit of government reinvention, state efforts to integrate P2 into day-to-day operations have accelerated.**

***Are the agency's integration activities stimulating P2 and achieving environmental goals?***

Texas is implementing an especially broad-based integration strategy across several programs, and has metrics tracking progress in each area. Those states doing the least in terms of measurement cite the difficulties of limited resources and limited coordination among various agency programs.

### Agency Use of Measurement Data

Why do agencies collect data on P2 integration? We observed four typical ends for data collection:

- *To evaluate and reform their own activities.* Illinois inspectors provide the P2 office with copies of checklists indicating the P2 suggestions offered during inspections. The Illinois P2 office uses this information to refocus its training for inspectors on new P2 ideas or more relevant sectors. The P2 office is also able to send P2 staff on visits with inspectors who may need additional help integrating P2 into their inspections.
- *To justify and report progress to upper management, the legislature, and EPA.* This use represents the most typical for government performance measurement results. For example, reporting integration progress to EPA is a condition of some states' Pollution Prevention Incentives for States (PPIS) grants.
- *To hold programs and staff accountable for progress.* Data is used to demonstrate that staff are (or are not) making progress in integrating P2 into their jobs. This is a prevalent use in states where there is high-level support for P2 integration.
- *To remind staff of the requirement to integrate P2.* The process of collecting data can be viewed as an important tool in reminding agency staff of the importance of integrating P2 into their activities. Such an advantage can be associated with many of the data collection methods listed below.

### Data Collection Methods

Most data collection and assessment we encountered is being conducted by staff in the agency's P2 unit, rather than by other agency staff, such as permit writers and inspectors. This is likely because we were interviewing P2 staff, and because P2 has not yet been fully integrated into agency core activities, so measurement is seen as a responsibility of P2 offices.<sup>4</sup> Some approaches to data collection:

- *The P2 unit tracks its own activities.* For example, most states track the number of agency staff who have received P2 training provided by the P2 unit.
- *The P2 unit tracks activities using surveys.* Such surveys vary in scope and frequency. Alabama recently conducted a one-time survey of all its programs, enabling it to understand both the extent to which media programs have made progress on P2 integration and the metrics they have used to gauge their own progress. This technique may be particularly useful in states where integration activities are fairly decentralized. It also serves to remind staff that their progress is being measured. One disadvantage to using surveys is that response may be limited because data collection is not considered a vital part of program staff activities.
- *Agency staff complete a standardized P2 form.* This method is much closer to institutionalizing data collection, in that staff should automatically fill out the form when completing an activity, such as an inspection. For example, Illinois inspectors must fill out and return

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a P2 Summary Feedback Form after each inspection.

- *Including a P2 question or section in a form or database that agency staff fill out as standard practice.* For example, Texas collects enforcement activity and outcome data via a P2 section it has placed in an enforcement database. The database is used by all inspectors to record their activities. Because it is integrated into an existing process, inspectors are less likely to see data collection as burdensome and are more likely to facilitate collection.
- *Tracking technical assistance referrals.* In this approach, technical assistance staff, rather than program staff, provide information on

referrals and the results of referrals. Iowa expects to collect data this way from technical assistance providers internal and external to the agency.

- *Surveying regulated facilities.* P2 staff conduct a survey (mailed or faxed) of a sample of

facilities targeted by an agency P2 initiative, in order to gather information on the outcome of the initiative. For example, Illinois has collected information from inspected facilities where the inspector made P2 suggestions. This technique can provide valuable information on the impact of agency efforts, although it does not offer a fully institutionalized and on-going data collection system. In addition, some states have experienced low response rates with this technique unless they were very persistent.

- *Examining agency reports or documents.* P2 unit staff may routinely examine agency reports and documents that do not typically have separate P2 sections, to determine whether P2 has been included. For example, Texas examines rule-

making records to determine how many rule-making teams were multimedia.

- *Using existing databases to track environmental outcomes.* Staff can analyze data from existing databases, such as for the Toxics Release Inventory (TRI) or the Biennial Reporting System (BRS), or, in Massachusetts, information reported under the Toxics Use Reduction Act (TURA). New York and Massachusetts are both using existing data to measure P2 integration progress. There are, of course, difficult issues of attribution and causality associated with tracking reductions in waste generation or discharge. Still, this is a valuable use of existing data that could further stimulate P2 progress.
- *Using facility reporting requirements to track environmental outcomes.* One example is tracking the outcome of supplemental environmental projects (SEPs) by examining final reports that must be submitted by facilities. Another example is Oregon's Green Permits program, which requires participating facilities to report P2 performance.

## Two Types of Metrics

P2 integration metrics can be divided into those that are based solely upon agency activities—such as the number of inspections in which P2 suggestions were made—and those that are based upon the effect, or outcome, of the agency activity.

This second category of outcome-based activities can be further divided into outcomes that reflect (1) facility actions that were motivated by agency activities, such as the number of P2 suggestions by inspectors that were implemented by facilities, (2) financial results, such as savings by facilities implementing P2 suggestions, or (3) environmental results, such as pounds of pollution reduction due to including P2 in permits.

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Both activity- and outcome-based metrics are useful. Most of the metrics we observed among states are the first type—focused on agency activities—likely because this is the logical first step in developing a measurement system, and because activity measurement is simpler than outcome measurement. However, states are beginning to attempt to bridge the gap between their P2 integration activities and outcomes, and several have developed innovative approaches to doing so, sometimes using existing data sources.

**Exhibits 1 and 2** review a sampling of activity- and outcome-based metrics relevant to different kinds of agency activities. The following two sections explore some of the more noteworthy metrics we found.

### **Is the Agency Really Integrating Pollution Prevention into Its Activities? Noteworthy Techniques for Measuring Agency Activities**

These metrics can illuminate the extent to which the agency is changing how it does business, can create accountability for change, and can even serve to catalyze change. Some examples of activity metrics:

- *Number of times P2 was included in staff actions, such as inspections or pre-permit meetings.* Several states are collecting these data to gauge the extent to which staff have changed their ways. This information is most typically collected via checklists that are forwarded to P2 staff.
- *Number of times P2 was included in written documents, such as notices of violation or enforcement orders.* Several states are also tracking these data. One of the most effective and easy methods appears to be Oregon's inclusion of a P2 question in an enforcement database.
- *Number of referrals for P2 assistance made by program staff.* Several states are tracking these data, which they can acquire from either the program staff or the P2 assistance staff.
- *Percentage of program's strategic plans that include P2.* This type of metric is motivated by the belief that change of institutional drivers, such as strategic plans, annual work plans, or position descriptions, is a necessary component of a P2 regulatory integration program. Oregon began tracking the percentage of

**Exhibit 1. Examples of Activity-Based P2 Regulatory Integration Metrics Measuring Internal Agency Actions That Integrate P2 into Core Activities**

Category of Core Agency Activity	Example of P2 Integration Metric	Data Collection & Tracking Method	Sampling of State Programs That Use (or Plan to Use) This Metric
Enforcement	Number or percentage of notices, orders, or letters that include P2 language	Copies forwarded to P2 program; enforcement database; one-time survey	AL, IA, MA, NY, OR, TX
Inspections	Number of inspections in which P2/multimedia was addressed	Inspectors submit form for each facility to P2 office	IL, MA, MI, NY, WA
Internal Planning	Number or percentage of program strategic plans that include P2	P2 program examines strategic work plans	OR
Permitting	Number or percentage of permits with P2 conditions	P2 staff contact permitting staff to compile figures	IL, TX
Rulemaking	Number of rules with P2 components	Rulemaking database	TX

**Exhibit 2. Examples of Outcome-Based P2 Regulatory Integration Metrics  
Measuring Outcomes at Facilities That Result from Agency P2 Integration Activities**

Category of Facility Activity	Example of P2 Integration Metric	Data Collection and Tracking Method	Sample of State Programs That Use (or Plan to Use) This Metric
Enforcement	Pollution reduction attributable to P2 requirements in SEPs or other orders/judgments	Survey of enforcement program; facilities submit proof of SEP completion to enforcement staff, who transmit it to P2 staff.	AL, OR
Inspections	Environmental and financial benefit of P2 assistance provided during inspections	Review of data from annual inspector survey, Governor's award programs, and BRS/TRI; follow up with facilities	IL, IA, NY
Permitting	Pollution reduced because of P2 in permits	Required facility performance reporting in innovative permits program; permit writers enter information into database; P2 office follows up with facilities	OR, TX, WA
Rulemaking	None found	N/A	N/A

NOTE: Exhibits 1 and 2 provide a sampling of the pollution prevention (P2) regulatory integration metrics that were discovered by Tellus Institute through interviews of P2 program staff from 11 states. The full matrix, which is available upon request, should not be viewed as a full listing of all P2 measurement activities taking place in each of the 11 states or in the U.S. as a whole.

strategic plans that include P2, which it gathers by examining revisions to the Oregon Department of Environmental Quality's (DEQ's) strategic plan.

- *Number of staff trained in P2.* Many P2 units track this metric, readily available because they do the training. However, some programs feel it has become less relevant than other metrics as they have completed full rounds of staff P2 training—and especially because it does not measure whether the training affects the activities of agency staff.
- *Number of rules that incorporate P2.* Texas appears to be one of the few states focusing on integrating P2 into rulemaking, and monitors it via a P2-related question in the agency database used to track new rules.
- *Use and usefulness of a P2 tool.* New Jersey plans to employ several interesting metrics to gauge the usefulness of a materials accounting tool used to create a profile of a facility's environmental performance. Air permit writers are asked to report the cross-media shifts and fugi-

tive emissions discovered through use of this tool. These metrics help ensure that permit writers use the tool and document information that points towards P2 opportunities, such as new knowledge about fugitive emissions. New Jersey will collect these data via an internal monthly survey. The collection of this metric is an important recognition that the activities related to data collection can also be regulatory integration activities, as they are required by regulations, concern P2, and can be used to stimulate P2. Data collection, analysis, dissemination, and application are important areas in which agencies can apply P2 integration performance metrics.

**Are the Agency's Integration Activities Stimulating P2 Activity and Achieving Environmental Goals? Noteworthy Approaches to Measuring Outcomes**

These metrics indicate whether an agency's action has effected change at a facility. Outcomes could be a P2-related activity, such as conducting

a P2 assessment or implementation of a best management practice (BMP) suggested by an inspector. Other facility outcomes can include actual reduced emissions or financial savings. Some noteworthy outcome metrics being employed are:

- *Percentage of emission reductions attributable to source reduction during new source review permitting.* Texas P2 staff gather this information from a permitting database. Permit-writers record reduction information as a standard practice on permit application review forms.
- *Use of new best management practices (BMPs) at target facilities.* In a pilot project, Oregon staff developed a baseline of BMPs at previously unpermitted facilities before providing P2 assistance and encouraging other BMPs, and then permitting the facilities. The BMP baseline will allow them to gauge progress in lieu of environmental outcome data. In this case, Oregon staff would track the implementation of BMPs, but not the actual pollution reduction resulting from BMP implementation.
- *Pollution reduction resulting from P2 in inspections.* Iowa's P2 program will collect estimates of pollution reduction from technical assistance providers, and inspectors will provide a count of their hours on all inspections, whether or not P2 was addressed. This is in order to gauge the pollution reduction resulting from P2 suggestions made during inspections as compared to the additional staff hours spent incorporating P2 into inspections. Normalizing based on resource-use can be useful in demonstrating the efficacy of a pilot integration project.
- *Speed with which a non-compliant facility comes into compliance.* Iowa will be comparing the compliance timelines of facilities that comply with and without using P2 approaches.
- *Using RCRA or TRI data to estimate impact of agency P2 inspection.* This metric involves using aggregate and time-series data from RCRA's Biennial Reporting System (BRS) and the TRI to establish correlation between agency multimedia/P2 inspections and pollution reduction. As part of its M2P2 (multimedia pollution prevention) program, New York will use these data (as well as some data collected from facilities) to show the difference between M2P2 facilities and non-M2P2 facilities, as well as any change in facility performance before and after M2P2 inspections.
- *Reduction in key chemical usage in certain sectors, as a result of self-certification program.* As part of its Environmental Results Programs, Massachusetts requires some small businesses to note their use of key chemicals, such as perchloroethylene for dry cleaners. Changes can be linked to the P2 guidance provided. The NEWMOA P2 Metrics Menu also suggests tracking chemical usage, using purchasing and use records for chemical inventories that are required as part of environmental management systems under ISO 14000.
- *Number of P2 recommendations implemented by facilities.* Several states collect these data, frequently through follow-up contact with facilities. Response to such follow-up can be quite low, which often is attributed to facility staff turnover or disinterest. Mail and fax surveys are less effective without personal contact. Success appears to improve when P2 staff are persistent, or when it is media program staff (such as inspectors) who collect the data.

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- *Pollution reduction attributable to SEPs.* Enforcement orders (such as consent decrees and settlement orders) normally require strict reporting of progress. Some states are tracking pollution reductions attributable to P2 SEPs included in enforcement settlements.
- *Companies moving into compliance or below regulatory thresholds.* The 1999 Manns and Varlamoff article reports that a limited number of states are tracking the number of companies that have improved compliance status or are no longer required to report. States may be able to link these facility improvements to agency P2 integration efforts, and thus utilize a proxy for data on actual emissions reductions.

#### Standardization Issues

Standardization of P2 regulatory integration metrics across the country would allow for valuable comparisons, but is it possible? Despite growing interest in P2 regulatory integration measurement, most states do not appear too concerned about standardizing the metrics they are collecting. A more pressing concern is simply trying to be creative and meet the needs of the wide

array of integration experiments developing in these states.

Nonetheless, it still seems possible and appropriate to attempt to develop metrics that are comparable and can be aggregated across states—especially in the infancy of integration, before it is too difficult to turn back. Some of this is already happening, as some states' metrics are rather standard, such as the number and percentage of enforcement actions that include P2 SEPs.

The "P2 Metrics Menu" developed by the Northeast P2 Roundtable offers a good starting

point for standardization. In July 1999, the P2 directors of seven Northeast states agreed to an initial, voluntary menu of P2 metrics, in the hope of facilitating regional data aggregation. For example, the Northeast states agreed that all metrics should be reported to reflect calendar years, because of the extreme variance in state fiscal years. At this time, the menu is intended to serve as only guidance to states. In fact, the Metrics Menu is explicitly intended not to be used for comparison among states—many states resisted that idea, concerned that unfair comparisons might result—but it does ultimately show promise in that regard.

The P2 Metrics Menu is divided into three main categories: assistance activities (20 metrics); regulatory and enforcement activities (six metrics); and environmental and economic outcomes (14 metrics), so not all of the metrics included in NEWMOA's menu are directly related to P2 regulatory integration. All of the metrics for regulatory and enforcement activities, and two of the assistance activities metrics, are directly applicable to P2 regulatory integration activities. In addition, all of the metrics for environmental and economic outcomes could be models for P2 regulatory integration metrics.

While the menu offers little guidance on how data can be collected, leaving that to the states, we believe that such a tool can be especially helpful in states with few resources. For instance, one state P2 program noted that a planned survey was delayed for one year because it had difficulty developing a set of metrics on its own.

Standardization would require careful selection of common metrics from a long list of possibilities. How can states best decide among them? The Northeast states used the following criteria: simplicity, clarity, relevance for the intended audiences, feasibility, credibility, and balance between time involved with collecting data and its utility.

**Despite growing interest in P2 regulatory integration measurement, most states do not appear too concerned about standardizing the metrics they are collecting.**



In writing of their proposal for a national P2 metrics system, Neltner and Zarker<sup>5</sup> suggest similar criteria: relevance to the public, upper management, and agency technical staff; relevance to P2; availability of data; ability to reflect broader trends; support by stakeholders; and ability to reflect resource efficiency (i.e., normalization).<sup>6</sup>

These criteria and the P2 Metrics Menu represent very good first steps at standardization. As more states implement systems to measure their progress with P2 integration, interest in standardization and benchmarking among states will likely increase. We encourage U.S. EPA to enthusiastically support states in their ongoing efforts and to incorporate lessons into its own metrics efforts.

### **Promoting P2 Regulatory Integration Measurement**

Based on our research, we offer several strategies to state P2 programs regarding their promotion of a P2 regulatory integration measurement system. States may want to consider issues of standardization and opportunities for cross-state collaboration when designing their own measurement approaches.

- *Focus on the Goal.* A P2 program needs to decide on goals for measuring P2 integration. Is it to institutionalize frequent reminders to agency staff on the importance of P2—and to hold them accountable for their integration efforts? Or is the purpose to evaluate and reform the P2 program's activities? Or is the aim to demonstrate progress—either in activities or outcomes—to upper management? Answering these questions is a necessary first step in the design of a P2 regulatory integration performance measurement system.
- *Include Measurement in Each Integration Initiative.* It can be difficult for a P2 program to design a comprehensive measurement system because

each of the actual P2 integration activities may be decentralized. Thus, the activities and approaches will vary greatly between various parts of the agency. But the P2 program can take on the role of strongly encouraging each agency program to design integration initiatives that are measurable, and to include a measurement system in the design. Whenever possible, metrics should be quantifiable, relevant to the activity goal, and comparable to other agency metrics, and the data should be collected and summarized within the individual program offices. For example, to track progress toward a goal of integrating P2 into 100% of inspections, returning inspectors

could be required either to (1) fill out a P2 integration feedback form to report on their success and problems, or (2) have a check box or question on P2 in an inspection report form that is in standard use by inspectors. Inspection program staff could then be charged with summarizing this information and forwarding it the P2 program, unless such data is automatically entered into a database anyway.

- *Publicize Metrics.* Another appropriate role for a P2 program is to conduct internal publicity of metrics to staff and upper management, along with a comparison to stated goals. To continue with the example from above, a P2 program could highlight the information summarized and forwarded by the agency's hazardous waste program, stating that P2 was somehow integrated into 80% of the inspections conducted in a particular quarter, along with narrative information on the types of P2 suggestions made (if this information is col-

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lected via feedback form). This information—an activity-based metric—could potentially serve to motivate hazardous waste inspectors to move closer to the 100 percent goal, could motivate other parts of the agency to integrate P2 into inspections, could help better orient P2 training provided to inspectors, and could provide a yardstick of progress to upper management. A state P2 program could take on a similar role with Toxics Release Inventory (TRI) data. The information could be assessed, interpreted, and publicized

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(internally) by the P2 program. These reports could highlight sectors ripe for P2 outreach or P2 inclusion in enforcement actions (such as through SEPs), or highlight the trends

in waste generation or use of specific toxics that could motivate P2 integration activities.

- *Demonstrate a Measurement System.* A P2 program may prefer that a program office measure its own P2 regulatory integration activities. Still, the P2 program could take on a demonstration role to foster in-house examples of P2 regulatory integration performance measurement systems. This would have the dual benefit of measuring the impact of an integration effort, and demonstrating how a measurement system should be designed. This could be especially useful in cases where implementation of the initiative involves several units at an agency. Such is the case with including P2 SEPs in enforcement settlements. Two goal-oriented measures are percentage of SEPs with P2, and SEPs with P2 as a percentage of total enforcement settlements. A P2 program could also consider designing and implementing some interim metrics to identify institutional obstacles to the number of P2 SEPs executed. What

steps must occur to get P2 SEPs in enforcement settlements? Are these steps occurring at the agency? For example, the P2 program could track how many notices of violation mention P2, how many administrative orders suggest the SEP option, how many enforcement meetings involve discussion of P2 SEPs, and how many companies come forward with SEP ideas that are not accepted by the agency.

As a demonstration project, the P2 program could design and implement a system by which these data are tracked and forwarded to the P2 program. Tracking this information can indicate some problems that may be hindering the agency in fully meeting its P2 SEP goal, which the P2 program could publicize and/or try to address. It is important to recognize, both here and elsewhere, that the more successful demonstration metrics appear to have been developed by P2 programs in concert with agency staff responsible for collecting data—to ensure buy-in and greater likelihood of institutionalization of the practice.

- *Demonstrate a Measurement Survey.* If demonstration of an ongoing metric system seems too ambitious, a P2 program may want to demonstrate a one-time sample survey approach. For example, the survey could take the form of follow-up visits or calls to a sample of facilities recently inspected. These interviews could provide insights into the impacts of the inspectors' efforts to catalyze P2, as is the case in Illinois.
- *Measure Institutional Drivers.* Another appropriate role for a P2 program could be to track P2 regulatory integration initiatives related to agency culture and institutional drivers. This could include the percentage of staff position descriptions that include P2 elements, which could routinely be compared to a goal of X percent. It may also include the percentage of tasks in program or agency strategic plans that address P2.

- *Capitalize on Current Measurement Approaches.* There is currently a surge of interest in government performance management, and there is also an abundance of existing performance measurement and reporting systems. To be most efficient and effective, a new P2 regulatory integration measurement system should build upon any existing systems for tracking inspections, enforcement activities, rulemaking, etc. Many examples collected from states indicate that P2 was integrated into already existing enforcement databases or permitting tracking systems. In order to be best prepared to encourage the design of integration initiatives that include a measurement scheme, a P2 program should be fully informed about how each agency activity is currently measured, and should seize opportunities to insert P2 when various agency information systems are redesigned. In addition, P2 programs should try to understand what P2 integration metrics are already being collected elsewhere in the agency, and learn from them.

## Conclusions

Our findings are very encouraging and enlightening for state agencies that are implementing P2 regulatory integration and searching for techniques to measure and catalyze success.

The P2 programs we contacted varied a great deal, especially in regard to financial resources and staff size. Their agencies' approaches to integration varied as well. Some were decentralized, others more centralized; some were limited in

scope, while others were more far-reaching across the agency. The differences were perhaps linked to the variations in explicit management and political support for P2 and P2 regulatory integration initiatives. We found that this diversity, as well as recent pressure to measure government performance, has bred tremendous innovation.

The breadth and depth of our findings suggest not only that implementing a metrics strategy is both a critical and viable activity for P2 programs involved in any degree of regulatory integration, but also that there exists common ground upon which a foundation for national standardization can be built.

**Many examples collected from states indicate that P2 was integrated into already existing enforcement databases or permitting tracking systems.**

## Notes

1. Manns, E.K., & Varlamoff, S.M. (1999, Winter). Internal performance measurement in state P2 agencies. *P2: Pollution Prevention Review*, 9(1), 55-65.
2. The states contacted were Alabama, Iowa, Illinois, Massachusetts, Michigan, New Jersey, New York, North Carolina, Oregon, Texas, and Washington. These states were selected based on an understanding that they were likely to be collecting P2 regulatory integration metrics.
3. The full database can be obtained from Ohio EPA.
4. Although beyond the scope of the original research, some P2 program staff informed us that staff in other programs in their agencies are implementing their own metrics.
5. Neltner, T., & Zarker, K. (1999). The P2 measurement challenge—part I: A national P2 index. *Prevention First*, 1(1), 11-13.
6. Neltner and Zarker's proposal is not specifically oriented toward P2 regulatory integration metrics, but their criteria are relevant and useful to this discussion.

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**Michael Crow** is a research associate at Tellus Institute, a Boston-based nonprofit research and consulting organization. He specializes in industrial pollution prevention policy, and his current work focuses on pollution prevention regulatory integration efforts in Ohio and Florida. At the time of writing, **Anne Reynolds** was an associate scientist at Tellus Institute, where her work focused on pollution prevention, watershed protection, and public involvement in environmental decisionmaking. **Anthony Sasson** is an environmental supervisor in the Office of Pollution Prevention of the Ohio Environmental Protection Agency. He is responsible for pollution prevention technical assistance to businesses and the integration of pollution prevention into the Agency's activities. He has served on the Agency's Leadership Development and Quality Coordinating teams, and on the boards of the National Pollution Prevention Roundtable and Ohio Alliance for the Environment.

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