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Compliance Literature Search Results

Citations to Over Two Hundred
Compliance-Related Books and
Articles From 1999 to 2007



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This document, as well as additional information on compliance research literature, can be found at:

<http://www.epa.gov/compliance/resources/reports/compliance/research/index.html>

NOTICE AND DISCLAIMER

This report contains a directory of resources for persons employed in, or interested in learning more about, the field of environmental compliance and enforcement and related topics. It identifies governmental and non-governmental literature on topics related to compliance assurance, behavior, monitoring, measurement, deterrence, enforcement, environmental management, voluntary environmental programs, environmental performance, the relationship of compliance and performance to business value and competitiveness, and other similar topics. The report is intended to serve as a starting point for persons interested in identifying and reviewing pertinent literature on these topics. All of the referenced documents are in the public domain and were included because they cover topics of potential interest to the U.S. Environmental Protection Agency (EPA), state, tribal, and local agencies, academicians, regulated entities, communities, non-governmental organizations (NGOs), and the public. EPA makes no guarantee nor assumes any liability with respect to either the accuracy or use of any of the literature or information cited in this document. The inclusion of literature in this document should not be viewed as an endorsement of these resources by EPA nor should the exclusion of any similar literature, whether deliberate or otherwise, be construed as an EPA opinion on the literature. The literature summaries and highlights provided in this report are not themselves compliance literature and should not be cited or quoted as original sources; rather, persons requiring additional information on, or clarification of, any of the literature described in this report should obtain and review the source materials or consult with the authors directly. This report does not in any way represent EPA guidance nor does it create or explain EPA policy and should not be relied on for any purpose other than as a reference guide to publicly available compliance-related literature.

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INTRODUCTION

The environmental and public health benefits of the nation's environmental laws cannot be realized unless there is a high degree of compliance by the regulated community. Effective compliance assistance and strong, consistent monitoring and enforcement are critical to achieving these benefits. At the same time, the number, nature, and complexity of the environmental problems our nation faces today makes it increasingly important for all parts of society to take active responsibility for improving environmental quality in regulated and unregulated areas.

The United States Environmental Protection Agency (EPA or the Agency), together with our state and tribal partners, is responsible for assuring compliance with the nation's environmental laws. The Agency and our partners seek also to promote an environmental stewardship ethic by which firms and individuals strive to exceed regulatory requirements. Securing both of these outcomes for the American people is at the heart of EPA's mission and a key element of EPA's Strategic Plan in *Goal 5: Compliance and Environmental Stewardship*. <http://www.epa.gov/ocfo/plan/plan.htm>. The purpose of this *Compliance Literature Search Results* report is to facilitate the realization of these goals by identifying for further consideration the results of applicable research on compliance and other environmental behavior-related topics. See the Notice and Disclaimer statement on the second page of this report for additional relevant information on EPA's intent in preparing and publishing it.

The *Compliance Literature Search Results* report presents the results of a literature search for current books and articles addressing a broad range of compliance-related topics. These include compliance assurance, compliance monitoring, deterrence, enforcement, environmental management, program measurement and evaluation, voluntary environmental programs, and relationship of compliance and performance to business value and competitiveness. The **'99-'07 Compliance Literature – Table of Results**, beginning on page 12, provides citations to over 200 compliance-related books and articles from 1999 to 2007. All of the documents referenced in the report are in the public domain and may be identified and shared without restriction. Persons interested in citations to pre-1999 compliance-related literature should consult EPA's April 1999 *Compliance Information Project Literature Summaries* report (EPA-300-R-99-002) in which the Agency published the results of a literature search for pre-1999 books and articles on similar topics.

Government's interest in assuring compliance and promoting environmental stewardship is shared by a wide range of stakeholders, including industry, environmental groups, academia, other non-governmental organizations, and the public. The *Compliance Literature Search Results* report is intended to serve as a starting point for anyone interested in identifying and reviewing pertinent literature on the topics.

EPA's inclusion of literature in this document does not represent an endorsement of these resources by EPA. Nor should the exclusion of any literature be construed as a negative EPA opinion on it. In assembling the documents for citation in this report, emphasis was placed on identifying representative studies for each topic. Users should be able to quickly identify a broad range of relevant and useful compliance-related literature using the referenced documents as a starting point for research. The authors' own citations and bibliographies can be consulted for leads to additional documentation.

Most of the items referenced in this report received formal peer-review before publication. The compliance literature field, however, is a rapidly-evolving area with new books, articles, and reports issued regularly. To have limited the report to final, published, peer-reviewed documents would have required omitting preliminary or "working" papers that are also thought-provoking and capable of stimulating useful insights. Therefore, such papers are also included.

The compliance literature summaries and highlights provided in this report are not themselves original source materials. Interested persons should, generally, obtain, review, and cite from the original documents themselves. In assembling the referenced literature, EPA contacted many of the authors directly with questions concerning the research or to clarify the status of papers. EPA's experience in doing so suggests that the researchers whose papers are referenced in this report would welcome similar inquiries from other interested readers.

EPA encourages readers to further share the report with other interested persons within or outside of EPA. EPA welcomes comments on the literature cited in the report and how to make future literature searches more useful. Readers are encouraged to bring new or additional compliance literature to the Agency's attention for future consideration. Please address comments and suggestions of this nature to the attention of Jon Silberman, *Compliance Literature Search Results* Project Manager, at silberman.jon@epa.gov or 202-564-2429.

HOW TO USE THE COMPLIANCE LITERATURE TABLE: EXAMPLES

The 1999-2007 compliance and environmental behavior literature search conducted by EPA to develop the *Compliance Literature Search Results* report identified many potentially responsive compliance and environmental behavior-related books and articles. Over two hundred of these documents are referenced in the **99-'07 Compliance Literature – Table of Results (Table of Results)** beginning on page 12.

EPA's goal in sharing the citations to this body of literature is to stimulate the understanding and discussion of new ideas, insights, and evaluative tools for improving the quality and effectiveness of compliance, enforcement, and environmental stewardship efforts. These outcomes are shared by government, the private sector, academia, and the public. The referenced books and articles are diverse in their methodologies and findings. Some of the pieces of literature challenge prevailing assumptions, others lend support to existing approaches, but all serve as a stimulus to creative thinking.

The **Table of Results** includes, for each cited piece of literature, a brief summary of the document. These summaries are necessarily concise. In and of themselves, they provide minimal background and context on the literature. Their purpose is to assist readers in determining and prioritizing the literature for potential future, in-depth review by providing information useful in deciding whether a particular item may be of sufficient further interest to obtain and review in its entirety. Readers should always obtain and read full copies of the original source documents before referencing and using the literature. Copies of the original source documents can be obtained via the internet links or other source information provided for each referenced book or article.

To exemplify the richness of the literature in the **Table of Results**, additional information is provided below on ten illustrative articles addressing three topics. As with the selection of the over two hundred documents for the **Table of Results**, the selection of these ten pieces of literature does not, in and of itself, represent an endorsement of these resources by EPA, thus the background information in this section of the report is also not intended for direct citation or quotation in lieu of the source materials themselves.

Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews):

EPA, with our state and tribal partners, intend our environmental compliance assurance and enforcement programs to deter environmental noncompliance. Specifically, the programs should persuade violators to take precautions against falling into noncompliance again (specific deterrence) and dissuade others from violating the law (general deterrence). Does empirical research exist which studies the general deterrent impacts of inspections and enforcement actions? If yes, what results did the researchers obtain? A person researching this issue will want to consult the *Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)* section in the **Table of Results**. Upon doing so, he or she will find, among many other potentially useful information sources, the following four empirical analyses of the general deterrent effect:

(1) Thornton, D., N. A. Gunningham, and R. A. Kagan; *General Deterrence and Corporate Environmental Behavior*; Law and Policy; Vol. 25 (2): pp.262-288 (April 2005). <http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1083&context=igs> [Table of Results #20]

– The methodology for this general deterrence study involved tracking the dissemination of 112 EPA Headquarters enforcement press releases in the print media and surveying 233 facility environmental compliance managers as to their knowledge, perceptions of, and responses to, “signal cases” in the sectors in which they were employed. Additional in-depth interviews of a more limited number of managers were also conducted.

– The researchers found a weak association, only, between increased information about penalty cases and perception of legal risk. Firms with higher perceived exposure to being detected or penalized were not significantly more likely to have taken a responsive environmental compliance action. Moreover, firms, generally, did not obtain or retain accurate information about the frequency or magnitude of penalty information. Yet a majority of companies thought their risk of detection for noncompliance was high and reported that they had increased their compliance-related activity in some way after hearing about a fine or prison sentence at another company.

– The researchers concluded from their study results that, for most firms, general deterrence likely serves primarily reminder and reassurance functions. Firms already committed to compliance for normative and reputational reasons, according to the researchers, tend to view themselves as responsible corporate citizens with no need to fear the social and economic costs that can be triggered by serious violations. For these firms, learning about penalties against other firms reminds them to continue to take positive steps to comply while reassuring them that free-riders will be punished.

(2) Shimshack, J. & Ward, M.; *Enforcement & Over-Compliance* (working paper/Jan. 2006). http://www.tufts.edu/~jshims01/Enforcement_and_Overcompliance.pdf

[Table of Results #8]

(3) Shimshack, J. & Ward, M.; *Regulator Reputation, Enforcement, and Environmental Compliance*; Journal of Env. Economics and Management. Vol. 50: pp. 519-540 (2005). http://www.tufts.edu/~jshims01/Regulator_Reputation.pdf

[Table of Results #23]

– These companion studies analyze empirically the impact of Clean Water Act (CWA) enforcement on biochemical oxygen demand (BOD) and total suspended solids (TSS) discharges from the pulp and paper industry. The papers highlight commonly-overlooked features of the enforcement process. Collectively, according to the authors, the research indicates that a significant reduction in discharges could be achieved with a relatively small additional investment in enforcement due to the deterrent impact of penalty actions.

– In their 2005 paper, Shimshack and Ward found that the marginal penalty action for water pollutant violations results in about a two-thirds reduction in the statewide violation rate in the year following the penalty. This large result primarily occurs due to the regulator's enhanced reputation with other plants in a regulatory jurisdiction responding nearly as strongly to a sanction as the fined plant itself. However, the reputation deterrence effect decays significantly after one year, suggesting that plants regularly update their beliefs regarding the regulator's credibility and reputation. Non-penalty enforcement responses, in contrast, appeared to have little impact on the plants' compliance.

– In their 2006 paper (which is currently unpublished but has undergone preliminary vetting at various professional symposia), the authors found that credible enforcement of water pollutant violations results in discharge reductions by likely non-compliant plants that go well below their legally permitted limit. Enforcement of water pollutant violations also results in further discharge reductions among firms which typically comply. In other words, even plants that typically emit well below allowable levels reduce discharges more when the threat of sanctions for violations is increased. The authors found that aggregate discharges within a state fell approximately 7 percent in the year following a sanction within that state. Most of this reduction is due to plants going beyond compliance, rather than simply a reduction in violations. The paper also demonstrated how these empirical results can be rationalized by economic theory.

(4) State of Oregon Department of Environmental Quality; *General Deterrence of Environmental Violation: A Peek into the Mind of the Regulated Public* (OR DEQ 2004). <http://www.deq.state.or.us/programs/enforcement/DeterrenceReport.pdf>

[Table of Results #28]

- This report focuses on general deterrence and describes research based on a survey of 450 Oregon companies with state permits or registrations and a second survey of 300 randomly-selected residents of the state. Both surveys explored the subjects’ knowledge, perceptions, and actions in response to a range of state assistance, monitoring, inspection, and enforcement activities.
- The researchers many findings include that compliance assistance, inspections, and enforcement create both specific and general deterrence. Regarding general deterrence, for example, during the three years prior to the survey, 38% of the companies made changes as a result of hearing about state inspections at other companies, 33% made changes resulting from hearing about technical assistance efforts at other companies, and 14% made changes resulting from hearing about penalties against other firms.
- The magnitude of the state’s general deterrent impacts are further described in the report. For example, for each two changes a company made because of direct technical assistance, one other company heard about the assistance and also made a change. For each change a company made because of direct inspection, other companies hearing about the inspection and made about one and a half changes. For each change a company made because of a direct penalty action, other companies heard about the penalty and made about three changes.
- The study also examined the relationship between company size, penalty amounts, and deterrence. Most companies were less concerned with the amount of their penalties than with other possible effects of enforcement, including forced shut-downs, environmental concern, criminal prosecution, and reputation. Small companies were much more likely to be concerned about penalty amounts. However, they were also much less likely to be aware of penalties against other companies and therefore would be less likely to be generally deterred by them.

Environmental Management Systems and Other Management Issues and Tools:

An Environmental Management System (EMS) is a continual improvement framework, based on the “plan-do-check-act” process, that organizations can use to address their full range of environmental impacts. These include managing regulatory compliance responsibilities, as well as improving overall environmental performance and stewardship in areas not subject to regulation. In its *Position Statement on EMSs*, <http://www.epa.gov/ems/position/position.htm>, EPA encourages the widespread use of EMSs across a range of organizations and settings with particular emphasis on adoption of EMSs to achieve improved environmental performance and compliance, pollution prevention through source reduction, and continual improvement. Does empirical research exist to support, contradict, or caveat the effectiveness of EMSs in promoting improved compliance and performance? If yes, what does it show? A person researching these issues will want to consult the *EMSs and Other Management Issues and Tools* section of the **Table of Results**. Upon doing so, he or she will find, among many other potentially useful information sources, the following three empirical analyses of EMS use:

(1) Andrews, R., et al.; *Environmental Management Systems: Do Formalized Management Systems Produce Superior Performance?*; EPA-NCER STAR Grant Final Report (2005). http://cfpub1.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/1951/report/F (See also other related studies, in the **Table of Results**, by the same author.) [Table of Results #154]

– The objective of this EPA-funded research project was to determine whether EMS implementation leads to improved environmental performance results and the organizational characteristics, motivations, and decision-making associated with EMS implementation. The researchers asked, among other things, how businesses that adopt EMSs for their own reasons differ from those who adopt them under government, corporate, or customer coercion. They also asked whether it is EMS adoption itself that is associated with any performance improvements, as opposed to other corporate actions. The data used to research the questions included a 2003 survey of 617 plant managers at U.S. manufacturing facilities in four industrial sectors plus data from EPA's Toxics Release Inventory (TRI) and Integrated Data for Enforcement Analysis (IDEA) database.

– The researchers report many interesting findings concerning EMSs, compliance, and performance. For example, facilities who adopted EMSs pursuant to external mandates were more likely to report environmental performance improvements than facilities lacking EMSs but most of these differences were determined to be modest in magnitude. The results showed no significant improvements for air and water pollution and material inputs to production, outcomes which are central concerns for environmental regulation but which might require more costly capital investments in changing products and production processes.

– Based on their findings, the researchers offer a range of policy suggestions. They advise that one should not expect to see significant changes in environmental performance simply because a facility adopts an EMS. Therefore, they recommend that any public policy promotion and rewards associated with EMS adoption should focus on the specific environmental performance objectives targeted as priorities for improvement and facilities' success in achieving them.

(2) United Kingdom Environment Agency; *remas Project Results*; Final Issue (2006). <http://remas.ewindows.eu.org/pdf/newsletters/12.pdf> [Table of Results #152]

– remas is a recently completed, 3-year project by the United Kingdom Environment Agency (UKEA) and others to examine whether EMSs implemented pursuant to the European Community Eco-Management and Audit Scheme (EMAS) and other established standards lead to improved environmental performance. The project compares data from sites with formal, informal, and no EMSs. The remas Final Report is expected shortly but the following project results are summarized in Final Issue of the project's newsletter.

– The remas researchers report that, based on the project data, there is good confidence that

putting a progressively more robust EMS in place will lead to better site environmental management. Their many findings include a reasonably strong link between better site environmental management and regulatory performance. This effect, however, differed in different European regions: in some regions, better site environmental management appeared to lead to more instances of permit conditions breaches and enforcement.

– The remas project results, together with the results of other EMS research cited in the **Table of Results**, raise interesting followup questions. For example, the remas researchers hypothesized, when managing compliance, introducing an EMS may simultaneously promote a general lowering of emissions and better reporting of noncompliance events. The combination of these two effects, they suggest, may be one reason why previous studies have found it difficult to link EMSs with improved compliance.

(3) Potoski, M. & Prakash, A; *Covenants with Weak Swords: ISO 14001 and Facilities' Environmental Performance*; Journal of Public Policy Analysis and Management, Vol. 24, No. 4, 745-769 (2005). <http://faculty.washington.edu/aseem/jppam.pdf>
[**Table of Results** #157]

– This project investigated whether the ISO 14001 EMS standard – characterized by the researchers as a “weak sword” because participation by firms is voluntary and monitoring and sanctioning mechanisms perceived to be weak – can mitigate facility “shirking” and improve participants’ environmental performance. The report’s authors’ use the term “shirking” to mean joining a program to receive membership benefits without fully implementing its obligations. This is similar to how other researchers employ the phrase “green-riding.”

– To address the issue, the researchers analyzed the performance of more than three thousand Clean Air Act (CAA) major sources. Approximately 90% of these facilities listed a manufacturing code as their primary Standard Industrial Classification (SIC) code.

– Among the researchers’ findings were that ISO 14001-certified facilities reduced their pollution emissions more than non-certified facilities. This result persisted even after controlling for facilities’ emission and regulatory compliance histories. Facilities’ compliance histories were, however, found to impact their ISO 14001 decisions. Facilities that were always in compliance or out of compliance were found to be the least likely to adopt ISO 14001. Facilities with moderate pollution emissions and compliance records were the most likely to do so. Facilities receiving more regulatory inspections were found to be significantly more likely to join ISO 14001 but other state-level policies appeared to have little influence on firms’ ISO 14001 decisions.

Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation:

Voluntary environmental programs, often termed “partnership” programs, are becoming increasingly common at the federal and state levels. According to EPA, such programs enable flexible, collaborative, market-driven solutions, involving volunteer businesses, communities, state and local governments, and other organizations, that can deliver measurable environmental results. <http://www.epa.gov/partners/> What research exists – theoretical and empirical – addressing specifically what types of persons and facilities are likely to participate in voluntary environmental programs? What are the researchers’ results and why? A person researching this issue will want to consult the *Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation* section of the **Table of Results**. Upon doing so, he or she will find, among many other potentially useful information sources, the following three analyses of voluntary programs and the characteristics and motivations of those who join them:

(1) Videras, J. & Alberini, A.; *The Appeal of Voluntary Environmental Programs: Which Firms Participate and Why?*; Contemporary Economic Policy, Vol. 18, No. 4, pp. 449-461 (Oct. 2000). <http://ideas.repec.org/a/oup/coecpo/v18y2000i4p449-61.html>
[**Table of Results** #100]

– According to these researchers, the literature on participation in voluntary environmental programs suggests that firms participate for four primary reasons: (1) to appeal to consumers interested in environmental protection; (2) to preempt government regulation; (3) to seek regulatory or compliance relief from the sponsoring agency by demonstrating improved environmental performance or an intent to improve; (4) to gain a competitive advantage. In this paper, the authors focus primarily on the relevance of factors (1) and (3) to 218 large manufacturing firms participating in EPA’s 33/50, Green Lights, and/or WasteWi\$e programs between 1993 and 1998.

– The researchers’ many findings include that publicity is likely to be a driver of participation. They interpreted information on managerial compensation to suggest that firms which scrutinize carefully their environmental performance are wary of programs with uncertain benefits. Fines for violation of the Resource Conservation and Recovery Act (RCRA) were found to increase the likelihood of participation in WasteWi\$e but no evidence was found of a correlation between CAA fines and the likelihood of joining Green Lights. Firms that incurred larger research and development expenditures in the previous year were relatively less attracted into the 33/50 program. This was deemed consistent with the possibility that firms less capable of innovating on their own might join voluntary programs in hopes of learning from others how to reduce emissions.

– The researchers also found that firms with worse environmental performance, as measured by selected compliance and performance proxy variables, were attracted to the 33/50 and WasteWi\$e programs when the programs were directly related to their regulatorily required pollution reductions. They characterized this finding as broadly consistent with the predictions of other researchers that a “stick-and-carrot” approach increases firm

responsiveness to voluntary programs.

(2) Coglianesi, C. & Nash, J.; *Beyond Compliance – Business Decision Making and US EPA’s Performance Track Program*; Harvard University JFK School of Government (2006). <http://www.ksg.harvard.edu/m-rcbg/rpp/CoglianesiNashNEPTReport.pdf>
[Table of Results #76]

– The authors of this report examine why businesses join voluntary programs, with a special focus on EPA’s National Environmental Performance Track (PT) . The PT program seeks to improve the environment by recognizing facilities that meet four key criteria: an EMS in place for at least one complete cycle; a record of compliance with environmental laws; continuous improvement, including a commitment to quantitative goals for improving their environmental performance; community outreach; and annual environmental performance reporting. In return, PT members receive various incentives such as recognition, regulatory incentives, and a low priority for routine federal inspections.

– The researchers found, among other things, that what distinguishes businesses that join programs such as PT from ones that do not is less their environmental performance relative to non-applicants as their internal organizational dynamics. Businesses that participate in PT are distinguished by a tendency to value and seek external recognition. All things being equal, facilities with more employees, greater management support, that expect new regulations to affect them in the future, and that more often seek out the opinions of outside community and environmental groups are more likely to join PT.

– The researchers also identified a tension between EPA’s ability to offer significant and meaningful rewards to PT members versus the Agency’s ability to set low-cost, attractive entry and programmatic requirements. The researchers characterized this tension as a potential natural constraint on the numbers of facilities that will seek to join programs like PT. The researchers’ other conclusions include that while PT does not generate information to allow for a determination that its members are top performers, PT facilities are willing to engage regulators and assume the costs of membership to be recognized as good citizens.

(3) Rivera, J. & de Leon, P.; *Is Greener Whiter? Voluntary Environmental Performance of Western Ski Areas*; Policy Studies Journal, Vol. 32, No. 3, 417-437 (2004). <http://home.gwu.edu/~jrivera/IsGrennerWhiter,PSJ,Publication,August2004.pdf>
[Table of Results #91]

– In this paper, the authors analyze implementation of the Sustainable Slopes Program, a western U.S. voluntary environmental initiative established by the U.S. National Ski Areas Association in partnership with EPA and other federal agencies. They seek to identify factors and characteristics influencing firms’ decisions to participate in the program and determine whether participation actually yielded better environmental performance. The sample size for the study was one hundred and nine western ski resorts representing about two thirds of all such resorts. Fifty-seven of the resorts had available 3rd party

environmental performance data. The other fifty-two were randomly drawn from the remaining population of resorts. Environmental Scorecard Grades produced by the Ski Areas Citizen Coalition (SACC) were used as a measure of beyond-compliance performance.

– Many ski areas operate on land leased from the federal government. Using location in federal, private, or a mix of federal and private lands as a proxy for the extent of federal government oversight, the researchers found, among other things, that high and medium levels of federal government oversight has a positive and statistically significant association with participation in the Sustainable Slopes program but not with higher environmental performance. Higher state environmental pressures, in contrast, were significantly associated with both a higher probability of participation in the program and higher performance. In addition, the results indicated that, other factors being equal, a higher probability of participation in the Sustainable Slopes Program appeared to be related in a statistically significant fashion with lower environmental performance.

– Describing their findings as consistent with previous research on environmental voluntarism by manufacturing firms, the researchers interpreted them as, among other things, highlighting the importance of coercive institutional regulatory pressures as a key factor positively associated with participation in voluntary environmental programs. They pointed to the importance of including, in the design of such programs, specific institutional mechanisms for preventing free-riding behavior such as environmental performance standards, independent monitoring of participants, and sanctions for poorly performing facilities. The researchers hypothesized that the unexpected absence of a statistically significant relationship between federal government oversight and higher environmental performance can be explained by the U.S. Forest Service’s conflicting mandates to simultaneously promote ski area development, preserve forest lands, and follow pertinent environmental regulations.

– In 2006, the authors published a follow-up study that evaluates the Sustainable Slopes Program between 2001 and 2005. This study assesses the Program’s environmental effectiveness from 2001-2005. No evidence was found that ski areas adopting the Program outperformed non-participants in four of five environmental performance metrics. Rivera, J., de Leon, P. and Koerber, C.; *Is Greener Whiter Yet? The Sustainable Slopes Program After Five Years*; Policy Studies Journal, Vol. 34, No. 2, 195-224 (2006).

<http://home.gwu.edu/~jrivera/IsGreenerWhiterYet,PSJfinal,May2006.pdf>

[Table of Results #82]

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Compliance Literature (1999-2007) – Table of Results

– NOTES –

- This table is an evolving document. It will be updated as new compliance research results become available.
- Studies are listed topically under their primary topics of focus (many studies address multiple topics).
- Within topics, studies are listed from newest to oldest.
- Studies published the same year are listed alphabetically within that year.
- Please read the NOTICE AND DISCLAIMER in the inside front cover before using the information in the table.
- Please forward information on new or additional studies to the EPA Compliance Literature Search Project Manager, Jon Silberman, USEPA Office of Enforcement and Compliance Assurance, at silberman.jon@epa.gov.

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Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|---|------|-------------------|---|---|
| 1 | 2007 | Gray & Shadbegian | The Environmental Performance of Polluting Plants: A Spatial Analysis | Related to 2005 Gray & Shadbegian study summarized below (#13). Paper combines EPA and Census data to test for spatial components of plant-level compliance and performance. More inspections at a plant, nearby plants, and other plants in same state are associated with greater compliance. Results suggest general deterrent effects may be as important as specific deterrence. |
| <p>Gray, W. & Shadbegian, R; <i>The Environmental Performance of Polluting Plants: A Spatial Analysis</i>; Journal of Regional Science; Vol. 47, Iss. 1, pp. 63-84 (Feb. 2007). http://www.blackwellpublishing.com/journal.asp?ref=0022-4146</p> | | | | |
| 2 | 2006 | Andrews & Axtell | Agent-Based Modeling of Industrial Ecosystems | USEPA Office of Research and Development (ORD) Science to Achieve Results (STAR) Grant research Final Report. Case studies of actual enterprises plus development and consideration of firm simulation model. Results suggest command-and-control regulation can be more efficient than market-based solutions when principal-agent problems are taken into account. |
| <p>Andrews, C. & Axtell, R.; Final Report: Agent-Based Modeling of Industrial Ecosystems (received and posted by EPA ORD in 2006). http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/5433/report/F See also Axtell, et al., Agent-Based Modeling and Industrial Ecology; Journal of Industrial Ecology Vol. 5(4), pp. 10-13 (2001).</p> | | | | |
| 3 | 2006 | Howard-Grenville | Inside the 'Black Box': How Organizational Culture Informs Attention and Action on Environmental Issues | Drawing from a 9-month ethnographic study of a high-tech manufacturer, the author finds that the existence of multiple subcultures gives rise to divergent interpretations and strategies for action on environmental protection issues. |
| <p>Howard-Grenville, J.; <i>Inside the 'Black Box': How Organizational Culture Informs Attention and Action on Environmental Issues</i>; Organization & Environment 19, 46-73 (March 2006). http://oae.sagepub.com/cgi/content/abstract/19/1/46</p> | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|---|------|--------------------------|---|---|
| 4 | 2006 | Earnhart, et al. | Shaping Corporate Environmental Behavior and Performance: The Impact of Enforcement and Non-Enforcement Tools | ORD STAR Grant Final Report. Researchers explore the effects of government interventions – inspections, federal fines, federal injunctive relief, federal supplemental environmental projects (SEPs), and state fines – on firm environmental behavior and performance. Emphasis is on Clean Water Act (CWA) biological oxygen demand (BOD) & total suspended solids (TSS) violations and discharges. |
| <p>Earnhart, D., et al.; <i>Final Report: Shaping Corporate Environmental Behavior and Performance: The Impact of Enforcement and Non-Enforcement Tools</i> (received and posted by EPA ORD in 2006). http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/1026/report/F</p> | | | | |
| 5 | 2006 | Keohane, Mansur & Voynov | Averting Enforcement: Strategic Response to the Threat of Environmental Regulation | Study of U.S. electric power industry plants to Clean Air Act (CAA) New Source Review (NSR) enforcement. Threat of enforcement had a significant effect on emissions. Plants likely to be named in lawsuits reduced emissions by 17% on the eve of the lawsuits. After the suits were filed, authors found no significant differences between sued plants' and other coal-fired power plants emissions. |
| <p>Keohane, Mansur & Voynov; <i>Averting Enforcement: Strategic Response to the Threat of Environmental Regulation</i>; Working Paper (2006). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=935083</p> | | | | |
| 6 | 2006 | Morita (INECE) | A Review of Empirical Studies on Environmental Compliance | In recent years, researchers have begun moving beyond case studies to dataset analyses but these studies remain sparse and the use of self-reported data raises accuracy issues. |
| <p>Morita, S. and Zaelke, D; <i>A Review of Empirical Studies on Environmental Compliance</i>; Seventh International Conference on Environmental Compliance and Enforcement; INECE Conference Paper at 113-119 (April 2005). http://www.inece.org/conference/7/vol1/19_Morita_Zaelke.pdf</p> | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|---|------|------------------|--|--|
| 7 | 2006 | Rassier | Do Trade Unions Affect Compliance With Environmental Regulation? | Author uses plant-level panel data from EPA's Permit Compliance System (PCS) database to evaluate whether trade unions affect CWA discharges and compliance in the chemical manufacturing industries. Results indicate that unionized plants and plants with relatively strong unions discharge more pollution relative to permitted limits than non-unionized plants and plants with relatively weak unions but provide only weak evidence that plants with relatively strong unions incur relatively more compliance violations. |
| <p>Rassier, D. G; <i>Do Trade Unions Affect Compliance with Environmental Regulation?</i>; Bureau of Economic Analysis Working Paper (Feb. 11, 2006). http://ssrn.com/abstract=889400</p> | | | | |
| 8 | 2006 | Shimshack & Ward | Enforcement & Over-Compliance (draft/unpublished Jan. 2006) | Companion article to 2005 study summarized below (#23). This article describes finding significant positive enforcement impacts on beyond-compliance performance. Results demonstrate, among other things, reduced CWA BOD/TSS discharge levels for all facilities, compliant and noncompliant, in response to penalty actions against other mills in same state for BOD/TSS discharge violations. |
| <p>Shimshack, J. & Ward, M.; <i>Enforcement & Over-Compliance</i> (working paper/Jan. 2006). http://www.tufts.edu/~jshims01/Enforcement_and_Overcompliance.pdf</p> | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|--|------|-------------------|---|--|
| 9 | 2006 | Stafford | Rational or Confused Polluters? Evidence from Hazardous Waste Compliance | Paper examines the role of rationality and complexity in compliance and finds empirical evidence to support that both are necessary to explain hazardous waste compliance behavior. Factors which increase the cost of compliance increase the likelihood of a violation; factors that increase the likelihood of inspections and detection decrease the probability of a violation; facilities subject to more complex regulations are more likely to violate but learn from past inspections. |
| Stafford, S. L.; <i>Rational or Confused Polluters? Evidence from Hazardous Waste Compliance</i> ; Contributions to Economic Analysis & Policy: Vol. 5 : Iss. 1, Art. 21 (2006). http://www.bepress.com/bejeap/contributions/vol5/iss1/art21/ | | | | |
| 10 | 2005 | Decker, C. & Pope | Adherence to Environmental Law: The Strategic Complementarities of Compliance Decisions | Authors address why firms comply with environmental regulations even when enforcement is weak. Theoretical model shows increased compliance by one firm will positively influence the compliance rate of a rival. Empirical analysis finds compliance rates of other entities have a positive and significant effect on a source's compliance behavior in 3 of 4 heavily regulated industries. If compliance decisions are strategic complements, this may partially explain high compliance rates in the presence of limited regulatory pressure. |
| Decker, C. & Pope, C.; <i>Adherence to Environmental Law: The Strategic Complementarities of Compliance Decisions</i> ; The Quarterly Rev. of Eco. and Finance, Volume 45, Issues 4-5 at 641-661 (Sept. 2005). http://www.sciencedirect.com/science/article/B6W5X-4FFGK12-1/2/1da468a771cf33c5f0d043e65439a98f | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|--|------|-------------------|--|--|
| 11 | 2005 | Delmas & Toffel | Institutional Pressure and Environmental Management | Funded by an EPA STAR Grant. Authors integrate organizational characteristics and institutional theory to understand differences between firms' environmental strategies. More than 500 original survey responses are combined with existing data sources to demonstrate how different corporate departments respond to institutional pressures to adopt management practices. |
| <p>Delmas, M. & Toffel, M.; <i>Institutional Pressure and Environmental Management</i>; Univ. of Cal., Santa Barbara (2005). http://www2.bren.ucsb.edu/~delmas/webpage/Papers/Delmas-Toffel-WP.pdf</p> | | | | |
| 12 | 2005 | EPA-FFEO | The State of Federal Facilities – An Overview of Environmental Compliance at Federal Facilities – FY 2003-2004 | Report presents information on compliance by federal government agencies, in 2003 and 2004, with federal environmental laws. It also presents compliance information back to 1993 so trends can be observed. It does not analyze the underlying causes of noncompliance. |
| <p>EPA-FFEO; <i>The State of Federal Facilities – An Overview of Environmental Compliance at Federal Facilities – FY 2003-2004</i>; EPA 300-R-05-004 (2005). http://www.epa.gov/compliance/resources/reports/accomplishments/federal/soff-0304.pdf</p> | | | | |
| 13 | 2005 | Gray & Shadbegian | Determinants of Environmental Compliance: Plant, Firm, and Enforcement Factors | EPA Star Grant Final Report. Spatial issues play a role in environmental performance. Plants located near each other tend to have similar compliance behavior. Inspections at one plant seem to improve compliance at nearby plants though this effect does not carry across state borders. |
| <p>Gray, W. & Shadbegian, R.; <i>EPA Star Grant Final Report: Determinants of Environmental Compliance: Plant, Firm, and Enforcement Factors</i> (August 1, 2005). http://cfpub1.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/811/report/F</p> | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|--|------|------------------------------|---|---|
| 14 | 2005 | Gray & Shadbegian | When and Why do Plants Comply? Paper Mills in the 1980s | Paper uses census data for 116 pulp mills from 1979-1990 to examine determinants of compliance with air pollution regulations. Large plants, old plants, and pulp mills comply less frequently, as do plants with CWA or Occupational Safety and Health Administration (OSHA) violations. Enforcement increases compliance in a heterogeneous way: pulp mills are less sensitive to inspections; plants owned by larger firms are less sensitive to inspections and more sensitive to other enforcement actions. |
| <p>Gray, W. & Shadbegian, R; <i>When and Why do Plants Comply? Paper Mills in the 1980s</i>; Law & Policy, Vol. 27, No. 2, 238-261 (April 2005). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=684339</p> | | | | |
| 15 | 2005 | Gunningham, Thornton & Kagan | Motivating Management: Corporate Compliance in Environmental Protection | Based on interviews of facility managers in electroplating and chemical firms, authors find that implicit general deterrence (the overall effect of sustained inspection and enforcement activity) was more salient to respondents than either specific deterrence or explicit general deterrence. Deterrence in any form was of greater concern to small and medium sized enterprises than to large ones. Inspections had less impact than enforcement. Two related studies are summarized below (## 19 and 20). |
| <p>Gunningham, N., Thornton, D. & Kagan, R.; <i>Motivating Management: Corporate Compliance in Environmental Protection</i>; Law & Policy, Vol. 27, No. 2, pp. 289-316 (April 2005). http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1038&context=csls</p> | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|---|------|---|---|---|
| 16 | 2005 | Hall (INECE) | Overview of Research Methodologies for Environmental Compliance and Enforcement | Paper surveys a range of research methodologies for evaluating compliance and enforcement, including case studies, process tracking, counterfactuals, qualitative comparative analysis, quantitative statistics, meta-analysis, and legal research methodologies. |
| Hall, D.; <i>Overview of Research Methodologies for Environmental Compliance and Enforcement</i> ; INECE (2005). http://www.inece.org/ucsb/MemoMethodologies_final.pdf | | | | |
| 17 | 2005 | Howard-Grenville | Explaining Shades of Green: Why Do Companies Act Differently on Similar Environmental Issues? | Reviews <i>Shades of Green</i> (2003), summarized below (#30), an analysis of why some firms, and not others, within the same industry (pulp and paper), excel in environmental performance. Author addresses <i>Shades of Green's</i> findings, related literature, and resulting policy implications from an organizational behavior perspective. |
| Howard-Grenville, J.; <i>Explaining Shades of Green: Why Do Companies Act Differently on Similar Environmental Issues?</i> ; Law and Social Inquiry, Vol. 30, 551–582 (2005). http://www.journals.uchicago.edu/cgi-bin/resolve?id=doi:10.1086/497714&erFrom=7349354118691716299Guest | | | | |
| 18 | 2005 | INECE (edited by Zaelke, Kaniaru & Kruzikova) | Making Law Work – Environmental Compliance and Sustainable Development | Two volume, broad-in-scope compilation of the best available literature on topics related to environmental compliance, enforcement, and sustainable development. Papers selected by INECE, in cooperation with the Institute for Governance and Sustainable Development and affiliated Program on Governance for Sustainable Development at the University of California - Santa Barbara. |
| INECE (edited by Zaelke, Kaniaru & Kruzikova); <i>Making Law Work – Environmental Compliance and Sustainable Development</i> ; Cameron May (2005). http://www.inece.org/makinglawwork.html | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|--|------|-------------------------------|---|---|
| 19 | 2005 | Kagan, Gunningham & Thornton | Tracking Deterrent Messages in Environmental Enforcement | This paper is the Final Report concluding the authors' STAR Grant research for USEPA's ORD. Related studies: #15, above; #20, immediately below. |
| <p>Kagan, R., Gunningham, N. & Thornton, D.; <i>Tracking Deterrent Messages in Environmental Enforcement</i>; Final Report available from EPA's ORD. Additional project information available at: http://yosemite.epa.gov/EE/epa/funding.nsf/ecdcf15d986219bb852564c6007c157f/132c2c9b105fbf2d85256df7004e9cbe!OpenDocument.</p> | | | | |
| 20 | 2005 | Thornton, Gunningham, & Kagan | General Deterrence and Corporate Environmental Behavior | Paper is based on survey results from 233 firms in several industries. Study tracked respondents knowledge of, and reactions to, "signal" enforcement cases. Many interesting findings, for example, for most firms, general deterrence is implicit and serves primarily reminder and reassurance functions. |
| <p>Thornton, D., Gunningham, N. & Kagan, R.; <i>General Deterrence and Corporate Environmental Behavior</i>; Law and Policy; Vol. 25 (2): pp.262-288 (April 2005). http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1083&context=igs</p> | | | | |
| 21 | 2005 | May | Regulation and Compliance Motivations: Examining Different Approaches | Research examines how traditional regulatory and voluntary approaches affect motivations to address potential harms to water quality. Survey of 144 marinas and 61 boatyards. Research finds that regulation is more effective than voluntary approaches alone. Deterrent fears and the sense of duty to comply are important motivations for action. Peer reputation and attitudes toward government and civic obligations are shown to be important considerations. |
| <p>May, P. J.; <i>Regulation and Compliance Motivations: Examining Different Approaches</i>; Public Administration Review 65 (1) (Jan-Feb 2005). http://www.blackwell-synergy.com/doi/abs/10.1111/j.1540-6210.2005.00428.x</p> | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|--|------|------------------|--|---|
| 22 | 2005 | Miller | What Makes Companies Behave? An Analysis of Criminal and Civil Penalties Under Environmental Law | Empirical use of data on all EPA regulatory actions from 1970-1997 employing a nonparametric approach to estimate recidivism probabilities and relative impacts of civil and criminal enforcement. Analysis suggests that at current fine levels, civil lawsuits are not more effective at reducing repeat offenses (recidivism) than administrative actions which carry much lower fines. In contrast, criminal lawsuits significantly reduce recidivism. |
| Miller, A. B.; <i>What Makes Companies Behave? An Analysis of Criminal and Civil Penalties Under Environmental Law</i> (Working Paper; Dec. 2005). http://ssrn.com/abstract=471841 | | | | |
| 23 | 2005 | Shimshack & Ward | Regulator Reputation, Enforcement, and Environmental Compliance | Empirical analysis of compliance of 217 major pulp and paper mills from 1988-1996. Results show a strong general deterrent impact from penalty actions on the order of a 64% reduction in the statewide violation rate in year one from a new (marginal) fine and a 30% reduction in year two. |
| Shimshack, J. P. & Ward, W. B.; <i>Regulator Reputation, Enforcement, and Environmental Compliance</i> ; Journal of Env. Economics and Management. Vol. 50: pp. 519-540 (2005). http://www.tufts.edu/~jshims01/Regulator_Reputation.pdf | | | | |
| 24 | 2004 | Dietrich | Regulatory Factors Shaping Environmental Performance at POTWs | Paper examines wastewater discharges by Kansas Publicly-Owned Treatment Works (POTWs) from 1990-1998. Findings include discussion of the relative deterrent impact of federal and state threats of – and actual – inspections and enforcement, controlling for differences in the issuance of pollution control permits that impose effluent limits on individual facilities. Federal and state enforcement were found to significantly improve performance but inspections were not. |
| Dietrich, E.; <i>Regulatory Factors Shaping Environmental Performance at Publicly-Owned Treatment Plants</i> ; Journal of Env. Economics and Management. Vol 48: P.655-681 (2004). http://econpapers.repec.org/article/eeejeeman/v_3A48_3Ay_3A2004_3Ai_3A1_3Ap_3A655-681.htm | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|---|------|-------------------------------|---|---|
| 25 | 2004 | Gunningham, Kagan, & Thornton | Social License and Environmental Protection: Why Businesses Go Green | Related to <i>Shades of Green</i> (2003), summarized below. Article examines the concept of the corporate “social license,” empirically, in the pulp and paper sector. Researchers find that corporate environmental behavior cannot be explained purely in terms of threats and moral obligations. Rather, beyond-compliance behavior is better explained as an interplay of societal pressures and economic constraints. |
| Gunningham, N.; Kagan, R.; & Thornton, D.; <i>Social License and Environmental Protection: Why Businesses Go Green</i> ; American Bar Association (ABA) (2004). Obtain copies from ABA or authors. | | | | |
| 26 | 2004 | Haider-Markel | Does Proximity Matter? A Preliminary Assessment of the Impact of State Versus National Regulatory Interventions on Facility Environmental Performance | EPA ORD Star Grant-funded research. Survey of 499 major and 2,097 minor chemical facility managers’ perceptions of the efficacy of federal and state inspections and enforcement, including whether civil or administrative. Results suggest respondents’ perceptions and performance are shaped by facility characteristics and commitment to environmental protection but performance is also influenced by enforcement and community pressure. |
| Haider-Markel, D. P.; <i>Does Proximity Matter? A Preliminary Assessment of the Impact of State Versus National Regulatory Interventions on Facility Environmental Performance</i> ; prepared for Fourth Annual Conference on State Politics and Policy (April 2004). www.fsu.edu/~statepol/conferences/2004/Papers/Haider-Markel.doc | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|---|------|--------|--|--|
| 27 | 2004 | Nadeau | Estimating the Environmental Quality Improvements Associated With Enforcement Activity | Author analyzes the relationship between enforcement actions at petroleum refineries between 1995 and 1998 and ambient concentrations of TSS in associated rivers and streams. Enforcement activity is associated with a 3.3% cumulative reduction in TSS concentrations compared to a mid-1990's baseline and is able to achieve, on average, 29.6% of a hypothetical maximum achievable reduction in ambient concentrations. |
| Nadeau, L.; <i>Estimating the Environmental Quality Improvements Associated With Enforcement Activity</i> ; Eastern Research Group, Inc. (2004). [unpublished/available from author or USEPA] | | | | |
| 28 | 2004 | OR DEQ | General Deterrence of Environmental Violations: A Peek Into the Mind of the Regulated Public | Survey of 450 Oregon firms and 300 residents. Findings include that assistance and enforcement creates measurable general deterrence, inspections and enforcement also create specific deterrence, and small companies are less likely to be environmentally proactive. |
| State of Oregon Department of Environmental Quality; <i>General Deterrence of Environmental Violation: A Peek into the Mind of the Regulated Public</i> (OR DEQ 2004). http://www.deq.state.or.us/programs/enforcement/DeterrenceReport.pdf | | | | |
| 29 | 2003 | Grant | Organizational Structures, Citizen Participation, and Corporate Environmental Performance | STAR Grant Final Report. Ownership status of a plant conditions its performance. For example, average amount of toxins released by absentee-owned facilities or those with out-of-state headquarters (1.2 million toxic pounds) is nearly 3X more than plants with in-state headquarters (407,000 toxic pounds), and 15X more than single location enterprises (80,000 toxic pounds). Plants that are subsidiaries have significantly higher emission rates. |
| Grant, D.; <i>Organizational Structures, Citizen Participation, and Corporate Environmental Performance</i> ; STAR Grant Final Report (2003). http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/810/report/F | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|---|------|-------------------------------|--|--|
| 30 | 2003 | Gunningham, Kagan, & Thornton | Shades of Green: Business, Regulation, and Environment | In-depth empirical study of fourteen pulp mills in the United States, Canada, Australia, and New Zealand. Tightening regulatory standards have been crucial for raising environmental performance but some firms improved more than others. Book explains the causes of the variation in compliance and performance. |
| Gunningham, N., Kagan, R. & Thornton, D.; <i>Shades of Green: Business, Regulation, and Environment</i> ; Stanford University Press (2003). http://www.sup.org/book.cgi?book_id=4806%204852 | | | | |
| 31 | 2003 | Kagan, Gunningham, & Thornton | Explaining Corporate Environmental Performance: How Does Regulation Matter? | Related to <i>Shades of Green</i> , summarized immediately above. Empirical study of fourteen pulp and paper mills in 4 countries, including the United States. Article discusses factors affecting firm-level performance differences. Large improvements are linked to tightening regulatory requirements and political pressures which serve as coordinating mechanisms for culture and behavior. |
| Kagan, R., Gunningham, N., & Thornton, D.; <i>Explaining Corporate Environmental Performance: How Does Regulation Matter?</i> ; Law & Society Review, Vol. 37, No. , pp. 51-90 (2003) http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1084&context=igs | | | | |
| 32 | 2003 | Stafford | Assessing the Effectiveness of State Regulation and Enforcement of Hazardous Waste | Using data on 8000 U.S. facilities, author assesses the effectiveness of state hazardous waste regulations and policies in promoting compliance. Adoption of voluntary pollution prevention (P2) programs appears to decrease violations. Findings include that strict liability, allocating a higher % of employees to regional offices, and increased spending on waste programs appear to decrease Class 1 violations (though it is positively correlated with the overall probability of violation). |
| Stafford, S. L.; <i>Assessing the Effectiveness of State Regulation and Enforcement of Hazardous Waste</i> ; Journal of Regulatory Economics, Vol. 23, No. 1 (Jan. 2003). http://www.springerlink.com/content/w304416712070338/ | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|---|------|----------|--|--|
| 33 | 2002 | Horowitz | Over-Compliance in Point Source Water Pollution | ORD STAR Grant Final Report. Analysis of discharges of conventional water pollutants from CWA major facilities, including low levels of discharges relative to National Pollution Discharge Elimination System (NPDES) permit limits (overcompliance). Factors considered include the impact of discharge variability/uncontrollability on discharge levels and the relationship between discharges, violations, and downstream community characteristics. |
| <p>Horowitz, J.; Over-compliance in Point Source Water Pollution; STAR Grant Final Report (2002). http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/213/report/F</p> | | | | |
| 34 | 2002 | Malloy | Regulating by Incentives: Myths, Models and Micro-Markets | Author argues that the “black box” model widely used to predict firm responses to environmental regulation incentives is ill-suited for the task and proposes an alternative “resource allocation” model. Responses to regulatory incentives — obligation or opportunity — are understood as decisions on how to allocate limited firm resources. |
| <p>Malloy, T.; <i>Regulating by Incentives: Myths, Models and Micro-Markets</i>; 80 Texas Law Rev. 531-5605 (2002). http://www.utexas.edu/law/journals/tlr/abstracts/Volume%2080/Malloy.htm</p> | | | | |
| 35 | 2002 | Stafford | The Effect of Punishment on Firm Compliance With Hazardous Waste Regulations | Empirical analysis of compliance and penalty impacts on 8,411 facilities managing hazardous waste consistently from 1986-1995. Findings include that violations decreased following EPA’s adoption of 1990 Resource Conservation and Recovery Act (RCRA) Civil Penalty Policy but that the decrease was small relative to the increases in penalties. |
| <p>Stafford, S. L.; <i>The Effect of Punishment on Firm Compliance with Hazardous Waste Regulation</i>; Journal of Env. Economics and Management., Vol. 44: 290-308 (2002). http://www.ingentaconnect.com/content/ap/ee/2002/00000044/00000002/art01204</p> | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|--|------|------------------|--|---|
| 36 | 2000 | Cohen | Empirical Research on the Deterrent Effect of Environmental Monitoring and Enforcement | Literature review. Includes literature finding that monitoring and enforcement deters violations and improves performance. |
| Cohen, M. A.; <i>Empirical Research on the Deterrent Effect of Environmental Monitoring and Enforcement</i> ; 30 Env. Law Reporter at 10245-10252 (2000). http://www.vanderbilt.edu/vcems/papers/empirical.pdf | | | | |
| 37 | 2000 | Laplante, et al. | Incentives for Pollution Control: Regulation and Public Disclosure | Empirical study of Canadian program combining traditional enforcement and public disclosure finds some evidence that disclosure had a greater impact on emission levels and compliance than penalties. Adopting stricter standards and higher penalties, however, also significantly affected emissions because strong, clear standards, together with a significant, credible penalty system, sends appropriate signals to the regulated community which responds by lowering pollution emissions. |
| Laplante, B., Lanoie, P. & Foulon, J.; <i>Incentives for Pollution Control - Regulation and Public Disclosure</i> ; No 2291, Policy Research Working Paper Series, The World Bank (2000). http://ideas.repec.org/p/wbk/wbrwps/2291.html | | | | |
| 38 | 2000 | Silberman | Does Environmental Deterrence Work? Evidence and Experience Say Yes, But We Need to Understand How and Why | Comprehensive introduction to deterrence theory. Author reviews available theoretical and empirical data on deterrence and describes ongoing and planned research to measure deterrent impacts. Reprinted in Making Law Work, Vol. 1 (INECE 2005) (summarized above, #18). |
| Silberman, J D.; <i>Does Environmental Deterrence Work? Evidence and Experience Say Yes, But We Need to Understand How and Why</i> ; 30 Env. Law Inst. 10523-36 (July 2000). http://www.temple.edu/iilpp/EnvironmentalRoundtableResearchDocs/Silberman%20-%20Does%20Envtl%20Deterrence.pdf ; Abridged version reprinted in <i>Making Law Work</i> (INECE 2005) [see http://www.inece.org/mlw/Chapter4_DomesticEnforcementStrategies.pdf]. | | | | |

Topic: Empirical and Modeling Studies of Compliance, Deterrence, and Performance (Including Literature Reviews)

| # | Year | Author | Title | Summary |
|--|------|------------|---|--|
| 39 | 1999 | EPA - OPPA | Compliance Information Project Literature Summaries | Predecessor report to EPA's 2007 Compliance Literature Search Results report in which this table appears. Report presents the results of a 1999, broad-based compliance literature search. Included table cites 132 responsive articles, 17 premier examples of which are summarized in additional detail. |
| <p>EPA Office of Planning and Policy Analysis; <i>Compliance Information Project Literature Summaries</i>, EPA-300-R-99-002 (April 1999). http://www.epa.gov/compliance/resources/publications/compliance/research/index.html</p> | | | | |

Topic: Studies of Inspection and Assistance Targeting, Frequency, or Effectiveness

| # | Year | Author | Title | Summary |
|---|------|---------------------------------|---|---|
| 40 | 2006 | Cason & Gangadhar | An Experimental Study of Compliance and Leverage in Auditing and Regulatory Enforcement | Individuals often comply with regulations even though inspection frequency is low. Authors conduct a laboratory experiment based on the Harrington dynamic model in which, based on their compliance behavior, participants move between two inspection groups that differ in the probability of inspection and severity of fine. Researchers find and explain why compliance behavior does not change as sharply as the Harrington model predicts. |
| Cason, T. & Gangadharan, L.; <i>An Experimental Study of Compliance and Leverage in Auditing and Regulatory Enforcement</i> ; Eco. Inquiry 44:(2), 352-366 (2006). http://ideas.repec.org/a/oup/ecinqu/v44y2006i2p352-366.html | | | | |
| 41 | 2006 | MA Exec. Office of Env. Affairs | The Effect of Providing On-site Technical Assistance for Toxics Use Reduction | Evaluation of the pollution prevention outcomes of on-site technical assistance provided by Massachusetts (MA) in the context of the MA Toxic Use Reduction Act (TURA) program. Visited companies reduced their toxics use an average of 9.4% after being visited and visited companies had greater reductions than those not visited. |
| MA Exec. Office of Env. Affairs; <i>The Effect of Providing On-site Technical Assistance for Toxics Use Reduction</i> (July 2006). Executive Summary: http://www.mass.gov/envir/ota/publications/pdf/effectiveness_study_executive_summary.pdf | | | | |

Topic: Studies of Inspection and Assistance Targeting, Frequency, or Effectiveness

| # | Year | Author | Title | Summary |
|--|------|--------|---|--|
| 42 | 2006 | NJ DEP | Compliance & Enforcement Target and Measure Initiative Final Project Report | Report explores using compliance rate data to drive inspection and targeting decisions. Limited evidence was found to support these uses. The report presents calculated compliance rates for various media and sectors and discusses compliance rate issues and limitations. An example of the successful use of compliance rates combined with geographic data was the State's evaluation of municipalities for an environmental justice initiative. |
| <p>New Jersey Department of Environmental Protection (NJDEP); <i>Compliance & Enforcement Target and Measure Initiative Final Project Report</i> (Oct. 2006). [available from NJDEP-Bureau of Enforcement and Compliance Services (609-984-9482)] See also NJDEP Compliance Rate Outcomes charts: http://datamine.state.nj.us/dep/DEP_OPRA/EnfSummaries.htm#EnfRatesOutcomes.</p> | | | | |
| 43 | 2005 | Decker | Do Regulators Respond to Voluntary Pollution Control Efforts? A Count Data Analysis | Author addresses whether regulators are responsive to voluntary environmental behavior. In two of four frequently inspected manufacturing industries, states undertake fewer inspections at plants reporting lower per unit output Toxics Release Inventory (TRI) releases. Regulated pollutant releases and compliance history also influence inspection activity. In the pulp and paper industry, plants accounting for a larger employment share are inspected less frequently. |
| <p>Decker, C. S.; <i>Do Regulators Respond to Voluntary Pollution Control Efforts? A Count Data Analysis</i>; Contemporary Eco. Policy 23.2: 180(15) (April 2005). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=904737</p> | | | | |

Topic: Studies of Inspection and Assistance Targeting, Frequency, or Effectiveness

| # | Year | Author | Title | Summary |
|--|------|-------------------------|---|--|
| 44 | 2005 | Benbear | Strategic Response to Regulatory Thresholds: Evidence from the MA Toxic Use Reduction Act | Author finds that up to 40% of the observed decline in reported toxic releases in MA may be attributed to firms' strategic responses to the reporting thresholds. [Note that the 2006 TURA analysis summarized above (#41) applies to firms receiving site visits, only, and addresses the potential for a threshold effect.] |
| Benbear, L. S.; <i>Strategic Response to Regulatory Thresholds: Evidence from the MA Toxic Use Reduction Act</i> ; Social Science Research Network (2005). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=776504 | | | | |
| 45 | 2004 | Clark, Friesen & Muller | The Good, the Bad, and the Regulator: An Experimental Test of Two Conditional Audit Schemes | Laboratory experiment of conditional audit rules designed to achieve regulatory compliance with fewer inspections -versus- random auditing of audit pools that differ in inspection probability with transition rules between them. The results showed that optimal targeting generates the lowest inspection rates as predicted but random auditing yields the highest compliance. Past-compliance targeting yields intermediate results. |
| Clark, J., Friesen, L. & Muller, A.; <i>The Good, the Bad, and the Regulator: An Experimental Test of Two Conditional Audit Schemes</i> ; <i>Economic Inquiry</i> (42)1, pp. 69-88 (Jan. 2004). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=906207 | | | | |
| 46 | 2003 | May & Wood | At the Regulatory Front Lines: Inspectors' Enforcement Styles and Regulatory Compliance | Article explores impact of inspector style – “formal” versus “facilitative” – on compliance with building codes. Authors fail to find a direct effect of differing enforcement styles on compliance but such styles influence homebuilders' knowledge of rules and homebuilder-inspector cooperation. Inspector inconsistencies suggest a downside to "responsive regulation" as a preferred mode of regulatory enforcement. |
| May, P. & Wood, R.; <i>At the Regulatory Front Lines: Inspectors' Enforcement Styles and Regulatory Compliance</i> ; <i>Journal of Public Administration Research and Theory</i> , Vol. 13, No. 2, 117-139 (2003). http://jpart.oxfordjournals.org/cgi/content/abstract/13/2/117 | | | | |

Topic: Studies of Inspection and Assistance Targeting, Frequency, or Effectiveness

| # | Year | Author | Title | Summary |
|---|------|----------------------------|--|---|
| 47 | 2001 | Kunreuther, McNulty & Kang | Improving Environmental Safety Through Third Party Inspection | Paper makes the case for relying on decentralized market-based incentive mechanisms to supplement performance-based regulations for promoting industrial safety. In particular, it examines how third party inspections coupled with insurance protection can encourage firms to reduce their risks from accidents and disasters. |
| Kunreuther, H., McNulty, P. & Kang, Y.; <i>Improving Environmental Safety Through Third Party Inspection</i> ; Wharton School - U. of Penn. (Oct. 2001) [see also: Risk Analysis 22(2), pp. 309-318 (2002)] http://grace.wharton.upenn.edu/risk/downloads/01-05-HK.pdf | | | | |
| 48 | 2000 | EPA - OPPA | Views from The Field: Inspector Perspectives on Environmental Compliance | Report provides examples of responses received to questionnaires distributed to experienced EPA and state inspectors and inspection program managers in 1998 and 1999. Responses cover topics such as successful tools, techniques, and strategies for achieving environmental compliance. |
| EPA Office of Planning and Policy Analysis; <i>Compliance Information Project – Views from The Field: Inspector Perspectives on Environmental Compliance</i> (April 2000). [unpublished/available from USEPA\contact Compliance Literature Search Results project manager] | | | | |

Topic: Theoretical Analyses of Why Firms Comply and the Impacts of Inspections and Enforcement

| # | Year | Author | Title | Summary |
|---|------|--------------------------|---|---|
| 49 | 2005 | Chen (INECE) | Disaggregate Theories and Firm Compliance Behavior | Author examines factors influencing compliance behavior within firms and synthesizes the literature across various fields – management sciences, business, economic, and human behavior – to create a more comprehensive understanding of the determinants of corporate response to environmental regulations. Author concludes by discussing the factors that a model of the drivers of firm compliance would need to address. |
| Chen, N.; <i>Disaggregate Theories and Firm Compliance Behavior</i> ; INECE (2005). http://www.inece.org/ucsb/DisaggregBehavMemoChenECEOct%2005.pdf | | | | |
| 50 | 2005 | Grossman, et. al (INECE) | An Introduction to Theories of Why States and Firms Do (And Do Not) Comply With Law | Theories about compliance provide different accounts of why states, firms, and individuals comply or do not comply with international and domestic laws. The authors discuss theories of compliance at two principal levels, international and domestic, and compare and contrast the theories. |
| Grossmann, D. & Zaelke, D.; <i>An Introduction to Theories of Why States and Firms Do (And Do Not) Comply With Law</i> ; Seventh International Conference on Environmental Compliance and Enforcement, INECE Conference pp. 73-80 (April 2005). http://www.inece.org/conference/7/vol1/13_Grossman.pdf | | | | |
| 51 | 2005 | Harris (INECE) | Combining Legal Mandates With Economics in the Application of Environmental Law | Author, a former EPA enforcement official, describes the economy and enforcement as being mutually supporting. Paper discusses the role of penalties in creating deterrence and improving compliance and how the “polluter pays” concept has been implemented in the United States with civil and criminal penalty case studies. |
| Harris, P.; <i>Combining Legal Mandates With Economics in the Application of Environmental Law</i> ; Seventh International Conference on Environmental Compliance and Enforcement. pp. 31-38 (April 2005) . http://www.inece.org/conference/7/vol1/07_Harris.pdf | | | | |

Topic: Theoretical Analyses of Why Firms Comply and the Impacts of Inspections and Enforcement

| # | Year | Author | Title | Summary |
|---|------|------------------|---|--|
| 52 | 2004 | Sharfman, et. al | A Model of the Global and Institutional Antecedents of High-Level Corporate Environmental Performance | Authors analyze the effects of global and institutional pressures on firms' environmental performance and explain how these pressures drive them to exceed minimum regulatory standards wherever they operate. Findings include that the higher the average level of regulation a firm faces internationally, the higher its environmental performance will be. |
| Sharfman, M., Shaft, M. & Tihanyi, L.; <i>A Model of the Global and Institutional Antecedents of High-Level Corporate Environmental Performance</i> ; Business and Society 43.1: 6-36 (March 2004). http://bas.sagepub.com/cgi/content/abstract/43/1/6 | | | | |
| 53 | 2003 | Malloy | Regulation, Compliance and the Firm | Article explores, from an organizational perspective, an alternative regulatory approach in which the regulator directly intervenes in firms' management functions by mandating or encouraging environmental management system (EMS) use. Hypothetical scenarios illustrate how flawed firm compliance routines and inadequate distribution and use of information, personnel, and authority within firms can lead to regulatory violations. |
| Malloy, T.; <i>Regulation, Compliance And The Firm</i> ; Temple Law Review. Vol 76 (3): pp. 451-488.(2003). [web version not located] | | | | |
| 54 | 2003 | Vandenbergh | Beyond Elegance: A Testable Typology of Social Norms in Corporate Environmental Compliance | Article applies rational choice theory to the environmental compliance decision making of corporate managers. Deterrence theories are analyzed in context of the roles of penalties and regulator actions in corporate manager decisionmaking. |
| Vandenbergh, M. P.; <i>Beyond Elegance: A Testable Typology of Social Norms in Corporate Environmental Compliance</i> ; Stanford Env. Law Journal, Vol. 22:1, pp. 55-114 (2003). http://elj.stanford.edu/elj/public/archives/author.htm | | | | |
| 55 | 2000 | Heyes | Implementing Environmental Regulations: Enforcement and Compliance | Survey of selected literature on the enforcement dimensions of environmental regulation. Author discusses the benchmark simple random monitoring model, how it has been extended and adapted over the years, and the role of citizens – through markets and politics – in the determination of compliance incentives. |

Topic: Theoretical Analyses of Why Firms Comply and the Impacts of Inspections and Enforcement

| # | Year | Author | Title | Summary |
|--|------|---------------------|--|--|
| <p>Heyes, A.; <i>Implementing Environmental Regulation: Enforcement and Compliance</i>; Journal of Regulatory Economics, Vol 17(2), pp. 107-29 (2000). http://www.springerlink.com/content/14133784kgn23p92/; http://www.oecd.org/dataoecd/19/17/33947786.pdf</p> | | | | |
| 56 | 1999 | Livernois & McKenna | Truth or Consequences: Enforcing Pollution Standards with Self-Reporting | Evidence suggests that a surprisingly large fraction of firms comply with pollution emission standards even though expected penalties for noncompliance are low. Authors offer an explanation by extending the standard model of enforcement to include a self-reporting requirement and enforcement power in a manner described as challenging the conventional result that higher fines lead to higher compliance rates. |
| <p>Livernois, J. & McKenna; C. J.;. <i>Truth or Consequences: Enforcing Pollution Standards with Self Reporting</i>; Journal of Public Economics, Vol. 71, No. 3 pp. 415-440(26) (March 1999). http://www.ingentaconnect.com/content/els/00472727/1999/00000071/00000003/art00082</p> | | | | |

Topic: Relationship Between Good Governance and Enforcement and Other Interventions

| # | Year | Author | Title | Summary |
|--|------|-------------------------|---|--|
| 57 | 2006 | EABIS | The Changing Role of Government in Corporate Responsibility | Document outlines key drivers governments can use to promote corporate responsibility. The role of other actors such as civil organizations are discussed in the context of a new set of relationships between government, business and civil society. Examples consider different government approaches in Italy, Norway and the United Kingdom. An appendix to the report provides a practical framework for better understanding a government's role in promoting corporate responsibility. |
| <p>European Academy of Business in Society; <i>The Changing Role of Government in Corporate Responsibility</i> (April 2006). www.eabis.org/PractitionersReport100406_pdf_media_public.aspx -or- http://209.85.165.104/search?q=cache:BS0r1Sn0zQ0J:www.eabis.org/PractitionersReport100406_pdf_media_public.aspx+%22The+Changing+Role+of+Government+in+Corporate+Responsibility+%22&hl=en&ct=clnk&cd=2&gl=us</p> | | | | |
| 58 | 2005 | Harman (INECE) | The Relationship Between Good Governance and Environmental Compliance and Enforcement | Author discusses the principles of good governance, explores the link between good governance, environmental compliance, and enforcement, and describes examples of good governance in action. |
| <p>Harman, Sir John; <i>The Relationship Between Good Governance and Environmental Compliance and Enforcement</i>; Seventh International Conference on Environmental Compliance and Enforcement. INECE Conference Paper. pp.5-14 (April 2005). http://www.inece.org/conference/7/vol1/04_Harman.pdf</p> | | | | |
| 59 | 2005 | Morita & Zaelke (INECE) | Rule of Law, Good Governance, and Sustainable Development | Article reviews the relationship between the rule of law, good governance, and sustainable development. Authors address the importance of compliance and enforcement for promoting and achieving sustainable development. |
| <p>Morita, S. & Zaelke, D.; <i>Rule of Law, Good Governance, and Sustainable Development</i>; Seventh International Conference on Environmental Compliance and Enforcement; INECE Conference Paper, pp.15-22 (April 2005). http://www.inece.org/conference/7/vol1/05_Sachiko_Zaelke.pdf</p> | | | | |

Topic: Relationship Between Good Governance and Enforcement and Other Interventions

| # | Year | Author | Title | Summary |
|--|------|--------------------------|--|---|
| 60 | 2005 | Zaelke, Stilwell & Young | Compliance, Rule of Law, and Good Governance – Making Law Work for Sustainable Development | Article discusses compliance in the broader context of the rule of law and good governance. The authors explain that sustainable development depends on good governance, which depends on the rule of law, which depends on compliance. |
| <p>Zaelke D., Stilwell, M., & Young, O.; <i>Compliance, Rule of Law, And Good Governance: What Reason Demands – Making Law Work for Sustainable Development</i>; Compliance, Rule of Law, & Good Governance; Chapter 1, <i>Making Law Work</i> (2005). http://www.inece.org/mlw/Chapter1_ZaelkeStilwellYoung.pdf</p> | | | | |
| 61 | 2002 | Cruden & James | Env. Compliance and Enforcement at the USDOJ and the Role of Enforcement in Good Domestic Governance | Authors describes the concept of good governance and how it relates to enforcement, the value of strong environmental enforcement, and how the DOJ-ENRD is organized and handles litigation. |
| <p>Cruden, J. C. & James, R.; <i>Environmental Compliance and Enforcement at the United States Department of Justice and the Role of Enforcement in Good Domestic Governance</i>; Sixth International Conference on Environmental Compliance and Enforcement. INECE Conference Paper. pp. 1-9 (April 2002). http://www.inece.org/conf/proceedings2/18-Env.%20Compliance.pdf</p> | | | | |

Topic: Compliance and Performance Indicators and Measurement

| # | Year | Author | Title | Summary |
|---|------|-----------------|---|---|
| 62 | 2006 | Cutting, et al. | Enforcement Data: A Tool for Pollution Control | Project analyzes the utility of publicly available compliance and enforcement data on polluters. It features an extensive electronic table of all enforcement data available nationwide, verified by a survey conducted of all state programs. |
| Cutting, Robert H., et al.; <i>Enforcement Data: A Tool for Pollution Control</i> ; 36 Environmental Law Reporter 10060-10072 (January 2006). [web version not located] | | | | |
| 63 | 2006 | Metzenbaum | Measure to Comply, Measure to Perform | Author discusses methods agencies can use to analyze the measurement data they gather and use the data as a management tool to identify problems that need attention. Also discussed are successes that warrant replication and how to disseminate those findings and spread effective practices. |
| Metzenbaum, S.; <i>Measure to Comply, Measure to Perform</i> ; Univ. of MD Government Performance White Paper (2006). http://www.complianceconsortium.org/ECCArticles/wp_measure_to_comply_measure_to_perform.pdf | | | | |
| 64 | 2005 | EPA OIG | EPA Performance Measures Do Not Effectively Track Compliance Outcomes | Office of Inspector General (OIG) evaluation of EPA's compliance program measures. Findings include that EPA relies primarily on output measures because it lacks compliance rates and other reliable outcome data. Report includes recommendations for improvement. |
| EPA Office of Inspector General; <i>EPA Performance Measures Do Not Effectively Track Compliance Outcomes</i> , Report No. 2006-P-00006 (Dec. 15, 2005). http://www.epa.gov/oig/reports/2006/20051215-2006-P-00006.pdf | | | | |
| 65 | 2005 | Hall (INECE) | Overview of Datasets for Environmental Compliance and Enforcement | Paper surveys some of the major compliance and enforcement datasets, describing their origin, authors, scope, content, and applicability. |
| Hall, D.; <i>Overview of Datasets for Environmental Compliance and Enforcement</i> ; INECE (2005). http://www.inece.org/ucsb/MemoDatasets_final.pdf | | | | |

Topic: Compliance and Performance Indicators and Measurement

| # | Year | Author | Title | Summary |
|---|------|----------------|--|---|
| 66 | 2005 | INECE | Performance Measurement Guidance for Compliance and Enforcement Practitioners | Document provides guidance to practitioners, drawn from the experiences of countries at various stages of developing and using compliance and enforcement indicators, for identifying, implementing, and using such indicators. |
| INECE Expert Working Group on Enforcement and Compliance Indicators; <i>Performance Measurement Guidance for Compliance and Enforcement Practitioners</i> (Nov. 2005); http://www.inece.org/indicators/guidance.pdf | | | | |
| 67 | 2004 | Stahl (INECE) | Performance Indicators for Environmental Compliance and Enforcement Programs: The U.S. EPA Experience | Author explores EPA’s efforts to develop and use results-based indicators in its compliance assurance program. Paper updates a prior paper presented to INECE in 2002 by including new information on how EPA is using performance indicators to improve the effectiveness of its enforcement and compliance program. |
| Stahl, M.; <i>Performance Indicators for Environmental Compliance and Enforcement Programs: The U.S. EPA Experience</i> ; INECE Sixth International Conference; Review Draft (Jan. 2004). http://www.inece.org/indicators/docs/StahlPaper.pdf | | | | |
| 68 | 2003 | Akella (INECE) | Enforcement Economics and Environmental Compliance: Lessons for the Development of ECE Output Indicators | Paper presents an enforcement economics model showing enforcement as a holistic system whose overall effectiveness depends on the effectiveness of each of its component parts. Role of output indicators is discussed and indicators are recommended for each step of the enforcement “chain.” |
| Akella, A. S.; <i>Enforcement Economics And Environmental Compliance: Lessons For The Development of ECE Output Indicators</i> . INECE (Nov. 2003). http://www.inece.org/indicators/proceedings/04q_ngoConservationInternational.pdf In addition, <i>see, generally</i> , INECE’s Indicators Forum at: http://inece.org/forumsindicators.html | | | | |

Topic: Compliance and Performance Indicators and Measurement

| # | Year | Author | Title | Summary |
|---|------|--------------------------|---|---|
| 69 | 2003 | Barrett & Pascoe (INECE) | Environmental Compliance and Enforcement Indicators: Environment Canada Pilot Projects – Addressing Challenges. | Paper presents a snapshot of Canada’s efforts to develop new, more meaningful compliance and enforcement indicators, including industrial process improvements, decreased recidivism rates, and reductions in time needed to return to compliance. Ultimate goal is to link compliance promotion and enforcement to actual environmental quality improvements via indicators. |
| Barrett, F. & Pascoe, D.; <i>Environmental Compliance And Enforcement Indicators – Environment Canada Pilot Projects – Addressing Challenges</i> ; INECE (Nov. 2003). http://www.inece.org/indicators/environmentcanada.pdf | | | | |
| 70 | 2003 | INECE-OECD | Measuring What Matters | Results of an international workshop on compliance and enforcement indicators to, among other things, review the rationale, purpose and needs for using such indicators, advance the development of common definitions and an indicators typology, and explore relationships with other types of environmental indicators. |
| INECE-OECD; <i>Measuring What Matters</i> ; Proceedings from the INECE-OECD Workshop on Environmental Compliance and Enforcement Indicators (Nov. 2003). http://www.oecd.org/dataoecd/12/33/34564043.pdf | | | | |
| 71 | 2003 | Metzenbaum | More Nutritious Beans | Discussion of how EPA and state pollution control agencies can better use the compliance data they are already collecting to reveal unsuspected problems in a firm or industry, track the success of enforcement initiatives, engage the public, and drive local environmental improvement initiatives. |
| Metzenbaum, S.; <i>More Nutritious Beans</i> ; The Environmental Forum (March/April 2003) at 19-41. http://www.complianceconsortium.org/ECCAuthored/MoreNutritiousBeans.pdf | | | | |

Topic: Compliance and Performance Indicators and Measurement

| # | Year | Author | Title | Summary |
|---|------|---------------|---|--|
| 72 | 2003 | Shewmake | Calculating and Communicating Environmental Compliance Rates | Author describes work by the Environmental Compliance Consortium (ECC) to develop better ways to calculate and communicate environmental compliance rates. Includes an introduction of a work product of that effort, an ECC Compliance Rate Template. |
| Shewmake, T.; <i>Calculating and Communicating Environmental Compliance Rates</i> ; ECOStates (Spring 2003). http://www.complianceconsortium.org/ECCAuthored/ComplianceRateArticle.pdf | | | | |
| 73 | 2003 | Yeater | Compliance and Enforcement Indicators in CITES | Paper discusses indicators for compliance with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). |
| Yeater, M.; <i>Compliance and Enforcement Indicators in CITES</i> ; INECE (Nov. 2003). http://www.inece.org/indicators/proceedings/04s_other_cites.pdf | | | | |
| 74 | 2002 | Corbett & Pan | Evaluating Environmental Performance Using Statistical Process Control Techniques | Authors propose use of the cumulative sum chart as a tool to monitor emissions data so abnormal changes can be detected promptly. They further propose the use of process capability indices to evaluate environmental performance and prioritize enforcement efforts. |
| Corbett, C. J. & Pan, Jeh-Nan; <i>Evaluating Environmental Performance Using Statistical Process Control Techniques</i> ; European Journal of Operational Research, 139(1), pp. 68-83 (May 2002). http://www.ingentaconnect.com/content/els/03772217/2002/00000139/00000001/art00155 | | | | |
| 75 | 2001 | EC | Measuring the Environmental Performance of Industry (MEPI) – Final Report | Project to develop measures for comparing the overall environmental performance of industrial companies. Performance drivers are analyzed for a large sample of European companies. A standardized approach for quantitative environmental performance indicators is developed for six industrial sectors. |
| EC Environment and Climate Research Programme; <i>Measuring the Environmental Performance of Industry (MEPI) – Final Report</i> ; Science and Technology Policy Research, University of Sussex (Feb. 2001). http://susproc.jrc.es/docs/MEPI%20FinalReport.pdf | | | | |

Topic: Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation

| # | Year | Author | Title | Summary |
|---|------|------------------------|--|---|
| 76 | 2006 | Coglianesse & Nash | Beyond Compliance – Business Decision Making and US EPA’s Performance Track Program | Research supported by an EPA-Office of Policy, Economics and Innovation (OPEI) cooperative agreement. Report addresses why some facilities, but not others, apply for membership in voluntary programs like EPA’s National Environmental Performance Track (PT) and the impact of eligibility criteria, program requirements, and incentives on membership. What distinguishes businesses that join programs such as PT from ones that do not is less their environmental performance relative to non-applicants as their internal organizational dynamics. |
| Coglianese, C. & Nash, J.; <i>Beyond Compliance – Business Decision Making and US EPA’s Performance Track Program</i> ; Harvard University JFK School of Government (2006). http://www.ksg.harvard.edu/m-rcbg/rpp/CoglianesseNashNEPTRReport.pdf | | | | |
| 77 | 2006 | Delmas & Montes-Sancho | Voluntary Agreements to Improve Environmental Quality: Are Late Joiners the Free Riders? | Authors analyze how free-riding affects the effectiveness of corporations’ collective political strategies to shape government policy within the context of environmental voluntary agreements. Focusing on the Climate Challenge program, they find that substantive cooperative strategies are more likely to be pursued by firms entering such programs at their initiation while free-riding, or symbolic cooperation, is more likely to be adopted by late joiners. |
| Delmas, M. & Montes-Sancho, M.; <i>Voluntary Agreements to Improve Environmental Quality: Are Late Joiners the Free Riders?</i> ; Erb Institute Colloquium Paper (2006). http://www.erb.umich.edu/News-and-Events/colloquium_papers/Delmas-Montes-ERB-06.pdf Related paper: <i>The Effectiveness of Voluntary Agreements to Improve Environmental Quality: Symbolic Versus Substantive Collaboration</i> (Aug. 2005). http://www.isnie.org/ISNIE05/Papers05/delmasmontes.pdf | | | | |

Topic: Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation

| # | Year | Author | Title | Summary |
|--|------|---------------------|---|--|
| 78 | 2006 | EPA OIG | Partnership Programs May Expand EPA's Influence | OIG evaluation conducted to collect current and consistent information on 54 EPA partnership programs. Analysis considers barriers to data collection and analysis and program evaluation. |
| <p>EPA Office of Inspector General; <i>Partnership Programs May Expand EPA's Influence</i>, Report No. 2007-P-00003 (Nov.14, 2006). http://www.epa.gov/oig/reports/2007/20061114-2007-P-00003.pdf</p> | | | | |
| 79 | 2006 | Gamper-Rabindran | Did the EPA's Voluntary Industrial Toxics Program Reduce Plants' Emissions? | Author evaluates EPA's 33/50 Program via a GIS analysis of distributional impacts and by-media analysis of substitution. Controlling for participant self-selection into the program, the author found that participants did not reduce health-indexed emissions of target chemicals in several key industries and/or they reduced emissions by increasing off-site transfers. |
| <p>Gamper-Rabindran, S.; <i>Did the EPA's Voluntary Industrial Toxics Program Reduce Plants' Emissions? A GIS Analysis of Distributional Impacts and a By-Media Analysis of Substitution</i>; Journal of Environmental Economics and Management, Vol. 52, Issue 1, pp. 391-410 (July 2006). http://www.sciencedirect.com/science/article/B6WJ6-4JJGB0B-1/2/1e246d961e3287c3fa5b77a724a68fcf</p> | | | | |
| 80 | 2006 | Morgenstern & Pizer | Reality Check: The Nature and Performance of Voluntary Environmental Programs in the United States, Europe, and Japan | In-depth analyses of seven voluntary environmental programs, including Climate Wise, 33/50, the U.K. Climate Change Agreements, and the Keidanren Voluntary Action Plan. Focus is on assessing actual performance. Authors find that most programs have positive results but they are small compared with business-as-usual trends and the impact of other forces such as higher energy prices and potential gains may be quickly exhausted. |
| <p>Morgenstern, R. & Pizer, W.; <i>Reality Check: The Nature and Performance of Voluntary Environmental Programs in the United States, Europe, and Japan</i>; Resources for the Future Press (Feb. 2007). http://www.rff.org/rff/RFF_Press/CustomBookPages/Reality-Check.cfm?CFID=5879848&CFTOKEN=81568384</p> | | | | |

Topic: Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation

| # | Year | Author | Title | Summary |
|--|------|---------------------------|---|---|
| 81 | 2006 | Prakash & Potoski | The Voluntary Environmentalists – Green Clubs, ISO 14001, and Voluntary Environmental Regulations | Drawing on the economic theory of club goods, this book offers a theoretical account of voluntary environmental programs by identifying the institutional features that influence conditions under which programs can be effective. Linking program efficacy to club design, the authors discuss collective action challenges faced by green clubs. The authors' findings include that, on average, ISO 14001 members pollute less and comply better with governmental regulations. |
| Prakash, A. & Potoski, M.; <i>The Voluntary Environmentalists – Green Clubs, ISO 14001, and Voluntary Environmental Regulations</i> ; Cambridge University Press (2006). http://www.cambridge.org/us/catalogue/catalogue.asp?isbn=0521677726 | | | | |
| 82 | 2006 | Rivera, de Leon & Koerber | Is Greener Whiter Yet? The Sustainable Slopes Program After Five Years | Followup study to the authors' 2004 Sustainable Slopes Program study (<i>see below</i> , #91). This study assesses the Program's environmental effectiveness from 2001 to 2005. Authors find no evidence that ski areas adopting the Program outperformed non-participants in four of five environmental performance metrics. |
| Rivera, J., de Leon, P. and Koerber, C.; <i>Is Greener Whiter Yet? The Sustainable Slopes Program After Five Years</i> ; Policy Studies Journal, Vol. 34, No. 2, 195-224 (2006). http://home.gwu.edu/~jriversa/IsGreenerWhiterYet,PSJfinal,May2006.pdf | | | | |
| 83 | 2006 | Steelman & Rivera | Voluntary Environmental Programs in the United States: Whose Interests Are Served? | Article details a framework of procedural, substantive, and practical tests to determine whether a voluntary environmental program is serving the common interest. The Forest Stewardship Council Certification and Sustainable Slopes Programs are considered. Authors find that common interest outcomes may be promoted by performance based standards, third-party oversight, sanctions or rewards, and credible threats to enforce existing or enact new regulations. |
| Steelman, T. & Rivera, J.; <i>Voluntary Environmental Programs in the United States: Whose Interests Are Served?</i> ; Organization & Environment, Vol. 19, Issue 4 (Dec. 2006). http://home.gwu.edu/~jriversa/VEPsintheUSWhoseInterests,July17.pdf | | | | |

Topic: Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation

| # | Year | Author | Title | Summary |
|---|------|------------------|--|--|
| 84 | 2005 | Darnall & Carmin | Greener and Cleaner? The Signaling Accuracy of U.S. Voluntary Environmental Programs | Paper investigates voluntary program design characteristics to better understand signaling accuracy. Less rigorous programs can signal inaccurately that they are comparable to more robust programs. Lack of effective monitoring and sanctions creates “free rider” opportunities. Absent some means to distinguish between such programs their viability is threatened. |
| Darnall, N. & Carmin, J.; <i>Greener and Cleaner? The Signaling Accuracy of U.S. Voluntary Environmental Programs</i> ; Policy Sciences 38:71-100 (2005). https://osf1.gmu.edu/~ndarnall/docs/Cleaner_Greener.pdf | | | | |
| 85 | 2005 | Delmas & Keller | Strategic Free Riding in Voluntary Programs: The Case of EPA’s Wastewise Program | Free riding occurs when a firm or individual benefits from others’ actions and efforts without paying for or sharing in the costs. Authors address the factors that favor or hamper free riding behavior in voluntary programs based on their analysis of EPA’s WasteWise program. |
| Delmas, M. & Keller, A.; <i>Strategic Free Riding in Voluntary Programs: The Case of EPA’s WasteWise Program</i> ; Policy Sciences 38:91-106 (2005). http://www2.bren.ucsb.edu/~delmas/webpage/Delmas-Keller.pdf | | | | |
| 86 | 2005 | EPA OIG | Ongoing Management Improvements and Further Evaluation Vital to EPA Stewardship and Voluntary Programs | OIG evaluation. Stakeholders were asked to define stewardship, list motivators and obstacles to participating in stewardship programs, and outline EPA roles in area. Recommendations are offered based on interview results. |
| EPA Office of Inspector General; <i>Ongoing Management Improvements and Further Evaluation Vital to EPA Stewardship and Voluntary Programs</i> ; Report No. 2005-P-00007 (Feb. 17, 2005). http://www.epa.gov/oig/reports/2005/20050217-2005-P-00007.pdf | | | | |

Topic: Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation

| # | Year | Author | Title | Summary |
|--|------|------------------|--|--|
| 87 | 2005 | Johnston | The Promise and Limits of Voluntary Management-Based Regulatory Reform: An Analysis of EPA's Strategic Goals Program | Working paper. Study of EPA's late 1990's Strategic Goals Program (SGP) for small and medium sized metal finishers. Incentives included flexible regulatory treatment by state regulators, direct technical assistance, and limited financial assistance. Paper explains the SGP's relative ineffectiveness as due to relatively weak incentives given the cost of pollution prevention. |
| Johnston, J.; The Promise and Limits of Voluntary Management-Based Regulatory Reform: An Analysis of EPA's Strategic Goals Program; U. of Penn. Public Law Working Paper No. 06-05 (2005). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=712103 | | | | |
| 88 | 2005 | Vidovic & Khanna | Can Voluntary Pollution Prevention Programs Fulfill Their Promises? Further Evidence from the EPA's 33/50 Program | Unpublished paper presented at 2006 Third World Congress of Environmental and Resource Economists. The evaluation of EPA's 33/50 Program found that the decline in observed emissions from 1991-1995 were likely the result of an independent trend rather than a direct consequence of the program. |
| Vidovic, M. and Khanna, N.; <i>Can Voluntary Pollution Prevention Programs Fulfill Their Promises? Further Evidence from the EPA's 33/50 Program</i> ; unpublished/presented at 2006 Third World Congress of Environmental and Resource Economists (Dec. 15, 2005 version). [unpublished/available from author at nkhanna@binghamton.edu] | | | | |
| 89 | 2004 | King | Economic research shows that sparing the rod spoils the Bay | Author describes 2004 Nobel Prize-winning economics research on how the success or failure of regulatory systems depends primarily on bottom-up microeconomic decisions on how easy it is to "game" regulatory programs. Effect said to explain why intergovernmental agreements, voluntary partnerships, and stakeholder initiatives have failed to clean up the Chesapeake Bay. |
| King, D.; <i>Economic research shows that sparing the rod spoils the Bay</i> ; Chesapeake Bay Journal (2004). http://www.bayjournal.com/article.cfm?article=2444 | | | | |

Topic: Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation

| # | Year | Author | Title | Summary |
|--|------|-------------------|--|---|
| 90 | 2004 | Potoski & Prakash | The Regulation Dilemma: Cooperation and Conflict in Environmental Governance | Article examines how regulatory enforcement can influence firms' compliance with mandatory requirements and voluntary standards. Cooperative regulatory enforcement where firms self-police and governments provide relief for self-disclosed violations yields optimal win-win outcomes when both sides cooperate. If firms are likely to evade compliance, a deterrence approach is superior. |
| <p>Potoski, M. & Prakash, A.; <i>The Regulation Dilemma: Cooperation and Conflict in Environmental Governance</i>; Public Administration Review Vol. 64, No. 2 at 152-63 (March-April 2004). http://depts.washington.edu/ampol/publications/online_papers/par.pdf</p> | | | | |
| 91 | 2004 | Rivera & de Leon | Is Greener Whiter? Voluntary Environmental Performance of Western Ski Areas | In this paper, the authors analyze the first year implementation of the Sustainable Slopes Program. Despite discussed institutional pressures, the author found that participation appeared to be correlated with lower environmental performance ratings due to a lack of mechanisms to prevent opportunism. Such mechanisms include specific environmental standards, 3 rd -party oversight, and sanctions for poor performance. |
| <p>Rivera, J. & de Leon, P.; <i>Is Greener Whiter? Voluntary Environmental Performance of Western Ski Areas</i>; Policy Studies Journal, Vol. 32, No. 3, 417-437 (2004). http://home.gwu.edu/~jrivera/IsGreenerWhiter.PSJ.Publication.August2004.pdf</p> | | | | |

Topic: Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation

| # | Year | Author | Title | Summary |
|---|------|---------------------|--|---|
| 92 | 2004 | Sam & Innes | Voluntary Pollution Reductions and the Enforcement of Environmental Law: An Empirical Study of the 33/50 Program | Study of empirical determinants and effects of firms' participation in EPA's 33/50 voluntary pollution reduction program. Authors study bi-directional links between participation and enforcement, effects of implied boycotts, and potential regulatory preemption and incentives. Findings include that firms' participation was motivated by expectation of relaxed regulatory scrutiny which was borne out by regulatory practice. |
| <p>Sam, A. & Innes, R.; <i>Voluntary Pollution Reductions and the enforcement of Environmental Law: An Empirical Study of the 33/50 Program</i>; Research Paper 2004-08, Univ. of AZ (Sept. 2004). http://cals.arizona.edu/arec/pubs/researchpapers/2004-08saminnes.pdf</p> | | | | |
| 93 | 2004 | Xepapadeass & Passa | Participation in and Compliance With Public Voluntary Environmental Programs: An Evolutionary Approach | Theoretical examination of participating firms in a long-term voluntary program. Authors use replicator dynamics modeling participation and compliance, combined with pollution stock dynamics, to identify program characteristics, e.g. auditing probabilities, necessary to induce the majority of firms to participate and comply with program requirements. |
| <p>Xepapadeass, A. & Passa, C.; <i>Participation in and Compliance with Public Voluntary Environmental Programs: An Evolutionary Approach</i>; Working Paper (April 2004). http://www.soc.uoc.gr/ecosud/docs/Passa-Xepa/EARE_Xepapadeas_Passa.pdf</p> | | | | |
| 94 | 2003 | OECD | Voluntary Approaches for Environmental Policy – Effectiveness, Efficiency and Usage in Policy Mixes | Report provides an assessment of the use of voluntary approaches, building on a number of case studies in countries around the world (including the Intel and Merck XL Projects in the United States). Includes results of an extensive literature search. |
| <p>OECD; <i>Voluntary Approaches for Environmental Policy – Effectiveness, Efficiency and Usage in Policy Mixes</i>; (2003). http://www.foundationpartnership.org/pdf/oecd.PDF</p> | | | | |

Topic: Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation

| # | Year | Author | Title | Summary |
|---|------|---------------------|--|---|
| 95 | 2002 | Alberini & Segerson | Assessing Voluntary Programs to Improve Environmental Quality | Literature review of theoretical and empirical studies of voluntary programs. Discussion of potential metrics of voluntary program success. |
| Alberini, A. & Segerson., K.; <i>Assessing Voluntary Programs to Improve Environmental Quality</i> ; Env. and Resource Economics, Vol. 22 (1-2), pp. 157-184 (2002). http://www.springerlink.com/content/c8fhmyyfrv4htywd/ | | | | |
| 96 | 2001 | Delmas & Terlaak | A Framework for Analyzing Environmental Voluntary Programs | Benefits to firms of participating in voluntary agreements can be outweighed by high transaction and administrative costs. Article discusses when participation offers strategic opportunities versus excessive costs. |
| Delmas, M. & Terlaak, A.; <i>A Framework for Analyzing Environmental Voluntary Agreements</i> ; California Management Review, Vol 43, No. 3, pp. 45-63 (2001). http://www2.bren.ucsb.edu/~delmas/webpage/CALMANREVIEW.pdf | | | | |
| 97 | 2000 | King & Lennox | Industry Self-Regulation Without Sanctions: The Chemical Industry's Responsible Care Program | Study of the American Chemistry Council's (ACC) Responsible Care voluntary program found that inadequate industry self-regulation and sanctions led to opportunism in the form of a disproportionate number of poor performers and lack of improvement by members relative to nonmembers. The ACC responded substantively to the results of this study. |
| King, A. & Lennox, M.; <i>Industry Self-Regulation Without Sanctions: The Chemical Industry's Responsible Care Program</i> ; Academy of Management Journal 43(4), pp. 698-716 (2000). http://www.stern.nyu.edu/bes/papers/selfreg.pdf Related paper: <i>Voluntary Environmental Standards: Furthering Moral Suasion While Preventing Moral Hazard</i> . http://cfpub1.epa.gov/ncer_abstracts/index.cfm/fuseaction/searchControlled.main?RequestTimeout=180 | | | | |

Topic: Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation

| # | Year | Author | Title | Summary |
|--|------|-------------------------|---|---|
| 98 | 2000 | Maxwell, Lyon & Hackett | Self-Regulation and Social Welfare: the Political Economy of Corporate Environmentalism | Authors extend the economic theory of regulation to allow for self-regulation that preempts political action. Empirical evidence on releases of toxic chemicals shows that increased threat of regulation (as proxied by increased conservation group membership) induces firms to reduce toxic releases. |
| Maxwell, J., Lyon, T. & Hackett, S.; <i>Self-Regulation and Social Welfare: the Political Economy of Corporate Environmentalism</i> , Journal of Law & Economic, Vol. XLIII (Oct. 2000). http://webuser.bus.umich.edu/tplyon/MLH.pdf | | | | |
| 99 | 2000 | Tenney | A Comparison of Voluntary and Mandatory State Pollution Prevention Program Achievements | Evaluation/comparison of 15 state pollution prevention programs, from 1991-1997, using production-adjusted TRI waste data. Mandatory P2 programs reduced waste an average of 51%, voluntary P2 programs an average of 25%. Waste for all voluntary programs combined increased 23%; waste for all mandatory programs combined decreased by 12%. |
| Tenney, H.; <i>A Comparison of Voluntary and Mandatory State Pollution Prevention Program Achievements</i> ; Tufts Univ. (2000). Posted on the Environmental Council of the States (ECOS) website at: http://www.ecos.org/content/general/detail/1975 | | | | |
| 100 | 2000 | Videras & Alberini | The Appeal of Voluntary Environmental Programs: Which Firms Participate and Why? | Theoretical review of why firms participate in voluntary programs with an empirical analysis of programs' members in the 33/50, Green Lights, and WasteWise programs. Findings include that the worse the firm's environmental record, the more likely it is to participate in voluntary programs but only when they are directed related to highly regulated pollutants. The authors describe this finding as broadly consistent with the predictions of other researchers that a 'stick-and-carrot' approach increases firm responsiveness to voluntary programs. |
| Videras, J. & Alberini, A.; <i>The Appeal of Voluntary Environmental Programs: Which Firms Participate and Why?</i> ; Contemporary Economic Policy, Vol. 18, No. 4, pp. 449-461 (Oct. 2000). http://ideas.repec.org/a/oup/coecpo/v18y2000i4p449-61.html | | | | |

Topic: Voluntary Programs: Design, Effectiveness, and Factors Influencing Firm Participation

| # | Year | Author | Title | Summary |
|---|------|----------------|--|--|
| 101 | 1999 | Li & McConomy | An Empirical Examination of Factors Affecting the Timing of Environmental Accounting Standard Adoption and the Impact on Corporate Valuation | Analysis of 63 mining and 103 oil and gas companies on the Toronto Stock Exchange. Firms adopting the new environmental accounting standard were more likely to: have been audited by a Big 6 firm; have a strong environmental commitment; be in relatively good financial health; and be relatively less uncertain as to their future remediation costs. |
| <p>Li, Y. & McConomy, B. J.; <i>An Empirical Examination of Factors Affecting the Timing of Environmental Accounting Standard Adoption and the Impact on Corporate Valuation</i>; Journal of Accounting, Auditing & Finance, Vol. 14, No. 3 pp. 279-319 (Summer 1999). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=186171</p> | | | | |
| 102 | 1999 | Lyon & Maxwell | “Voluntary” Approaches to Environmental Regulation: A Survey | Authors review literature on voluntary approaches to environmental regulation: unilateral commitments; public-private cooperative approaches; and negotiated agreements between government and industry. The three motivators for firms to commit to such approaches are improving corporate productivity, appealing to "green" consumers, and optimizing corporate regulatory strategy. Authors compare assumptions of various models to identify conditions under which welfare-reducing voluntary actions are likely. |
| <p>Lyon, T. P. & Maxwell, J. W.; <i>“Voluntary” Approaches to Environmental Regulation: A Survey</i>; Working Paper (January 1999). http://ssrn.com/abstract=147888 See also: http://webuser.bus.umich.edu/tplyon/VERChap3.PDF</p> | | | | |

Topic: Citizen Participation in Enforcement and Compliance

| # | Year | Author | Title | Summary |
|---|------|------------|---|---|
| 103 | 2007 | Stafford | Can Consumers Enforce Environmental Regulations? The Role of the Market in Hazardous Waste Compliance | Examination of the U.S. hazardous waste management industry to assess role consumers play in encouraging compliance. Noncompliance decreases demand, at least in the short term. No evidence found that market size affects compliance behavior but local competition increases compliance and commercial managers are less likely to be in compliance than on-site managers. |
| Stafford, S.; <i>Can Consumers Enforce Environmental Regulations? The Role of the Market in Hazardous Waste Compliance</i> ; Business and Economics, Vol. 31, No. 1 at 83-107 (February, 2007). http://www.springerlink.com/content/q3v70717w4478180/ | | | | |
| 104 | 2005 | Seidenfeld | “The Friendship of the People”: Citizen Participation in Environmental Enforcement | A discussion of the pros and cons of citizen participation in environmental enforcement. Article suggests three approaches – tripartism, corporatism and deliberative participation – to capture the benefits of both citizen participation and a balanced model of enforcement. |
| Seidenfeld, M.; <i>The Friendship of the People: Citizen Participation in Environmental Enforcement</i> ; 73 George Wash. Law Rev. 269 (2005). http://docs.law.gwu.edu/stdg/gwlr/issues/73-2.htm | | | | |
| 105 | 2004 | Currie | Are Environmental Complaints from Citizens of Any Value? | Pennsylvania Department of Environmental Protection analysis of data in its Complaint Tracking System revealed that responding to citizen complaints was worthwhile because it revealed violations found at both permitted and unknown sites. Future work will attempt to isolate predictors of citizen complaints. |
| Currie, K.; <i>Are Environmental Complaints from Citizens of Any Value?</i> ; ECOStates (Spring 2004). http://www.complianceconsortium.org/StoredDocuments/ECC/SAS_Ecostates_article.pdf | | | | |

Topic: Citizen Participation in Enforcement and Compliance

| # | Year | Author | Title | Summary |
|---|------|---------------------------|--|---|
| 106 | 2003 | O'Rourke & Macey | Community Environmental Policing: Assessing New Strategies of Public Participation in Environmental Regulation | Paper evaluates use of local "bucket brigades" to allow community members to sample air emissions near industrial facilities. Such sampling technology deemed to enhance local residents' participation in emergency response and citizens' right-to-know. Means to strengthen the program are also examined. |
| O'Rourke, D. & Macey, G.; <i>Community Environmental Policing: Assessing New Strategies of Public Participation in Environmental Regulation</i> ; Association for Public Policy Analysis and Management, Vol. 22, No. 3, 383-414 (2003). http://nature.berkeley.edu/orourke/PDF/CEP-JPAM.pdf | | | | |
| 107 | 2002 | Bruch & Czebiniak (INECE) | Regional Mandates and National Experiences Promoting Public Involvement in Env. Compliance & Enf. | Paper describes how increasing citizen participation, particularly through citizen monitoring and citizen enforcement, can enhance compliance and enforcement. |
| Bruch, C. & Czebiniak, R.; <i>Regional Mandates and National Experiences Promoting Public Involvement in Environmental Compliance and Enforcement</i> ; INECE Sixth international Conference, pp. 117-129 (April 2002). http://www.inece.org/conf/proceedings1/PreceedingsBook%20117-130.pdf | | | | |
| 108 | 2002 | Zinn | Policing Environmental Regulatory Enforcement: Cooperation, Capture, and Citizen Suits | Article posits cooperative enforcement (agency-industry negotiation and compromise) as an existing norm, describes its benefits and risks, and suggests an operational definition of optimal enforcement with both cooperation and punitive enforcement. Risk of agency "capture," and the pros and cons of citizen suits, are discussed. |
| Zinn, M.; <i>Policing Environmental Regulatory Enforcement: Cooperation, Capture, and Citizen Suits</i> ; 21 <i>Stanford Env. Law Journal</i> 81 (Jan. 2002). http://www.law.buffalo.edu/Academics/courses/561/materials/Zinn1.pdf and http://www.law.buffalo.edu/Academics/courses/561/materials/Zinn2.pdf | | | | |

Topic: Compliance and Enforcement Design Principles and Strategies Including Audit Policies

| # | Year | Author | Title | Summary |
|--|------------------|----------|---|--|
| 109 | 2007 (forth.) | Markell | Is There a Possible Role for Regulatory Enforcement in the Efforts to Value, Protect, and Restore Ecosystem Services? | Forthcoming in Journal of Land Use and Environmental Law. Article explores potential role of environmental enforcement tools – penalties, injunctive relief, and Supplemental Environmental Projects (SEPs) – for protecting and restoring ecosystems and their services and challenges regulators to employ them for this purpose. |
| Markell, D.; <i>Is There a Possible Role for Regulatory Enforcement in the Efforts to Value, Protect, and Restore Ecosystem Services?</i> ; 21 Journal of Land Use and Environmental Law ____ (forthcoming 2007). [web version not presently available] | | | | |
| 110 | 2007 | Stafford | Should You Turn Yourself In? The Consequences of Self-Policing | Using data on U.S. hazardous waste enforcement and disclosures, author finds that facilities that self-police are rewarded with a lower probability of inspection and facilities inspected frequently are more likely to disclose. Results suggest that facilities may be able to strategically disclose in order to decrease future enforcement. |
| Stafford, S.; <i>Should You Turn Yourself In? The Consequences of Self-Policing</i> ; Journal of Public Policy Analysis and Management; Vol. 26, Issue 2, pp. 305-326 (Spring 2007). http://www.wm.edu/economics/people/stafford/ | | | | |
| 111 | 2006 | Stafford | State Adoption of Environmental Audit Initiatives | Article examines factors affecting state adoption of audit legislation and policies. The results of a cross-section probit and Weibull proportional hazard model suggest that political context and state-federal relationships are key factors in adoption decisions while environmental conditions are less significant and institutional capacity is the least important. |
| Stafford, S. L., <i>State Adoption of Environmental Audit Initiatives</i> ; Contemporary Economic Policy, Vol. 24, Issue 1, pp. 172-187, (Jan. 2006). http://ssrn.com/abstract=904947 | | | | |

Topic: Compliance and Enforcement Design Principles and Strategies Including Audit Policies

| # | Year | Author | Title | Summary |
|---|------|-------------------------|--|--|
| 112 | 2006 | USEPA | Evaluation of the PrintSTEP Pilot Program | Report presents the results of an evaluation of the Printers' Simplified Total Environmental Partnership (PrintSTEP) program's pilot phase. It discusses program outcomes and lessons learned and provides recommendations on developing similar programs for other sectors. |
| USEPA Office of Compliance; Evaluation of the PrintSTEP Pilot Program (August 2006). http://www.epa.gov/compliance/resources/reports/assistance/printstepevaluation.pdf | | | | |
| 113 | 2005 | INECE Secretariat Staff | Penalties and Other Remedies for Environmental Violations: An Overview | Paper provides an overview of the functional features of penalties and other remedies available to legislators, regulators, and judges to enforce regulations and deter noncompliance. |
| INECE Secretariat Staff; <i>Penalties and Other Remedies For Environmental Violations: An Overview</i> ; Seventh International Conference on Environmental Compliance and Enforcement, pp. 299-305. (April 2005). http://www.inece.org/conference/7/vol1/48_INECE%20SECRETARIAT%20STAFF.pdf | | | | |
| 114 | 2005 | Kaniaru (INECE) | The Role of Institutions and Networks in Environmental Enforcement | Per the title, paper discusses the role of institutions and networks in environmental enforcement at the local, national, and international levels. |
| Kaniaru, D.; <i>The Role of Institutions and Networks in Environmental Enforcement</i> ; Seventh International Conference on Environmental Compliance and Enforcement, INECE Conference Paper, pp. 1-5. (April 2005). http://www.inece.org/conf/proceedings2/10-Role%20of%20Institutions.pdf | | | | |

Topic: Compliance and Enforcement Design Principles and Strategies Including Audit Policies

| # | Year | Author | Title | Summary |
|--|------|---------------------|---|---|
| 115 | 2005 | Paddock (INECE) | Strategies and Design Principles for Compliance and Enforcement | Article explores evolution of compliance and enforcement program design principles, primarily in the United States, with a focus on the increasing use of strategic planning to deploy limited compliance and enforcement resources on priority problems. Author discusses importance of looking beyond traditional tools and considering roles economics and values can play in holding regulated entities accountable for their environmental behavior. |
| Paddock, Leroy; <i>Strategies and Design Principles for Compliance and Enforcement</i> ; INECE Conference Paper, pp. 67-72 (April 2005). http://www.inece.org/conference/7/vol1/12_Paddock.pdf | | | | |
| 116 | 2005 | Stafford | Does Self-Policing Help the Environment? EPA's Audit Policy and Hazardous Waste Compliance | Analysis examines the effect of EPA and state audit policies on hazardous waste compliance. It finds state audit and self-policing policies appear to decrease the probability of violation. Some increase in compliance may be attributed to inspection targeting changes but it appears compliance increases even when the probability of inspection decreases, suggesting facilities that audit are able to identify and correct problems before they become violations. |
| Stafford, S.; <i>Does Self-Policing Help the Environment? EPA's Audit Policy and Hazardous Waste Compliance</i> ; Vermont Journal of Env. Law, Vol. 6 (2005). http://www.vjel.org/articles/articles/Stafford11FIN.htm | | | | |
| 117 | 2005 | Stretesky & Gabriel | Self-Policing and the Environment: Predicting Self-Disclosure of Clean Air Act Violations Under the U.S. EPA's Audit Policy | Funded in part through an EPA ORD STAR Grant, this study uses a case control design to determine factors associated with the odds of disclosing a CAA violation under EPA's Audit Policy. Findings include that larger companies are more likely to use the Policy because they violate more requirements. Therefore, Audit Policy use may expand the number of violations known to EPA. |
| Stretesky, P. & Gabriel, J.; <i>Self-Policing and the Environment: Predicting Self-Disclosure of Clean Air Act Violations Under the U.S. EPA's Audit Policy</i> ; Soc. & Nat. Resources 18:871-887 (2005). http://www.ingentaconnect.com/content/routledg/usnr/2005/00000018/00000010/art00003 | | | | |

Topic: Compliance and Enforcement Design Principles and Strategies Including Audit Policies

| # | Year | Author | Title | Summary |
|--|------|------------|---|--|
| 118 | 2005 | Stretesky | Identifying Methods for Improving the Effectiveness of Audit Policies and Laws | ORD STAR Grant Final Report. Study suggests that letters informing companies of sector initiatives are the sole effective means of promoting increased Audit Policy usage. Other findings include that large companies are more likely to disclose than small ones and that disclosures are more likely to involve relatively minor violations than serious ones such as those EPA normally discovers through inspections. |
| Stretesky, P.; <i>Identifying Methods for Improving the Effectiveness of Audit Policies and Laws</i> ; STAR Grant Final Report (2005). http://cfpub1.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/5434/report/F | | | | |
| 119 | 2005 | Stretesky | Self-Policing and the Environment: Predicting Self-Disclosure of Environmental Violations Under the U.S. EPA's Audit Policy | Article submitted to Criminology in July 2005. Content overlaps with the two preceding reports (<i>see above</i> ## 117 and 118). |
| Stretesky, P.; <i>Self-Policing and the Environment: Predicting Self-Disclosure of Environmental Violations Under the U.S. EPA's Audit Policy</i> (submitted to Criminology in July 2005). [available from author] | | | | |
| 120 | 2004 | Lee & Frey | Audit Immunity Laws and Self-Disclosure Policies: A State-by-State Comparison | Article analyzes legislative and administrative methods used by the states and federal government to provide immunity from prosecution, and/or penalty mitigation, for voluntarily-disclosed violations. |
| Lee, J. & Frey, B.; <i>Audit Immunity Laws and Self-Disclosure Policies: A State-by-State Comparison</i> ; BNA Environment Reporter (July 9, 2004). [available from authors] | | | | |

Topic: Compliance and Enforcement Design Principles and Strategies Including Audit Policies

| # | Year | Author | Title | Summary |
|--|------|----------------|--|--|
| 121 | 2004 | Nyborg & Telle | The Role of Warnings in Regulation: Keeping Control With Less Punishment | Paper discusses the role of warnings in enforcement. Authors offer opinions on how and when regulators with limited regulatory budgets can make efficient use of warnings. |
| Nyborg, K. & Telle, K.; <i>The Role of Warnings in Regulation: Keeping Control With Less Punishment</i> ; Journal of Public Economics, Vol. 88(12), pp. 2801-2816 (2004). Equivalent version (2003): http://www.joensuu.fi/taloustieteet/ott/scandale/helsinki/pdf/telle.pdf | | | | |
| 122 | 2004 | OECD | Economic Aspects of Environmental Compliance Assurance | Paper presents outcome of discussions on the design of optimal enforcement strategies and tools to maximize environmental benefits and minimize costs to regulators and the regulated community. Participants shared experiences and ideas and confirmed the need for more empirical analysis of compliance rates. |
| OECD; <i>Economic Aspects of Environmental Compliance Assurance – Proceedings from the OECD Global Forum on Sustainable Development</i> (2004). http://www.oecd.org/dataoecd/15/16/37719119.pdf | | | | |
| 123 | 2003 | Firestone | Enforcement of Pollution Laws and Regulations and Analysis of Forum Choice | Paper analyzes how agencies behave when making environmental enforcement venue choices. It reviews the literature on environmental targeting and sanctions and reports on an analysis of 325 random 1990-1997 penalty actions. |
| Firestone, J.; <i>Enforcement of Pollution Laws and Regulations And Analysis of Forum Choice</i> ; Harvard Environmental Law Review, Vol. 27, No. 1., pp. 105-176 (2003). http://www.ocean.udel.edu/cms/jfirestone/PollutionEnforcement_HELR_JF_2003.pdf | | | | |

Topic: Compliance and Enforcement Design Principles and Strategies Including Audit Policies

| # | Year | Author | Title | Summary |
|--|------|-------------------------|--|---|
| 124 | 2003 | Rechtschaffen & Markell | Reinventing Environmental Enforcement and the State/Federal Relationship | In this Environmental Law Institute-published book, the authors describe the evolution of environmental enforcement and state-federal relationships from the mid-1980s to the present. They advance recommendations for improving EPA's perceived lax and inconsistent oversight of state enforcement performance. |
| Rechtschaffen, C. & Markell, D.; <i>Reinventing Environmental Enforcement and the State/Federal Relationship</i> ; Environmental Law Institute (2003). http://www.elistore.org/books_detail.asp?ID=10800 | | | | |
| 125 | 2002 | Friesen | Targeting Enforcement to Improve Compliance With Environmental Regulations | Theoretical derivation of inspection-minimizing targeting scheme. Firms are moved at random into the target group; escape occurs only when inspections demonstrate compliance. This scheme, called optimal targeting, is said to reduce inspection costs as compared to the Harrington model of moving firms into the target group based on compliance record. Allowing escape from the target group under appropriate conditions is found to enhance deterrence. |
| Friesen, L.; <i>Targeting Enforcement to Improve Compliance With Environmental Regulations</i> ; Journal of Environmental Economics and Management, Vol. 46, No. 1, pp. 72-85 (Feb. 2002). http://www.ingentaconnect.com/content/els/00950696/2003/00000046/00000001/art00033 | | | | |
| 126 | 2002 | Rousseau & Proost | The Cost Effectiveness of Environmental Policy Instruments in the Presence of Imperfect Compliance | Theoretical analysis using a static partial equilibrium framework to study different combinations of regulatory instruments (taxes, standards, etc.) and enforcement instruments (e.g., civil and criminal fines). Findings include that emission taxes are not necessarily the most cost-effective instrument. |
| Rousseau, S. & Proost, S.; <i>The Cost Effectiveness of Environmental Policy Instruments in the Presence of Imperfect Compliance</i> ; Center for Economic Studies Working Paper Series, Belgium (June 2002). http://www.econ.kuleuven.be/ete/downloads/ete-wp02-04.pdf | | | | |

Topic: Compliance and Enforcement Design Principles and Strategies Including Audit Policies

| # | Year | Author | Title | Summary |
|---|------|-----------|--|--|
| 127 | 2001 | Gottinger | Incentive Compatible Environmental Regulation | Theoretical analysis of impact of asymmetry of compliance cost information between regulators and firms on regulatory development, monitoring, and enforcement. Enforcement considerations are shown to distort downward the pollution abatement requirements mandated for firms. |
| <p>Gottinger, H. W.; <i>Incentive Compatible Environmental Regulation</i>; Journal of Environmental Management. Vol. 63, No. pp. 163-180 (April 2001). http://www.ingentaconnect.com/content/ap/ev/2001/00000063/00000002/art00468</p> | | | | |
| 128 | 2001 | USEPA | Water Enforcement: State Enforcement of CWA Dischargers Can Be More Effective | OIG audit. Objective of the audit was to determine whether state enforcement of CWA discharge programs protects human health and the environment. The OIG evaluated state enforcement of discharge programs in three Regions, evaluated one EPA-approved state program within each Region, and took into account information from other five state audits in developing recommendations. |
| <p>USEPA Office of Inspector General; <i>Water Enforcement: State Enforcement of Clean Water Act Dischargers Can Be More Effective</i>; Report No.2001-P-00013 (2001). http://www.house.gov/georgemiller/cwaenforce.pdf</p> | | | | |
| 129 | 2000 | Markell | The Role of Deterrence-Based Enforcement In A “Reinvented” State/Federal Relationship: The Divide Between Theory and Reality | Author reviews EPA’s compliance goals and programs and associated Inspector General and Government Accountability Office (GAO) reviews. Strategies are suggested for bridging the divide between the federal government’s promise of consistently applied deterrence-based schemes and the reality found by OIG and GAO. |
| <p>Markell, D.; <i>The Role of Deterrence-Based Enforcement In A “Reinvented” State/Federal Relationship: The Divide Between Theory and Reality</i>; 24 Harvard Environmental Law Review 1 (2000). [web version not located]</p> | | | | |

Topic: Compliance and Enforcement Design Principles and Strategies Including Audit Policies

| # | Year | Author | Title | Summary |
|--|------|----------------------|---|--|
| 130 | 2000 | Pfaff & Sanchirico | Environmental Self-Auditing: Setting the Proper Incentives for Discovery and Correction of Environmental Harm | Paper proposes conditioning fines on firms' investigative efforts. Three observable proxies are proposed for this purpose which authors claim are distinct from EPA's Audit Policy conditions: manner of detection by regulator; firms' own disclosure; and firms' observed corrective actions. |
| <p>Pfaff, A. & Sanchirico, C. W.; <i>Environmental Self-Auditing: Setting the Proper Incentives for Discovery and Correction of Environmental Harm</i>; Journal of Law, Economics, and Organization, Vol. 16 (1), pp. 189-208 (2000). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=198827</p> | | | | |
| 131 | 2000 | Polinsky & Shavell | The Economic Theory of Public Enforcement of Law | Analysis of optimal enforcement through sanctions such as fines and imprisonment. Authors ask how much of society's resources should be devoted to enforcement and at what levels should sanctions be set. Factors considered include impact of societal costs of punishing violators, mistakes made in enforcement, deterrence considerations, principal-agent relationships, settlements, self reporting, repeat offenders, imperfect knowledge about the probability and magnitude of fines, and incapacitation of offenders. |
| <p>Polinsky, A. M. & Shavell, S.; <i>Economic Theory of Public Enforcement of Law</i>, Journal of Economic Literature, Vol. 38, No. 1, pp.45-76 (2000). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=93709 Full pre-publication version (1999): http://siepr.stanford.edu/papers/pdf/99-12.pdf</p> | | | | |
| 132 | 2000 | Thomas, Frey & Daves | Crafting Superior Environmental Enforcement Solutions | Monograph examines creative use by prosecutors, regulators, and industry of environmental auditing, pollution prevention techniques, and EMSs to resolve enforcement actions |
| <p>Thomas, W., Frey, B. & Daves, F.; <i>Crafting Superior Environmental Enforcement Solutions</i>; Env. Law Inst. (August 2000). http://www.elistore.org/books_detail.asp?ID=67</p> | | | | |

Topic: Compliance and Enforcement Design Principles and Strategies Including Audit Policies

| <i>#</i> | <i>Year</i> | <i>Author</i> | <i>Title</i> | <i>Summary</i> |
|--|-------------|-----------------|--|--|
| 133 | 1999 | Heyes & Rickman | Regulatory Dealing - Revisiting the Harrington Paradox | To explain why firms comply most of the time despite limited enforcement and relatively low penalties (Harrington paradox), authors offer a “regulatory dealing” model in which the agency uses tolerance in some contexts to induce increased compliance in others. Model is used also to consider and analyze impact of growing trend towards citizen suits and non-governmental organization (NGO) enforcement. |
| <p>Heyes, Anthony & Rickman, Neil; <i>Regulatory Dealing-Revisiting the Harrington Paradox</i>; Journal of Public Economics, Vol. 72, pp. 361-378 (1999). http://www.ingentaconnect.com/content/els/00472727/1999/00000072/00000003/art00098;jsessionid=5atqmtldkqk2t.alice</p> | | | | |

Topic: Information Disclosure and Use (Mandatory & Voluntary)

| # | Year | Author | Title | Summary |
|---|------|---------------|---|---|
| 134 | 2005 | Bui | Public Disclosure of Private Information as a Tool for Regulating Environmental Emissions: Firm-Level Responses by Petroleum Refineries to the Toxics Release Inventory | Using a micro-level data set that links TRI releases to plant level Census data, the author studies plant-level behavior, exploiting state variation in toxics regulations and exploring relationship between TRI releases and concomitant regulation of non-toxic pollutants. Findings suggest the most probable mechanism through which TRI reporting may induce firms to clean up is local and state governmental use of TRI disclosures with the benefits of command and control regulation of non-toxic pollutants being underestimated. |
| <p>Bui, L.; <i>Public Disclosure of Private Information as a Tool for Regulating Environmental Emissions: Firm-Level Responses by Petroleum Refineries to the Toxics Release Inventory</i>; Brandeis Univ. Working Paper Series (June 2005). http://ideas.repec.org/p/cen/wpaper/05-13.html</p> | | | | |
| 135 | 2005 | Dixon, et. al | The Role of Environmental Initiatives in Encouraging Companies to Engage in Environmental Reporting | Review of international disclosure standards, including ISO 14000, EMAS, and BS 7750. Authors cite need to develop a generally-accepted environmental reporting framework and propose nine relevant requirements. |
| <p>Dixon, R., Mousa, G. & Woodhead, A.; <i>The Role of Environmental Initiatives in Encouraging Companies to Engage in Environmental Reporting</i>; European Management Journal, Vol. 23, No. 6, pp. 702-716 (2005). http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V9T-4J2V4BS-D&_user=14684&_coverDate=12%2F31%2F2005&_alid=531846929&_rdoc=1&_fmt=summary&_orig=search&_cdi=5907&_sort=d&_docanchor=&view=c&_ct=1&_acct=C00001678&_version=1&_urlVersion=0&_userid=14684&md5=ab73d37ad1dfb7853c3cc0b4d3b40beb</p> | | | | |
| 136 | 2005 | Killmer | Designing Mandatory Disclosure to Promote Synergies Between Public and Private Enforcement | Article describes the role of mandatory information disclosure in addressing limitations of command-and-control regulation and government enforcement. Role and limits of market pressure on firms are also discussed. |
| <p>Killmer, A. B.; <i>Designing Mandatory Disclosure to Promote Synergies Between Public and Private Enforcement</i>; INECE Conference Paper (April 2005). http://www.inece.org/conference/7/vol2/55_Killmer.pdf</p> | | | | |

Topic: Information Disclosure and Use (Mandatory & Voluntary)

| # | Year | Author | Title | Summary |
|--|------|------------------|--|---|
| 137 | 2005 | Malloy | Disclosure Stories | Article examines use of disclosure as an enforcement tool and the goals and structures of disclosure regimes. The effectiveness of two types of disclosure are analyzed: binary (firm discloses when it determines noncompliance) and fuzzy (firm discloses when it lacks a basis for determining compliance). Article further considers social, motivational, and cognitive factors that cause firm managers to engage in strategic noncompliance. |
| Malloy, T.; <i>Disclosure Stories</i> ; 32 Florida State Univ. Law Rev. 617-72 (2005). http://www.law.fsu.edu/journals/lawreview/downloads/322/Malloy.pdf | | | | |
| 138 | 2004 | Gouveiaa, et al. | Promoting the Use of Environmental Data Collected by Concerned Citizens Through Information and Communication Technologies | Analysis of the role of information and communications technologies in developing a system of collaborative monitoring to promote the use of volunteer-collected data. Author finds that citizen involvement in environmental monitoring increases the amount of data collected and allows for improved data integration |
| Gouveiaa, C., et al.; <i>Promoting the Use of Environmental Data collected by Concerned Citizens through Information and Communication Technologies</i> ; Journal of Environmental Management; Vol. 71, No. 2, pp. 135-154 (2004). http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=15135948&dopt=Abstract | | | | |
| 139 | 2002 | Foulon, et al. | Incentives for Pollution Control: Regulation or Information? | Authors perform an empirical analysis of the impact of both traditional enforcement and information strategies within a single program using 1987 to 1996 plant-level annual data on fifteen Canadian pulp and paper plants. Findings include that the public disclosure of information on environmental performance creates strong additional pollution control incentives. |
| Foulon, J., Lanoie, P. & Laplante, B.; <i>Incentives for Pollution Control: Regulation or Information?</i> ; Journal of Environmental Economics and Management, Vol. 44, No. 1, 69–187 (2002). http://www.ingentaconnect.com/content/ap/ee/2002/00000044/00000001/art01196 | | | | |

Topic: Information Disclosure and Use (Mandatory & Voluntary)

| # | Year | Author | Title | Summary |
|--|------|------------------|---|---|
| 140 | 2001 | Cohen | Information as a Policy Instrument in Protecting the Environment: What Have We Learned? | Author examines existing literature on the impacts of environmental information programs, considers several different types of potential future policy initiatives, and identifies areas where additional research would be helpful. |
| Cohen, M. A.; <i>Information as a Policy Instrument in Protecting the Environment: What Have We Learned?</i> ; Environmental Law Reporter, Vol. 31, pp. 10425-31 (April 2001). [web version not located] | | | | |
| 141 | 2001 | Franco | Corporate Environmental Disclosure: Opportunities to Harness Market Forces to Improve Corporate Environmental Performance | Author analyzes opportunities to harness market forces, in the form of corporate environmental disclosures, to improve environmental performance. Theoretical considerations and examples are reviewed and considered, including SEC reporting requirements and accounting options. |
| Franco, N.; <i>Corporate Environmental Disclosure: Opportunities to Harness Market Forces to Improve Corporate Environmental Performance</i> ; ABA Section on Env., Energy, and Resources (2001). http://www.rosefdn.org/images/EPA.Disclosure.Study.pdf | | | | |
| 142 | 2000 | Fung & O'Rourken | Reinventing Environmental Regulation From the Grassroots Up: Explaining and Expanding the Success of the TRI | Literature review and discussion of the uses of the TRI, how it works, efficiency considerations, how TRI relates to regulatory accountability, and the effect of TRI release information on firm management and stock values. Authors argue that TRI has achieved regulatory success by creating a mechanism of "populist max-min regulation." |
| Fung, A. & O'Rourken, D.; <i>Reinventing Environmental Regulation from the Grassroots Up: Explaining and Expanding the Success of the Toxics Release Inventory</i> ; Environmental Management, Vol. 25(2), pp. 115-127 (2000). http://nature.berkeley.edu/orourke/PDF/tri.pdf | | | | |

Topic: Information Disclosure and Use (Mandatory & Voluntary)

| # | Year | Author | Title | Summary |
|---|------|----------------|---|--|
| 143 | 1999 | Khanna & Damon | EPA's Voluntary 33/50 Program: Impact on Toxic Releases and Economic Performance of Firms | Empirical and theoretical review of the 33/50 program. Participation in program led to a statistically significant decline in toxic releases from 1991 to 1993. Program also had a statistically significant negative impact on firms' current return on investment but the opposite on the firms' expected long-term profitability. |
| <p>Madhu, K. & Damon, L.; <i>EPA's Voluntary 33/50 Program: Impact on Toxic Releases and Economic Performance of Firms</i>; Journal of Environmental Economics and Management, Vol. 37, pp., 1-25 (1999). [web version not located]</p> | | | | |

Topic: Emissions Trading and Compliance

| # | Year | Author | Title | Summary |
|---|------|---------------------------|---|--|
| 144 | 2005 | Davies (INECE) | The Role of Compliance and Enforcement of Emissions Trading Schemes | Paper discusses the use of emission trading schemes to achieve environmental goals. It deals specifically with compliance and enforcement of such schemes, drawing from lessons learned implementing the European Union’s Greenhouse Gas Emissions Trading Scheme. |
| Davies, N.; <i>The Role of Compliance and Enforcement of Emissions Trading Schemes</i> ; 7th International Conference on Environmental Compliance and Enforcement; INECE Conference Paper, pp. 259-263.(April 2005). http://www.inece.org/conference/7/vol1/43_Davies.pdf | | | | |
| 145 | 2005 | Kruger & Egenhofer | Confidence Through Compliance in Emissions Trading Markets | Article discusses emissions trading as a governance strategy that can create incentives for firms to cut greenhouse gas (GHG) emissions and spur technological innovation but only with high levels of compliance. Compliance hinges on robust and effective strategies for monitoring, reporting, and verification, where confidence in the system relies on timely and accurate information on emissions levels, allowance holdings, and trades. |
| Kruger, J. & Egenhofer, C.; <i>Confidence Through Compliance in Emissions Trading Markets</i> ; prepared for INECE’s Confidence Through Compliance in Emission Trading Markets Workshop;(Nov. 2005). http://www.inece.org/emissions/bkgdPaperETnov05%5B1%5D.pdf | | | | |
| 146 | 2005 | Stone & Zaelke (INECE) | The Essential Role of Compliance in Emissions Trading Schemes | High compliance is essential to the success of emissions trading schemes. The near perfect compliance in the United States’ SO ₂ program is presumed to be due to the continuous monitoring that makes it easy to detect violations. Authors discusses trading system design, monitoring, and enforcement considerations. |
| Stone, S. J. & Zaelka, D.; <i>The Essential Role of Compliance in Emissions Trading Schemes</i> ; 7th International Conference on Environmental Compliance and Enforcement; INECE Conference Paper, pp. 265-270 (April 2005). http://www.inece.org/conference/7/vol1/44_Stone_Zaelke.pdf | | | | |

Topic: Emissions Trading and Compliance

| # | Year | Author | Title | Summary |
|--|------|--------------------|--|--|
| 147 | 2004 | Rousseau & Proost | The Relative Efficiency of Market-Based Environmental Policy Instruments with Imperfect Compliance | Paper studies the relative cost efficiency of three market-based instruments: emission taxes, tradable permits, and output taxes. Including monitoring and enforcement aspects, and more specifically fines, into the model shows that the relative position of grandfathered tradable permits vis-à-vis emission taxes improves considerably when allowing for incomplete compliance. |
| <p>Rousseau, S. & Proost, S.; <i>The Relative Efficiency of Market-Based Environmental Policy Instruments with Imperfect Compliance</i>; Katholieke Universiteit Leuven; Center for Economic Studies; Energy, Transport and Environment Working Paper Series (2004) http://www.econ.kuleuven.ac.be/ew/academic/energmil/downloads/ete-wp-2004-15.pdf</p> | | | | |
| 148 | 1999 | Stranlund & Dhanda | Endogenous Monitoring and Enforcement of a Transferable Emissions Permit System | Analysis of monitoring and enforcement considerations in a transferable emissions permit system. Authors consider how a budget-constrained enforcement authority seeking to minimize noncompliance should allocate its monitoring and enforcement among heterogeneous firms. |
| <p>Stranlund, J. & Dhanda, K; <i>Endogenous Monitoring and Enforcement of a Transferable Emissions Permit System</i>, Journal of Environmental Economics and Management, Vol. 38, 267-282. (1999). http://www.sciencedirect.com/science/article/B6WJ6-45GMHBB-2/2/47d2680f8fd232201ff2ebdfec398c81</p> | | | | |

Topic: Environmental Management Systems and Other Management Issues and Tools

| # | Year | Author | Title | Summary |
|---|------|-----------------------------|---|---|
| 149 | 2006 | Coglianesse & Nash | Leveraging the Private Sector – Management-Based Strategies for Improving Environmental Performance | Authors of <i>Regulating from the Inside</i> (see # 175) address followup environmental management issues. Book consists of papers commissioned from an array of experts, many of whom authored articles summarized in this table, on management-based strategies and their relationship to mandates, regulations, incentives, and pressures. |
| Coglianesse, C. & Nash, J.; <i>Leveraging the Private Sector – Management-Based Strategies for Improving Environmental Performance</i> ; Resources for the Future (RFF) Press (2006). http://www.rff.org/rff/RFF_Press/CustomBookPages/Leveraging-the-Private-Sector.cfm | | | | |
| 150 | 2006 | Env. Systems Update Journal | Preliminary Findings Point to Green for ISO 14001 Certification | Article present the preliminary results of a survey of all U.S. ISO 14001-certificate holders, conducted by the Wharton Risk Management and Decision Processes Center, on the value of ISO 14001 certification. Internal-to-the-firm and external benefits are considered. |
| Environmental Systems Update Journal; <i>Preliminary Findings Point to Green for ISO 14001 Certification</i> ; Environmental Systems Update, Vol. 11, No. 1, (2006). http://grace.wharton.upenn.edu/risk/projects/ISO14001Article.pdf Additional project information: http://grace.wharton.upenn.edu/risk/projects/iso14001.html | | | | |
| 151 | 2006 | Russo | Explaining the Impact of ISO 14001 on Emissions Performance: A Dynamic Capabilities Perspective on Process and Learning | Submitted for publication. Exploration of the impact of ISO 14001 certification on 1996 to 2001 emissions by a sample of 242 U.S. electronics plants. Results include: presence of an EMS associated with higher emissions; being one of the earliest adopters was associated with lower emissions; the longer a facility operated under ISO 14001, the lower its emissions; emissions rose industry-wide in the recessionary year of 2001. |
| Russo, M. V.; <i>Explaining the Impact of ISO 14001 on Emissions Performance: A Dynamic Capabilities Perspective on Process and Learning</i> (Aug. 2006). [submitted for publication] | | | | |

Topic: Environmental Management Systems and Other Management Issues and Tools

| # | Year | Author | Title | Summary |
|---|------|-----------------------------------|--|--|
| 152 | 2006 | United Kingdom Environment Agency | remas – Linking Environmental Management and Performance (Newsletter Final Issue) | Report on outcomes of completed 3-year United Kingdom Environment Agency (UKEA) project to examine whether EMSs implemented pursuant to the EMAS and other established standards lead to improved environmental performance. The project compares data from sites with formal, informal, and no EMSs. |
| remas; Project Results; Final Issue (2006). http://remas.ewindows.eu.org/pdf/newsletters/12.pdf | | | | |
| 153 | 2006 | USEPA | Financial Incentives for Environmental Management Systems (EMS) – Project Findings from Phase I | Report describes the results of a literature search on connections between EMS and financial value, examines how insurance, equity, and fixed income investing experts include or do not include EMS and environmental performance in their analyses, and considers examples where EMS implementation resulted in tangible financial benefits. Emerging trends in the field are identified and discussed. |
| USEPA Financial Market Incentives for EMS Steering Group; <i>Financial Incentives for Environmental Management Systems (EMS) – Project Findings from Phase I</i> ; (Dec. 2006) [publication forthcoming at www.epa.gov/ems ; see also http://www.epa.gov/ems/resources/pubs/index.htm] | | | | |
| 154 | 2005 | Andrews, et al. | Environmental Management Systems: Do Formalized Management Systems Produce Superior Performance? | EPA STAR Grant Final Report. Primary data collected via a 2003 survey of plant managers in four U.S. industrial sectors. Secondary data obtained from TRI and Integrated Data for Enforcement Analysis (IDEA) databases. Findings include that facilities with both EMS mandates and EMSs in place were more likely to report performance improvements but differences were modest. There were no significant air or water pollution improvements. |
| Andrews, R., et al.; <i>Environmental Management Systems: Do Formalized Management Systems Produce Superior Performance?</i> ; EPA-NCER STAR Grant Final Report (2005). http://cfpub1.epa.gov/ncer/abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/1951/report/F | | | | |

Topic: Environmental Management Systems and Other Management Issues and Tools

| # | Year | Author | Title | Summary |
|--|------|-------------------|---|---|
| 155 | 2005 | Delmas & Toffel | Institutional Pressures and Environmental Strategies | Authors propose that how organizations distribute power across their internal departments leads to different institutional priorities and thus different management practices. External constituents are hypothesized to be particularly influential. Survey results and archival data on nearly 500 facilities were determined to support the hypotheses. |
| Delmas, M. & Toffel, M.; <i>Institutional Pressures and Environmental Strategies</i> ; Center for Responsible Business Working Paper Series, University of California, Berkeley (Dec. 2005). http://repositories.cdlib.org/cgi/viewcontent.cgi?article=1033&context=crb | | | | |
| 156 | 2005 | King, et al. | The Strategic Use of Decentralized Institutions: Exploring Certification With the ISO 14001 Management Standard | Authors analyze the strategic motives of individual actors in becoming ISO 14001 certified. Firms are more likely to seek certification when partners lack credible information or fear supplier opportunism. Management systems are associated with performance improvement but no evidence is found that the certification process itself leads to improvement or signals superior performance. |
| King, A., Lenox, M. & Terlaak, A.; <i>The Strategic Use of Decentralized Institutions: Exploring Certification With the ISO 14001 Management Standard</i> ; Academy of Management Journal 48(6): 1091-106 (2005). http://faculty.fuqua.duke.edu/~mlenox/papers/iso_amj.pdf | | | | |
| 157 | 2005 | Potoski & Prakash | Covenants with Weak Swords: ISO 14001 and Facilities' Environmental Performance | Analysis of more than 3000 CAA major sources suggests that ISO 14001-certified facilities reduce their emissions more than non-certified facilities. This is the case even after controlling for emission and compliance histories and other factors. |
| Potoski, M. & Prakash, A.; <i>Covenants with Weak Swords: ISO 14001 and Facilities' Environmental Performance</i> ; Journal of Public Policy Analysis and Management, Vol. 24, No. 4, pp. 745-769 (2005). http://faculty.washington.edu/aseem/jppam.pdf | | | | |

Topic: Environmental Management Systems and Other Management Issues and Tools

| # | Year | Author | Title | Summary |
|---|------|----------------------------|--|---|
| 158 | 2005 | Wyeth & Silberman | EPA's New Strategy for Determining the Role of EMSs in Regulatory Programs | Authors explain the Strategy in the subject title. Specifics will interest persons considering or designing projects to test EMS effectiveness in the context of regulatory programs. |
| <p>Wyeth, G. & Silberman, J.; <i>EPA's New Strategy for Determining the Role of EMSs in Regulatory Programs</i>; ABA Innovations Subcommittee Newsletter (Winter 2005). http://www.abanet.org/environ/committees/innovation/newsletter/feb05/innovation0205.pdf</p> | | | | |
| 159 | 2004 | Anton & Khanna | Incentives for Environmental Self-Regulation and Implications for Environmental Protection | Count data and quantile regression analyses reveal that liability threats and pressures from consumers, investors, and the public motivate EMS adoption and that consumer preferences are particularly effective in increasing EMS comprehensiveness. A more comprehensive EMS leads to lower toxic emissions per unit output, particularly for firms with a higher past pollution intensity. Regulatory and market-based pressures affect toxic releases indirectly by encouraging institutional environmental management changes. |
| <p>Anton, W., Deltas, G., & Khanna, M.; <i>Incentives for Environmental Self-Regulation and Implications for Environmental Protection</i>; 48 Journal of Env. Eco's. and Management 632-654 (2004). https://netfiles.uiuc.edu/deltas/www/PublishedPaperArchive/Journal_of_Environmental_Economics_and_Management_2004.pdf</p> | | | | |
| 160 | 2004 | Darnall & Pavlichev (OECD) | Environmental Policy Tools & Firm-level Management Practices in the U.S. | Study is part of larger OECD project involving seven OECD countries in which 489 U.S. facilities participated. Report addresses why facilities introduce EMSs and undertake specific types of environmental investments and innovations and explores links between financial and environmental performance. |
| <p>Darnall, N. & Pavlichev, A. (OECD); <i>Environmental Policy Tools & Firm-level Management Practices in the U.S.</i>; (May 2004). http://www.oecd.org/dataoecd/1/59/35590060.pdf</p> | | | | |

Topic: Environmental Management Systems and Other Management Issues and Tools

| # | Year | Author | Title | Summary |
|---|------|--------------------|---|--|
| 161 | 2004 | Housman | Environmental Management Systems in Federal Enforcement Settlements | Author analyzes data and information on the use of EMSs in federal enforcement settlements. The data and information are based on interviews of the federal and industry parties who developed the settlements. Article identifies areas where EMSs have led to improved practices and discusses lessons learned. |
| <p>Housman, V.; <i>Environmental Management Systems in Federal Enforcement Settlements</i>; Env. Law Reporter News & Analysis, Vol. 34, Part 5, 10451-10456 (2004). http://direct.bl.uk/bld/PlaceOrder.do?UIN=149592646&ETOC=RN&from=searchengine</p> | | | | |
| 162 | 2004 | Lave & Hendrickson | Environmental Management Systems: Informing Organizational Decisions | STAR Grant Final Report. Nine U.S. multinationals surveyed to determine their use of EMSs and environmental information. Authors also conducted macro-level analysis of environmental performance of 50 U.S. ISO-certified automobile assembly facilities to other such facilities. Across all measures, virtually no difference was found in the performance of facilities with certified systems compared to those without certified systems and post-certification performance did not indicate continuous improvement. |
| <p>Lave, L. & Hendrickson, C.; <i>Environmental Management Systems: Informing Organizational Decisions</i>; EPA STAR Grant Final Report (2004). http://cfpub1.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/1758/report/F</p> | | | | |
| 163 | 2004 | MacLean | Environmental Management Systems – Do they provide real business value? | Author discusses significance of remarks by President of The Auditing Roundtable that there is little correlation between EMSs and performance. Six supporting EMS research studies are referenced in the article. |
| <p>MacLean, R.; <i>Environmental Management Systems – Do they provide real business value?</i>; Environmental Protection Magazine (2004). http://www.environmental-expert.com/resultarticle4.asp?cid=8707&codi=3067&idproducttype=6&idmainpage=65&level=5</p> | | | | |

Topic: Environmental Management Systems and Other Management Issues and Tools

| # | Year | Author | Title | Summary |
|--|------|------------------------------------|--|--|
| 164 | 2003 | Andrews, et al. (UNC) | Environmental Management Systems: Do They Improve Performance? | Project Final Report sponsored by EPA along with ten state environmental agencies and the Environmental Law Institute (ELI), Multi-State Working Group (MSWG), and Working Group on Environment, Trade and Investment (GETI). Authors analyze longitudinal, real-time, facility-level comparative data from the National Database on Environmental Management to examine the compliance and performance of a range of business and government facilities before, during, and after introduction of an EMS. |
| Andrews, R. et al.; <i>Environmental Management Systems: Do They Improve Performance?</i> ; UNC at Chapel Hill (2003); Project Final Report: Executive Summary: http://www.c2e2.org/documents/completeexecutivesummary.pdf ; Vol's 1 and 2: http://www.fedcenter.gov/kd/Items/actions.cfm?action=Show&item_id=3447&destination=ShowItem | | | | |
| 165 | 2003 | Benbear | Are Management-Based Regulations Effective?: Evidence from State Pollution Prevention Programs | Working Paper. Author analyzes panel data on 31,000+ U.S. manufacturing plants. Analysis suggests that the plants subject to management-based regulation experienced larger decreases in total pounds of toxic chemicals released and were more likely to engage in source reduction activities. |
| Benbear, L. S.; <i>Are Management-Based Regulations Effective?: Evidence from State Pollution Prevention Programs</i> ; Regulatory Policy Program Working Paper No. RPP-2003-21 (2003). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=468799 | | | | |
| 166 | 2003 | Dahlstrom, Howes, Leinster, & Skea | Environmental Management Systems and Company Performance: Assessing the Case for Extending Risk-Based Regulation | Analysis of information on almost 800 sites regulated under the UK's Integrated Pollution Control regime. It demonstrates that having an EMS improves certain procedural aspects of environmental management but does not appear to reduce the likelihood of breaching permit conditions. Policy implications are discussed. |
| Dahlstrom, K., Howes, C., Leinster, P. & Skea, J.; <i>Environmental Management Systems and Company Performance: Assessing the Case for Extending Risk-Based Regulation</i> ; Eur. Env. 13, 187-203 (2003). http://www.environmental-expert.com/articles/article1378/1378.pdf | | | | |

Topic: Environmental Management Systems and Other Management Issues and Tools

| # | Year | Author | Title | Summary |
|---|------|----------------------|---|---|
| 167 | 2003 | ENDS | EMS survey reveals widespread concerns over certification | Report on an opinion survey conducted by ENDS and the Institute of Environmental Management and Assessment revealing significant concerns about EMS effectiveness and the quality of their certification. One in three respondents felt that EMSs do not inherently deliver sustained environmental performance. Nearly half felt that certification bodies are not sufficiently competent. |
| Environmental Data Services Ltd.; <i>EMS survey reveals widespread concerns over certification</i> ; ENDS Report (Dec. 2003). http://inni.pacinst.org/inni/EMS/ems_and_%20performance_Q_results.pdf | | | | |
| 168 | 2003 | Gillard & Wood | Boosting Environmental Performance ... Reducing Regulatory Noncompliance | Article discusses causes of environmental failures, key compliance issues, and methods to address the inefficiency of EMSs. Authors recommend a systematic and comprehensive EMS as the best way for companies to respond to today's regulatory compliance challenges. |
| Gillard, C. F. & Wood, B.; <i>Boosting Environmental Performance ... Reducing Regulatory Noncompliance</i> ; Chemical Engineering, Vol. 110, No. 3, pp. 58-65 (March 2003). http://findarticles.com/p/articles/mi_go2494/is_200303/ai_n7618478 | | | | |
| 169 | 2003 | Rennings, K., et al. | The Influence of the EU EMAS on Environmental Innovations and Competitiveness In Germany: An Analysis on the Basis of Case Studies and a Large Scale Survey | Authors investigate EMAS's effects on environmental innovations and competitiveness in German facilities through 12 in-depth case studies and telephone interviews with 1277 EMAS-validated facilities. Surveys show a positive EMAS influence on environmental process, product, and organizational innovations and diffusion of environmental innovations. |
| Rennings, K., et al.; <i>The Influence of the EU EMAS on Environmental Innovations and Competitiveness In Germany: An Analysis on the Basis of Case Studies and a Large Scale Survey</i> ; ZEW Discussion Paper No. 03-14 (2003). http://www.zew.de/en/publikationen/publikation.php3?action=detail&nr=1837 | | | | |

Topic: Environmental Management Systems and Other Management Issues and Tools

| # | Year | Author | Title | Summary |
|--|------|--------------------------|--|--|
| 170 | 2003 | ten Brink; et al. (IEEP) | ENAP Study - Linking EMS with Permitting, Inspection and Enforcement | Background study for Workshop Report described immediately below (#171). European study links EMS elements with the permit cycle. It discusses incentives such as permit procedure and content simplification, longer permit periods, reduced permit charges, and monitoring, reporting, and inspection incentives, and considers the issue of mandatory vs. voluntary EMSs. |
| ten Brink; et al.; ENAP Study - Linking EMS with Permitting, Inspection and Enforcement; Institute for European Environmental Policy – Background Report (2003). http://www2.vrom.nl/docs/internationaal/w2-15.pdf | | | | |
| 171 | 2003 | FIELD and IEEP | Workshop Report: Joint Workshop to Examine Connections Between EMSs and Permitting, Inspection and Enforcement in Regulation | Results of workshop held to discuss the issues described in the immediately above description of the ENAP Study - Linking EMS with Permitting, Inspection and Enforcement. |
| Foundation for International Law and Development (FIELD) & IEEP; Workshop Report: Joint Workshop to Examine Connections Between EMSs and Permitting, Inspection and Enforcement in Regulation which included the launch of the remas project discussed above in this table (June 11-13, 2003). http://inni.pacinst.org/inni/General/ProceedingEMSsandRegulation.pdf | | | | |
| 172 | 2002 | Khanna, et al. | Corporate Environmental Management: Regulatory and Market-Based Incentives | Authors explore factors explaining the diversity in EMSs using survey data from a sample of S&P 500 firms. The analysis shows that the threat of environmental liabilities, high costs of regulatory compliance, market pressures, and public pressures on firms with high on-site toxic emissions per unit output create incentives for adopting a more comprehensive EMS. |
| Khanna, M., & Anton, W.; <i>Corporate Environmental Management: Regulatory and Market-based Incentives</i> ; Land Economics. Vol. 78, No. 4, pp. 539-558 (Nov. 2002). http://www.ingentaconnect.com/content/wisc/lec/2002/00000078/00000004/art00006 | | | | |

Topic: Environmental Management Systems and Other Management Issues and Tools

| # | Year | Author | Title | Summary |
|--|------|--------------------|---|--|
| 173 | 2002 | UKEA | Environmental Management Systems & Operator Performance at Sites Regulated Under Integrated Pollution Control | Survey and analysis of 843 Integrated Pollution Control (IPC) sites, UKEA Operator and Pollution Risk Appraisal (OPRA) records, and enforcement records. Conclusions include that having an externally-validated ISO 14001 or EMAS EMS is associated with higher overall levels of operator performance but such sites are neither more nor less likely to suffer from incidents, complaints or non-compliance events. |
| UKEA; <i>Environmental Management Systems & Operator Performance at Sites Regulated Under Integrated Pollution Control</i> ; R&D Technical Report P6-017/2/TR (2002). www.turi.org/content/content/download/1050/5090/file/brit.doc | | | | |
| 174 | 2002 | UKEA | Environmental Management Systems and Regulation Project | Investigation of how the UKEA could potentially take account of EMSs within the regulatory framework. Findings include a lack of evidence that certification to an EMS standard will result in improved regulatory performance. This investigation led to the initiation of the remas project referenced above in this table. |
| UKEA; <i>Environmental Management Systems and Regulation Project</i> ; (2002). http://remas.ewindows.eu.org/REMAS/downloads/emsr.pdf | | | | |
| 175 | 2001 | Coglianesse & Nash | Regulating from the Inside – Can Environmental Management Systems Achieve Policy Goals? | Book consists of papers commissioned from an array of experts, many with articles summarized in this table, on EMS history, theories, influencing factors, environmental impacts, and public policy implications. |
| Coglianese, C. & Nash, J.; <i>Regulating from the Inside – Can Environmental Management Systems Achieve Policy Goals?</i> ; RFF Press (2001). http://www.ksg.harvard.edu/coglianesebooks/regulating.htm | | | | |

Topic: Environmental Management Systems and Other Management Issues and Tools

| # | Year | Author | Title | Summary |
|---|------|---------------------------|---|--|
| 176 | 2001 | Kollman & Prakash | Green by Choice? Cross-National Variations in Firms' Responses to EMS-Based Environmental Regimes | Paper seeks to explain cross-national variations in patterns of firm-level adoption of the EMAS and ISO 14001 EMS standards. Characteristics of business-government relations and national policies are explored to explain the differences. |
| <p>Kollman, K. & Prakash, A.; <i>Green By Choice? Cross-National Variations in Firms' Responses to EMS-Based Environmental Regimes</i>; World Politics, Vol. 53, No. 3, pp. 399-430 (2001). http://muse.jhu.edu/cgi-bin/access.cgi?url=/journals/world_politics/v053/53.3kollman.html</p> | | | | |
| 177 | 2000 | IRIS Eco-efficiency Group | Environmental Management Systems – Paper Tiger or Powerful Tool | Assessment of the environmental and economic effectiveness of ISO 14001 and EMAS based on survey questionnaires and interviews with two hundred EMS-certified Swedish companies in 1999. Findings include that half of the companies missed some of their most important environmental aspects and that companies that use environmental indicators to monitor their objectives and targets achieve relatively better environmental performance. |
| <p>IRIS Eco-efficiency Group; Environmental Management Systems – Paper Tiger or Powerful Tool (Dec. 2000). http://www.ivf.se/upload/pdf-filer/IVF-skrifter/skr00828.pdf</p> | | | | |

Topic: International Compliance and Enforcement

| # | Year | Author | Title | Summary |
|---|------|----------------|---|---|
| 178 | 2006 | Markell | Understanding Citizen Perspectives on Government Decision Making Processes as a Way to Improve the Administrative State | Article reviews a framework for assessing citizen satisfaction with decision making processes and applies the framework to assess the Commission for Environmental Cooperation's citizen submissions process. This process empowers citizens to file complaints claiming that a country failed to effectively enforce an environmental law. |
| <p>Markell, D.; <i>Understanding Citizen Perspectives on Government Decision Making Processes as a Way to Improve the Administrative State</i>; Vol. 36 Env. Law 651-708 (2006). http://www.lclark.edu/org/envtl/objects/36-3_markell.pdf</p> | | | | |
| 179 | 2006 | UNEP-DEC | Manual on Compliance with and Enforcement of Multilateral Environmental Agreements | Reference tool structured as an annotated commentary to the United Nations Environment Programme (UNEP) Guidelines on Compliance with and Enforcement of Multilateral Agreements. It provides explanatory text, case studies, checklists, references to additional resources, and annexes with supplementary information. The Manual also highlights experiences from around the world in negotiating, implementing, and enforcing Multilateral Environmental Agreements (MEAs) at the national, regional, and global levels. |
| <p>UNEP/DEC; <i>Manual on Compliance with and Enforcement of Multilateral Environmental Agreements</i>; UNEP (June 2006). http://www.unep.org/dec/docs/UNEP_Manual.pdf</p> | | | | |
| 180 | 2005 | Hunter (INECE) | The Emergence of Citizen Enforcement in International Organizations | Paper describes the emergence of influential environmental and social standards at international financial institutions and the parallel emergence of citizen-based mechanisms to enforce those standards. Such institutions include the International Finance Corporation and Asia Development Bank. |
| <p>Hunter, D. B.; <i>The Emergence of Citizen Enforcement in International Organizations</i>; 7th International Conference on Environmental Compliance and Enforcement; INECE Conference Paper, pp. 229-234 (April 2005). http://www.inece.org/conference/7/vol2/54_Hunter.pdf</p> | | | | |

Topic: International Compliance and Enforcement

| # | Year | Author | Title | Summary |
|---|------|--------------------|---|---|
| 181 | 2005 | Michalak & Schucht | Economic Aspects of Environmental Compliance Assurance | Summary of results of OECD-hosted conference. Issues considered included assessing empirical evidence on how inspectors allocate limited enforcement budgets and identifying approaches for reducing monitoring and enforcement costs. |
| <p>Michalak, K. & Schucht, S.; <i>Economic Aspects of Environmental Compliance Assurance</i>; 7th International Conference on Environmental Compliance and Enforcement; INECE Conference Paper, pp. 23-29 (April 2005). http://www.inece.org/conference/7/vol1/06_Michalak.pdf</p> | | | | |
| 182 | 2004 | Akella & Cannon | Strengthening the Weakest Links – Strategies for Improving the Enforcement of Environmental Laws Globally | Report draws lessons from intensive enforcement research in four biodiversity-rich countries. It quantifies the risks and rewards of illegal activity, identifies a set of common enforcement weaknesses, and recommends three priority areas for global investment to strengthen enforcement. |
| <p>Akella, A. S. & Cannon, J. B.; <i>Strengthening the Weakest Links – Strategies for Improving the Enforcement of Environmental Laws Globally</i>; CCG (2004); http://www.conservation.org/ImageCache/CIWEB/content/programs/policy/ccgenforcementreport_2epdf/v1/ccgenforcementreport.pdf</p> | | | | |
| 183 | 2004 | OECD | Assuring Environmental Compliance | Main volume in series of publications on improving environmental inspectorates in former Soviet countries. The Toolkit is intended to stimulate better inspection criteria and procedures, improve resource allocation decisions, increase staff professionalism, and promote more effective external dialogues and in-country and international cooperation. |
| <p>OECD; <i>Assuring Environmental Compliance - A toolkit for building better environmental inspectorates in Eastern Europe, Caucasus, and Central Asia</i> (2004) http://www.oecd.org/dataoecd/61/62/34499651.pdf</p> | | | | |

Topic: International Compliance and Enforcement

| # | Year | Author | Title | Summary |
|--|------|-----------------|--|---|
| 184 | 2003 | Keohane | Compliance, Reputation, and Domestic Politics | Working paper. Author analyzes a theoretical model of international agreements from military alliances to environmental accords. Analysis highlights the interplay between domestic politics – partisan differences, electoral strength, and “issue linkage” – and international affairs. |
| Keohane, N.; <i>Compliance, Reputation, and Domestic Politics</i> ; Yale School of Management Working Paper (2003). http://www.som.yale.edu/faculty/nok4/files/papers/crdp.pdf | | | | |
| 185 | 2002 | Kaniaru (INECE) | UNEP Governing Council Adopts Guidelines on Compliance With and Enforcement of Multilateral Environmental Agreements | Article assesses then-recently-adopted UNEP guidelines on compliance with and enforcement of MEAs. The guidelines seek to provide a menu of options for countries to strengthen implementation of MEAs and enforcement of domestic laws and rules. |
| Kaniaru, D.; <i>UNEP Governing Council Adopts Guidelines on Compliance with and Enforcement of multilateral Environmental Agreements</i> ; INECE Conference Paper, pp. 1-8 (April 2002). http://www.inece.org/conf/proceedings2/9-UNEP%20Gov%20Council.pdf | | | | |
| 186 | 2002 | Knox (INECE) | Citizen Suits in International Environmental law: The North American Experience | Paper evaluates the effectiveness of alternative measures to promote compliance with international environmental laws. A citizen-directed submissions procedure that allows the public to trigger international review of states’ behavior is favored over traditional methods of adjudication of claims by one state over another. |
| Knox, J.; <i>Citizen Suits in International Environmental Law: The North American Experience</i> ; INECE Conference Paper, pp. 1-16 (April 2002). http://www.inece.org/conf/proceedings2/42-KNOX%20NewALT.pdf | | | | |

Topic: International Compliance and Enforcement

| # | Year | Author | Title | Summary |
|---|------|-------------------------|---|--|
| 187 | 2002 | Mulkey & Chanon (INECE) | National Compliance and Enforcement of International Environmental Treaties | Authors discuss the importance of compliance and enforcement to any environmental regulatory program, especially in the context of effective international relations and treaties. |
| <p>Mulkey, M. & Chanon, K.; <i>National Compliance and Enforcement of International Environmental Treaties</i>. INECE Conference Paper, pp. 1-5 (April 2002). http://www.inece.org/conf/proceedings2/19-Nationalompliance.pdf</p> | | | | |
| 188 | 1999 | Young | Hitting the Mark | Discussion of why some international environmental agreements are more successful than others. Includes consideration of collective action, social practice, and realignment mechanisms. |
| <p>Young, Oran; <i>Hitting the Mark</i>; Environment. Vol. 41, No. 8, pp. 20-29 (Oct. 1999). http://www.findarticles.com/p/articles/mi_m1076/is_8_41/ai_56640447</p> | | | | |

Topic: Relationship of Environmental Compliance and Performance to Business Value and Competitiveness

| # | Year | Author | Title | Summary |
|---|------|------------------|--|--|
| 189 | 2006 | Maxwell & Decker | Voluntary Environmental Investment and Responsive Regulation | Voluntary corporate environmental investments have been rising in recent years. Authors find that motivations include reducing the costs of regulatory compliance and that such investments increase when a regulators acts as a Stackelberg follower in setting its monitoring and enforcement strategy. These additional investments, however, may be socially undesirable, necessitating a restructuring of non-compliance penalties. |
| Maxwell, John W. & Decker, C. S.; <i>Voluntary Environmental Investment And Responsive Regulation</i> ; Environmental and Resource Economics, Vol. 33, pp.425-439 (2006). http://ideas.repec.org/a/kap/enreec/v33y2006i4p425-439.html | | | | |
| 190 | 2006 | Murray, et al. | Do Financial Markets Care About Social and Environmental Disclosure? Further Evidence and Exploration from the UK | Empirical study of relationship between social and environmental disclosure and the financial market performance of the UK's largest companies. No direct relationship between share returns and disclosure was found but the longitudinal data revealed a convincing relationship between consistently high/low returns and the predilection to high/low disclosure. |
| Murray, A., et al.; <i>Do Financial Markets Care About Social And Environmental Disclosure? Further Evidence And Exploration From The UK</i> ; Accounting, Auditing & Accountability Journal, Vol. 19, Issue 2, pp. 228 - 255 (2006). http://www.emeraldinsight.com/Insight/viewContentItem.do?contentType=Article&contentId=1549912 | | | | |
| 191 | 2005 | Johnston | Signaling Social Responsibility: On the Law and Economics of Market Incentives for Corporate Environmental Performance | Working paper. This article analyzes the law and economics of market internalization: the capability of markets to both penalize and reward firms for their environmental, health and safety performance. Market rewards and “sticks” for disclosure of environmental liabilities and opportunities are discussed in context of the Security and Exchange Commission’s (SEC) failure to enforce its own disclosure rules. |
| Johnston, J.; <i>Signaling Social Responsibility: On the Law and Economics of Market Incentives for Corporate Environmental Performance</i> ; Univ. of Pennsylvania - Institute for Law & Economics; Research Paper 05-16 (2005). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=725103 | | | | |

Topic: Relationship of Environmental Compliance and Performance to Business Value and Competitiveness

| # | Year | Author | Title | Summary |
|--|------|-------------------------------|---|--|
| 192 | 2005 | Karpoff & Lott Jr. | The Reputational Penalties for Environmental Violations: Empirical Evidence | Authors find that firms that violate environmental laws suffer statistically significant losses in the market value of firm equity. Because these losses are of similar magnitudes to the legal penalties imposed, however, the authors find no evidence of reputational penalties. |
| Karpoff, J. & Lott Jr., J.; <i>The Reputational Penalties for Environmental Violations: Empirical Evidence</i> ; Journal of Law and Economics, Vol. 48, pp. 653–675 (2005). http://www.journals.uchicago.edu/cgi-bin/resolve?id=doi:10.1086/430806 | | | | |
| 193 | 2005 | NHEEPA | The Contribution of Good Environmental Regulation to Competitiveness | In the context of the European Union’s focus on growth and jobs, this paper reviews the evidence on the links between environmental regulation and competitiveness. It finds that a modern approach to regulation can reduce costs for industry and business, create markets for environmental goods and services, drive innovation, reduce business risk, increase the confidence of the investors and insurers, and yield other positive benefits. |
| Networks of Heads of European Environmental Protection Agencies (NHEEPA); <i>The Contribution of Good Environmental Regulation to Competitiveness</i> (Nov. 2005). http://www.eea.europa.eu/documents/prague_statement/prague_statement-en.pdf | | | | |
| 194 | 2004 | Ganzi, Steedman & Quenneville | Linking Environmental Performance to Business Value: A North American Perspective | Report blends a review of existing research on the business value case with interviews with a small group of recognized experts to establish a baseline of business value case information. Report captures a spectrum of analytical and conceptual environmental and financial performance approaches and indicators. |
| Ganzi, J., Steedman, E. & Quenneville, S.; <i>Linking Environmental Performance to Business Value: A North American Perspective</i> ; Environment Canada (Sept. 2004). http://www.cec.org/files/pdf/ECONOMY/Linking-Env-Performance-BP_en.pdf | | | | |

Topic: Relationship of Environmental Compliance and Performance to Business Value and Competitiveness

| # | Year | Author | Title | Summary |
|--|------|---------------------|--|---|
| 195 | 2004 | Malloy & Sinsheimer | Innovation, Regulation and the Selection Environment | Article focuses on how regulation can be best designed to encourage technological innovation. According to a case study of the dry cleaning sector using surveys and interviews, traditional command-and-control regulation is likely to lead to a broader diffusion of new, beneficial technologies than market-based approaches and at less social cost. This is deemed a cautionary tale for those who support the broad use of market-based incentive strategies. |
| <p>Malloy, T. & Sinsheimer, P.; <i>Innovation, Regulation and the Selection Environment</i>; Univ. of Cal.; Working Paper (2004). http://law.bepress.com/cgi/viewcontent.cgi?article=1589&context=expresso</p> | | | | |
| 196 | 2004 | Nadeau | Estimating the Deterrent Effect of EPA Enforcement Settlements: A Prospective Method and Preliminary Results from One Case | Eastern Research Group, Inc. (ERG) white paper [unpublished]. ERG developed an event study for one high-profile EPA enforcement case settlement: the Willamette Industries Wood Products settlement in July 2000. Reported settlement: \$93.2 million. Associated stock market impact: \$514.1 million loss. This implies that the market penalized Willamette an additional \$420.9 million above and beyond the penalty amount. |
| <p>Nadeau, L.; <i>Estimating the Deterrent Effect of EPA Enforcement Settlements: A Prospective Method and Preliminary Results from One Case</i>; (Eastern Research Group, Inc. (2004) [unpublished/available from author]</p> | | | | |

Topic: Relationship of Environmental Compliance and Performance to Business Value and Competitiveness

| # | Year | Author | Title | Summary |
|---|------|------------------|--|---|
| 197 | 2004 | Filbeck & Gorman | The Relationship Between the Env. and Financial Performance of Public Utilities | Study of twenty-four S&P 500 electric companies from 1996-1998 does not find a positive relationship between holding period returns and an industry-adjusted measure of environmental performance. While there does not appear to be a clearly defined relationship between regulatory climate and a compliance-based measure of environmental performance, evidence is found of a negative relationship between financial returns and more pro-active environmental performance. |
| <p>Filbeck, G. & Gorman, R. F.; <i>The Relationship Between the Environmental and Financial Performance of Public Utilities</i>; Environmental and Resource Economics, Vol. 29, No. 2, pp. 137-157 (2004). http://www.springerlink.com/content/u8t556236r6427j4/</p> | | | | |
| 198 | 2004 | Sulaiman, et al. | The Relations Among Environmental Disclosure, Environmental Performance, and Economic Performance: A Simultaneous Equations Approach | Integrated analysis of the interrelations among (1) environmental disclosure, (2) environmental performance, and (3) economic performance. Empirical review suggests that good environmental performance is significantly associated with good economic performance and also with more extensive quantifiable environmental disclosures of specific pollution measures and occurrences. |
| <p>Sulaiman, A., et al.; <i>The Relations Among Environmental Disclosure, Environmental Performance, and Economic Performance: A Simultaneous Equations Approach</i>; Accounting, Organizations and Society, Vol 29, Issue 5-6, pp. 447-471 (2004). http://ideas.repec.org/a/eee/aosoci/v29y2004i5-6p447-471.html</p> | | | | |
| 199 | 2003 | Aigner, et al. | Beyond Compliance: Sustainable Business Practices and the Bottom Line | Empirical study, based on Agricultural Resource Management Survey data, of relationship between environmental performance and economic efficiency. Key metric in analysis is the total resource costs per output in response to using crop residue management as a best management practice. |
| <p>Aigner, D., Hopkins, J., & Johansson, R.; <i>Beyond Compliance: Sustainable Business Practices and the Bottom Line</i>; American Journal of Agricultural Economics, Vol. 85(5), pp. 1126-1139 (2003). http://papers.ssrn.com/sol3/papers.cfm?abstract_id=474031</p> | | | | |

Topic: Relationship of Environmental Compliance and Performance to Business Value and Competitiveness

| # | Year | Author | Title | Summary |
|--|------|-------------------|--|---|
| 200 | 2003 | Orlitzky, et. al. | Corporate Social and Financial Performance: A Meta Analysis | Meta-analysis of 52 studies, with a total sample size of 33,878 observations, on the relationship between corporate social performance (CSP) and corporate financial performance (CFP). Findings demonstrate that there is a positive association between CSP and CFP across industries and that this link is significant and varies from highly positive to moderately positive. |
| Orlitzky, M., Schmidt, F., Rynes, S.; <i>Corporate Social and Financial Performance: A Meta Analysis</i> ; Organization Studies, Vol. 24 (3), pp. 403-441 (2003). http://www.socialinvest.org/areas/research/Moskowitz/2004MoskowitzSummary.pdf | | | | |
| 201 | 2002 | Molloy, et. al | Exploring the Relationship Between Environmental and Financial Performance | Empirical analysis suggests that if investors consider environmental performance at all, they perceive environmental improvements and management as costly unless made to avoid non-compliance penalties. Corporate financial performance does not appear to influence environmental performance. Instead, corporate sophistication, trust, and transparency are the driving factors behind environmental performance improvements. |
| Molloy, L., Erekson, H. & Gorman, R.; <i>Exploring the Relationship Between Environmental and Financial Performance</i> ; University of California, Santa Barbara (unpublished paper; Oct. 2002). http://fiesta.bren.ucsb.edu/~aloret/epacapmks/epaKmkts.html#Papers (within page, click on link to document) | | | | |
| 202 | 2002 | Soyka & Powers | Can Energy Efficiency Meaningfully Improve Corporate Profitability? | Empirical analysis of participant-reported data from EPA's Green Lights program. Authors find evidence that energy efficiency strategies create substantial and discernable new corporate wealth. |
| Soyka, P. & Powers, J.; <i>Can Energy Efficiency Meaningfully Improve Corporate Profitability?</i> ; U.S. EPA Contract No. 68-W5-0068 (April 2002). http://www.geotransinc.com/publications/energy.pdf | | | | |

Topic: Relationship of Environmental Compliance and Performance to Business Value and Competitiveness

| # | Year | Author | Title | Summary |
|---|------|------------------------------|--|---|
| 203 | 2002 | Ziegler, Rennings & Schroder | The Effect of Environmental and Social Performance on the Shareholder Value of European Stock Corporations | Paper considers the effect of sustainability performance of European stock corporations on shareholder value from 1996 to 2001 using a 2-stage econometric approach. Increasing environmental sector performance is found to have a significantly positive influence on shareholder value. |
| Ziegler, A.; Rennings, K. & Schroder, M.; <i>The Effect of Environmental and Social Performance on the Shareholder Value of European Stock Corporations</i> ; Centre for European Economic Research (November 20, 2002). Paper available at: http://www.vfs.unizh.ch/papers.htm | | | | |
| 204 | 2001 | Dasgupta, et al. | Pollution and Capital Markets in Developing Countries | Authors show that capital markets in Argentina, Chile, Mexico, and the Philippines react to announcements of environmental events such as reports of superior environmental performance or citizen complaints. Developing countries may harness those market forces through structured information release programs. |
| Dasgupta, S., Laplante, B. & Mamingi, N.; <i>Pollution and Capital Markets in Developing Countries</i> ; Journal of Environmental Economics and Management, Vol. 42, No. , pp. 310-335 (2001). http://www.chinaenvironment.net/pace/pdf/gw_cme_004.pdf | | | | |
| 205 | 2001 | Gray & Shadbegian | When Do Firms Shift Production Across States to Avoid Environmental Regulations? | Working Paper examines whether a firm's allocation of production across its plants responds to differences in the stringency of environmental regulation across states. Results are significant for the paper industry with impacts concentrated among firms with low compliance rates but weaker for the oil industry. |
| Gray, W. & Shadbegian, R. J.; <i>When Do Firms Shift Production Across States to Avoid Environmental Regulation?</i> ; U.S. EPA-National Center for Environmental Economics Working Paper Series No. 2002-02 (Jan. 2002). http://yosemite.epa.gov/ee/epa/eed.nsf/WPNumberNew/2002-02?OpenDocument | | | | |

Topic: Relationship of Environmental Compliance and Performance to Business Value and Competitiveness

| # | Year | Author | Title | Summary |
|--|------|-----------------|--|--|
| 206 | 2001 | Heinkel, et al. | The Effect of Green Investment on Corporate Behavior | Paper examines the effect of exclusionary ethical investing on corporate behavior. Such investing leads to polluting firms being held by fewer investors, raising their cost of capital. If the higher cost of capital overwhelms the cost of reforming, the polluting firms will become more socially responsible but parameter estimates suggest that more than 20% of a firm's investors need to be green investors to induce it to reform. |
| <p>Heinkel R., Kraus, A. & Zechner, J.; <i>The Effect of Green Investment on Corporate Behavior</i>; Journal of Financial and Quantitative Analysis, Vol. 36, No. 4, pp. 431-449 (Dec. 2001). http://homepage.univie.ac.at/josef.zechner/publications/heinkel_%20kraus_zechner_2001.pdf</p> | | | | |
| 207 | 2001 | Konar & Cohen | Does the Market Value Environmental Performance? | Authors find a significant positive relationship between the environmental performance and the intangible asset value of publicly traded S&P 500 firms. Firms with worse performance have lower intangible asset values – approximately 9% of the replacement value of the tangible assets – after controlling for other variables known to affect firms' market value. On the other hand, a 10% reduction in toxic chemical emissions resulted in a \$34 million increase in value. |
| <p>Konar S. & Cohen, M.; <i>Does the Market Value Environmental Performance?</i>; Review of Economics and Statistics, Vol. 83, No. 2, pp. 281-289 (May 2001). http://www.mitpressjournals.org/doi/abs/10.1162/00346530151143815</p> | | | | |
| 208 | 2001 | King & Lenox | Lean and Green? An Empirical Examination of the Relationship Between Lean Production and Environmental Performance | Empirical analysis of the environmental performance of 17,499 U.S. manufacturing firms from 1991-1996. Researchers find strong evidence that lean production, as measured by ISO 9000 adoption and low chemical inventories, is complementary to waste and pollution reduction. |
| <p>King, A. & Lenox, M.; <i>Lean and Green? An Empirical Examination of the Relationship Between Lean Production and Environmental Performance</i>; Production and Operations Management, Vol. 10 No.3, 244-56 (2001). http://www.atypon-link.com/POMS/doi/abs/10.5555/ijop.2001.10.3.244</p> | | | | |

Topic: Relationship of Environmental Compliance and Performance to Business Value and Competitiveness

| # | Year | Author | Title | Summary |
|---|------|----------------|---|---|
| 209 | 2001 | Koehler & Cram | The Financial Impact of Corporate Environmental Performance: Evidence of Link Between Environmental and Financial Performance | Cross-sectional analysis of 435 U.S. firms. Authors examine the relationship between firm-specific environmental performance characteristics, firm market value, and financial accounting measures. |
| <p>Koehler, D. & Cram, D.; <i>The Financial Impact of Corporate Environmental Performance: Evidence of Link between Environmental and Financial Performance</i>; 2nd EPA Workshop on Env. and Financial Perf./Harvard School of Public Health working paper . (May 2001). [unpublished/available from authors]</p> | | | | |
| 210 | 2001 | Seema | Voluntary Abatement and Market Value: An Event Study Approach | Empirical study, using TRI report announcements, of the effects of voluntary pollution prevention in creating private value for 635 publicly-traded companies. Analysis provides some evidence that firms that fail to undertake environmental improvements see a decline in their market value. Firms that exceed their expected level of pollution prevention activity, however, experience insignificant market impacts. |
| <p>Seema, A.; <i>Voluntary Abatement and Market Value: An Event Study Approach</i>; Stanford Institute for Economic Policy Research (SIEPR) Discussion Paper No. 00-30 (Feb 2001). http://siepr.stanford.edu/papers/pdf/00-30.pdf</p> | | | | |
| 211 | 2000 | Glen , et al. | Do Corporate Environmental Standards Create or Destroy Market Value? | Evidence from empirical analysis of 89 S&P 500 companies indicates that, contrary to supposition that pursuing lower environmental standards would be profitable for multinational firms, firms employing their own strict international global standards show positive market valuation as a result. |
| <p>Glen, D., Hart, S. & Yeung, B.; <i>Do Corporate Environmental Standards Create or Destroy Market Value?</i>; Management Science; Vol. 46(8), pp. 1059-1074 (2000). Executive Summary: http://www.investedinterests.com/content/files/social/corporate-global-environment-standards-destroy-market-value-moskowitz-2001.pdf</p> | | | | |

Topic: Relationship of Environmental Compliance and Performance to Business Value and Competitiveness

| # | Year | Author | Title | Summary |
|--|------|------------------|---|--|
| 212 | 2000 | Repetto & Austin | Pure Profit: The Financial Implications of Environmental Performance | Methodology to translate firms' environmental performance into financial terms. Addresses uncertainties regarding future environmental developments consistent with established financial valuation techniques. Its application to 13 U.S. pulp and paper companies suggests that pending environmental issues will have a range of varying material financial impacts on the companies. |
| Repetto, R. & Austin, D.; <i>Pure Profit: The Financial Implications of Environmental Performance</i> ; World Resources Institute (2000). http://pdf.wri.org/pureprofit.pdf | | | | |
| 213 | 2000 | Stafford | The Impact of Environmental Regulations on the Location of Firms in the Hazardous Waste Management Industry | Paper examines relationship between environmental regulations and location decisions of hazardous waste management firms. State spending on environmental programs is important in firms' location choices because it affects regulatory implementation and enforcement. Potential public opposition is also important. Firms do not appear to be deterred by the stringency of regulations but are instead attracted to comprehensive policies. |
| Stafford, S.; <i>The Impact of Environmental Regulations on the Location of Firms in the Hazardous Waste Management Industry</i> ; Land Economics, Vol. 76 (4), pp. 569-589 (Nov. 2000). http://links.jstor.org/sici?sici=0023-7639(200011)76%3A4%3C569%3ATIOERO%3E2.0.CO%3B2-Q | | | | |
| 214 | 2000 | USEPA | Green Dividends? The Relationship Between Firms' Environmental Performance and Financial Performance | Environmental Capital Markets Committee report sponsored by EPA with a focus on equity investors. Barriers to integrating the value of environmental strategies into financial analysis are discussed. Recommendations are offered on steps to address the barriers such as promoting the creation of industry-specific environmental performance benchmarks. |
| Environmental Capital Markets Committee; <i>Green Dividends? The Relationship Between Firms' Environmental Performance and Financial Performance</i> ; EPA 100-R-00-021. (2000). http://www.epa.gov/ocempage/naccept/green_dividends.pdf | | | | |

Topic: Relationship of Environmental Compliance and Performance to Business Value and Competitiveness

| # | Year | Author | Title | Summary |
|--|------|--------|--|--|
| 215 | 1999 | ELI | Innovation, Cost and Environmental Regulation: Perspectives on Business, Policy and Legal Factors Affecting the Cost of Compliance | Report presents and synthesizes research regarding the Porter hypothesis. The Porter hypothesis theorizes the cost of implementing environmental regulations may be significantly reduced by the concurrent development of low-cost processes and other innovations. |
| <p>ELI; <i>Innovation, Cost and Environmental Regulation: Perspectives on Business, Policy and Legal Factors Affecting the Cost of Compliance</i>; Environmental Law Institute Research Report (1999). http://www.elistore.org/reports_detail.asp?ID=475</p> | | | | |