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Negotiation as a means of developing and implementing environmental policy

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**NEGOTIATION AS A MEANS OF DEVELOPING
AND IMPLEMENTING ENVIRONMENTAL POLICY**

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SUMMARY

In the environmental area, negotiated rulemaking, implementation, and compliance are proposed by their advocates as delivering two primary benefits: reduced rulemaking time and decreased litigation over a final agency rule. The experience to date, however, indicates that negotiated rulemaking cannot be relied upon to deliver either of these benefits. Nonetheless, experience indicates that negotiation can, in appropriate circumstances, facilitate a better understanding of issues, concerns, facts, and positions among adversaries, promote the sharing of relevant information, and provide an opportunity for creative problem-solving. This paper examines three negotiated rulemakings by the U.S. Environmental Protection Agency (EPA) under the Clean Air Act. The three negotiations are evaluated according to whether negotiation was instrumental either in securing a more protective standard, or in securing an innovative technological response. It also addresses a fourth type of policy-relevant negotiation -- known as *regulatory reinvention* -- wherein the agency has assembled groups of interested parties to focus on regulatory issues concerning a particular industry sector, with an eye toward developing “cleaner, cheaper, smarter” ways of reducing or preventing pollution.

The three examples studied here indicate that, in situations in which a strong or dramatic regulatory signal is necessary to produce the desired technological response, negotiated rulemaking is not likely to be advisable. Since negotiated rulemaking relies on consensus, and since the regulated industry is unlikely to agree to a regulatory standard that it perceives as having a dramatic effect, negotiated rulemaking is unlikely to create the incentive necessary to spur innovation. However, where the desired technological change is likely to come more easily, appropriate use of negotiated rulemaking may help facilitate an innovative technological response.

Negotiation would appear to work best as a means of securing improved health, safety, or environmental outcomes in situations in which the necessary regulatory signals for improvement and innovation are already in place. This is a primary reason that EPA’s Supplemental Environmental Project (SEP) policy has been relatively successful at securing pollution prevention and other environmental benefits as a part of the negotiation of settlement agreements with non-compliant companies. It also suggests that the agency could also encourage meaningful technological change through a more creative and aggressive use of its authority to grant innovation waivers to selected companies at the implementation stage. Moreover, it is a primary reason why EPA’s regulatory reinvention strategy has, thus far, failed to live up to expectations.

NON TECHNICAL SUMMARY

In a broad sense, there are three major instances in which negotiation is used to *make* or *effectuate* policy within the federal administrative system of the United States. First, there is *negotiated rulemaking*, wherein negotiation is used to help set regulatory standards. Second, there is what we call *negotiated implementation*, where negotiation is used to determine how a regulatory standard, once set, is to be applied to a particular firm (or other member of the regulated community). Third, there is *negotiated compliance*, where negotiation is used to determine the terms by which regulatory standards will be enforced against a particular firm (or other regulated entity) that is out of compliance with a particular regulatory standard. This paper discusses the use of these three types of negotiation by the United States Environmental Protection Agency (EPA), and also addresses a fourth type of policy-relevant negotiation -- known as *regulatory reinvention* -- that is being attempted by the current EPA administration. The most prominent example of this is what is known as EPA's *Common Sense Initiative*, wherein the agency has assembled groups of interested parties to focus on regulatory issues concerning a particular industry sector, with an eye toward developing "cleaner, cheaper, smarter" ways of reducing or preventing pollution.

Those who advocate negotiated rulemaking -- including the United States Congress -- tend to identify two primary benefits that are expected to flow from its use: reduced rulemaking time, and decreased litigation over the final rule. The experience to date, however, indicates that negotiated rulemaking cannot be relied upon to deliver either of these benefits. Nonetheless, experience indicates that negotiation can, in appropriate circumstances, facilitate a better understanding of issues, concerns, facts, and positions among adversaries, promote the sharing of relevant information, and provide an opportunity for creative problem-solving. This paper examines three negotiated rulemakings under the U.S. Clean Air Act. The three negotiations -- each of which involved an attempt to establish a standard for the release of airborne emissions by stationary sources -- are evaluated according to whether negotiation was instrumental either in securing a more protective standard, or in securing an innovative technological response.

The three examples studied here indicate that, in situations in which a strong or dramatic regulatory signal is necessary to produce the desired technological response, negotiated rulemaking is not likely to be advisable. Since negotiated rulemaking relies on consensus, and since the regulated industry is unlikely to agree to a regulatory standard that it perceives as having a dramatic effect, negotiated rulemaking is unlikely to create the incentive necessary to spur innovation. However, where the desired technological change is likely to come more easily, appropriate use of negotiated rulemaking may help facilitate an innovative technological response.

Negotiation would appear to work best as a means of securing improved health, safety, or environmental outcomes in situations in which the necessary regulatory signals for improvement and innovation are already in place. This is a primary reason that EPA's Supplemental Environmental Project (SEP) policy has been relatively successful at securing pollution prevention and other environmental benefits as a part of the negotiation of settlement agreements with non-compliant companies. It also suggests that the agency could also encourage meaningful technological change through a more creative and aggressive use of its authority to grant innovation waivers to selected companies at the implementation

stage. Moreover, it is a primary reason why EPA’s regulatory reinvention strategy has, thus far, failed to live up to expectations.

TABLE OF CONTENTS

INTRODUCTION	1
MODES OF NEGOTIATION	1
NEGOTIATED RULEMAKING AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY	2
<u>Negotiated Rulemaking Within the U.S. Administrative System</u>	2
<u>The Promise and Performance of Negotiated Rulemaking: The EPA Experience</u>	3
<i>The Woodstoves Rule</i>	5
<i>The Coke Oven Emissions Rule</i>	7
<i>The Wood Furniture Coatings Rule</i>	16
<i>Evaluation</i>	20
NEGOTIATED IMPLEMENTATION AND THE U.S. EPA	21
<u>Innovation Waivers</u>	21
<u>Extra-Statutory Efforts: Project XL</u>	23
NEGOTIATED COMPLIANCE AND THE U.S. EPA	27
REGULATORY REINVENTION AND THE U.S. EPA	30
CONCLUSION	36

INTRODUCTION

Negotiation -- as an alternative or an adjunct to the adversarial process -- is increasingly touted as the wave of the future in environmental policy circles. Negotiation, it is argued, is a more efficient use of societal resources, because it is more likely to produce a result on which all sides can agree. Moreover, negotiation is said to be more likely to produce creative solutions, because it forces the parties to focus on cooperation rather than confrontation. This paper surveys the use of negotiation in formulating and implementing environmental policy in the United States, and attempts to assess the potential of negotiation to (a) foster improved environmental and health and safety outcomes and (b) stimulate technological change.

MODES OF NEGOTIATION

In a broad sense, there are three major instances in which negotiation is used to *make* or *effectuate* policy within the federal administrative system of the United States. First, there is *negotiated rulemaking*, wherein negotiation is used to help set regulatory standards. In the first instance, of course, policy-making is the sole province of Congress, through legislation. Once a particular statutory mandate is passed by Congress and signed by the President, however, it falls to the responsible agency to develop the particularized standards that will implement that mandate. And, so long as they act within the bounds defined by Congress in their statutory mandate, agencies often are given considerable latitude in standard-setting. For the past twenty years or so, the United States Environmental Protection Agency (EPA) has made occasional use of negotiated rulemaking -- a process whereby representatives of the various major constituencies expected to be affected by a contemplated regulation are brought together to try to develop a proposed version of that regulation on which all (or most) of them can agree -- to help it set regulatory standards. As discussed below, use of this procedure is, generally speaking, encouraged by Congress.

Second, there is what we call *negotiated implementation*, where negotiation is used to determine how a regulatory standard, once set, is to be applied to a particular firm (or other member of the regulated community). Under the law, such negotiation is appropriate only to the extent that it is consistent with the policy mandate set by Congress. When, for example, the statute specifies that a particular standard is to be applied uniformly to all regulated entities by a given date, no such negotiation is proper. Negotiated implementation often occurs when a permit is being issued or revised, as is the case with EPA's recent *Project XL* initiative. Such negotiation also occurs when the regulated firm seeks a waiver or variance from the regulatory standard at issue. Of particular interest here are the *innovation waivers* that have been made available by Congress in certain environmental statutes. When such a waiver is granted by EPA, the firm is given additional time to comply with the standard so that it may perfect a promising innovative compliance technology.

Third, there is *negotiated compliance*, where negotiation is used to determine the terms by which regulatory standards will be enforced against a particular firm (or other regulated entity) that is out of compliance with a particular regulatory standard. By its nature, of course, almost all enforcement involves some amount of negotiation between the enforcing agency (or, in the case of citizen enforcement suits, the enforcing citizen) and the alleged violator. Of interest here are those compliance negotiations that result in (a) compliance through the use of innovative technology, and/or (b) environmental or public health gains *beyond* compliance. Within the past decade, EPA has pioneered the use of what it terms “Supplemental Environmental Projects” in an attempt to meet these goals within the compliance context.

In the environmental arena, there is also what might be classified as a fourth type of policy-relevant negotiation. Within the current EPA administration, this is what is known as *regulatory reinvention*. The most prominent example of this is what is known as EPA’s *Common Sense Initiative*, wherein the agency has assembled groups of interested parties to focus on regulatory issues concerning a particular industry sector (*e.g.*, automobile manufacturing), with an eye toward developing “cleaner, cheaper, smarter” ways of reducing or preventing pollution.

NEGOTIATED RULEMAKING AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY

Since the mid-1970s, many commentators in the United States have advocated the use of negotiated rulemaking as a more efficient, sensible alternative to the traditional “notice and comment” procedure typically followed by federal agencies in the development of regulations.¹ Occasionally in the 1970s, and more often in the 1980s, the Occupational Safety and Health Administration, EPA, and other federal agencies used the negotiation process as an aid to the development of certain regulations. In 1990, Congress formally endorsed negotiated rulemaking with the passage of the federal Negotiated Rulemaking Act,² and the Clinton Administration has been a strong supporter of its use.³

¹ See, *e.g.*, J. Dunlop, “The Limits of Legal Compulsion,” *reprinted in 1975 Occupational Safety and Health Reporter (BNA)*, p. 884, 886 (Nov. 12, 1975); P. Harter, “Negotiating Rules: A Cure for the Malaise,” *Georgetown Law Journal*, Vol. 71, p. 1 (1982); Susskind & McMahon, “The Theory and Practice of Negotiated Rulemaking,” *Yale Journal on Regulation*, Vol. 3, p. 133 (1985).

² 5 U.S.C. Sec. 561-570. Congress permanently reauthorized the 1990 Act in the Administrative Dispute Resolution Act of 1996, Pub. L. 104-320, 110 Stat. 3870 (1996).

³ See, *e.g.*, Executive Order 12,866, Sec. 6(a), September 30, 1993. Each agency was directed “to explore, and where appropriate, use consensual mechanisms for developing regulations, including negotiated rulemaking.”

Negotiated Rulemaking Within the U.S. Administrative System

The Negotiated Rulemaking Act specifies a set of procedures that may be followed if an agency wishes to use negotiated rulemaking, although the Act cautions that these procedures “should [not] be construed as an attempt to limit innovation and experimentation with the negotiated rulemaking process or with other innovative rulemaking procedures otherwise authorized by law.” Under the Act, an agency may -- but is not required to -- utilize negotiated rulemaking to develop a proposed rule whenever the agency determines that it would be “in the public interest” to do so. If the agency desires to use negotiated rulemaking, it must first identify the various interests that would be significantly affected by a proposed rule, and determine whether those interests could be represented adequately by a group of persons brought together to serve as a negotiated rulemaking committee. If so, the agency may then establish such a committee. The negotiated rulemaking committee is to be made up of persons representing the various affected interests, plus at least one member of the agency, who is to serve on the committee “with the same rights and responsibilities as other members of the committee.” The committee’s goal is to determine whether committee members can reach a “consensus” (which may be defined by the committee as something less than unanimity) on the wording of a draft rule.

If they do reach consensus, the rule drafted by the committee must then be put out for public notice and comment, the same as any other proposed rule. The agency retains authority over the wording of any proposed or final rule, and the agency is empowered to modify the rule drafted by the committee if it believes that the draft rule is inconsistent with the applicable congressional mandate. Moreover, a rule drafted through negotiated rulemaking is subject to judicial review to the same extent as any other rule.⁴

The Promise and Performance of Negotiated Rulemaking: The EPA Experience

Those who advocate negotiated rulemaking -- including Congress -- tend to identify two primary benefits that are expected to flow from its use: reduced rulemaking time, and decreased litigation over the final rule.⁵ Presumably, face-to-face meetings among the interested parties

⁴ Even without the Negotiated Rulemaking Act, any negotiated rulemaking committee convened by an agency would be treated as an advisory committee under the Federal Advisory Committee Act, 5 U.S.C. App. 1, and would be required to have “balanced” representation. For a more detailed discussion of notice and comment rulemaking, and of the Federal Advisory Committee Act, see N. Ashford and C. Caldart, *Technology, Law, and the Working Environment*, Rev. Ed. (Island Press, 1996), Chapter Two.

⁵ The legislative history of the 1996 reauthorization of the Negotiated Rulemaking Act reflects almost unanimous support for negotiated rulemaking, and stresses these two presumed benefits of negotiated rulemaking. See: *The Reauthorization of the Negotiated Rulemaking Act, 1996: Hearings Before the Subcommittee on Commercial and Administrative Law of the House*

will be able to avoid the various bureaucratic quagmires that can delay the drafting of a rule within an agency, and will, on average, produce a proposed rule more quickly. Further, since the interested parties have agreed on the wording of the proposed rule in advance, the notice and comment procedure presumably will be less contentious and time-consuming, and the incentive for anyone to file a judicial challenge to the final rule presumably will be slight.⁶

In practice, however, it is not at all clear that negotiated rulemaking delivers on either of these promises. Of all the federal agencies in the United States, EPA has used negotiated rulemaking the most often.⁷ A recent study of EPA negotiated rulemakings to date has concluded that: (a) on average, the promulgation of EPA rules through negotiated rulemaking took no less time than did the promulgation of a “control” group of similar EPA rules through traditional notice and comment rulemaking; and (b) 50% of EPA’s twelve finalized negotiated rulemakings were the subject of legal challenge, compared with a litigation rate of 26% for all EPA rules issued during the period from 1987 through 1991.⁸ To date, then, it has not been established that negotiated rulemaking actually returns the primary benefits touted by its proponents.⁹

Nonetheless, there may be other advantages of using negotiated rulemaking, at least in certain circumstances, depending on the goals one wishes to achieve. Significantly, because it facilitates face-to-face discussions among rulemaking “adversaries” that might not otherwise occur, negotiated rulemaking holds out the potential that, as differences are understood and addressed, creative solutions may be found to difficult issues in such a way that a substantively

Committee on Judiciary, 104th Cong., 2d Sess. (1996); 142 Cong. Rec. H12303-12304 (October 19, 1996).

⁶ See, e.g., L. Susskind & G. McMahon, *supra* note 1.

⁷ Still, negotiated rulemaking is used in a very small percentage of EPA rulemakings.

⁸ See G. Coglianese, *Assessing Consensus: The Promise and Performance of Negotiated Rulemaking*, John F. Kennedy School of Government, Harvard University (1997), pp. 35-36. If one looks only at the more *significant* EPA rules, the litigation rate is 35%. Conversely, if one uses the Office of Management and Budget’s data on the number of EPA rules issued during this period, the figure is only 19%. *Id.*

⁹ Interviews with participants in negotiated rulemakings at EPA have found general satisfaction with the procedure and the results. However, “[i]n terms of satisfaction with the process and their experience with it, certain classes of participants, notably environmental interests, gave lower ratings than did the others. Their ratings were positive, but marginally so.” C. Kerwin & L. Langbein, *An Evaluation of Negotiated Rulemaking at the Environmental Protection Agency Phase I* (Administrative Conference of the United States, September, 1995), p.47.

better rule emerges. Such a result might come, for example, through the identification of opportunities for innovative technological responses within the regulated community.

As an initial attempt at determining whether this potential is being realized, we have examined three EPA negotiated rulemakings conducted under the federal Clean Air Act. Of the twelve negotiated rulemakings completed by EPA, we have chosen to focus on these three because they share a set of common features: a full committee stayed with the negotiations to the end;¹⁰ the rule negotiated was the rule actually proposed by the agency;¹¹ and the rule set an air emission standard designed to protect the environment and/or public health.¹²

In addition to the limitations imposed by the small number of examples examined, the problem with an analysis of this nature is the fact that any attempt to identify a “better” result is a qualitative exercise: depending on the context, it can mean quite different things to different people. For the purposes of this paper, we have sought to evaluate the quality of the final rule produced by negotiated rulemaking according to whether it produced more -- or less -- environmental/public health protection than might have been expected had negotiated rulemaking not been used, and we have given particular attention to the extent to which opportunities to promote technological change were -- or were not -- seized upon by the negotiating committee.

The Woodstoves Rule

One of EPA’s early forays into negotiated rulemaking was the development of a national New Source Performance Standard for “residential wood combustion units” (woodstoves). EPA came to regulate woodstoves as a result of a lawsuit brought by the Natural Resources Defense Council (NRDC), a private, non-profit environmental group, and the State of New York. That suit sought to force EPA to regulate polycyclic organic matter (POM) as a hazardous air pollutant under Section 112 of the Clean Air Act. As part of its settlement of the POM litigation,

¹⁰ This distinguishes this group from the negotiations over EPA’s worker protection standards for agricultural pesticides, where the farmworkers left the negotiating table early on, and the rule was negotiated without their participation. *See* 57 Fed. Reg. 38102 (1992).

¹¹ This distinguishes this group from the negotiations over oxygenated and reformulated fuels under the Clean Air Act, *see* 59 Fed. Reg. 7716 (1994), where EPA chose to promulgate a rule different from the one negotiated by the negotiated rulemaking committee.

¹² Not only does this provide something of a common basis for comparison among the three negotiations, but it leads to a more straightforward analysis of the level of environmental and health protection delivered by the final rule than would an analysis of, say, EPA’s negotiated information collection rule for disinfectant byproducts in drinking water, *see* 61 Fed. Reg. 24354 (1996), or EPA’s negotiated rule on nonconformance penalties for motor vehicle compliance testing and certification, *see* 50 Fed. Reg. 35233 (1985).

EPA agreed to explore the possibility of regulating woodstoves -- one of the primary contributors of POM¹³ -- as “stationary sources” of air pollution under Section 111 of the Act. Interestingly, such regulation was desired both by environmental groups and by woodstove manufacturers, who hoped that the promulgation of a national standard by EPA would discourage states from setting their own (likely differing) standards.¹⁴

Section 111 of the Clean Air Act requires that a New Source Performance Standard (NSPS) reflect the level of emission limitation achievable through the application of the “best system of emission reduction . . . [that] has been adequately demonstrated.”¹⁵ To devise such a national emission standard, EPA convened an advisory committee consisting of representatives from industry, environmentalists, certain states, a consumer group, and the agency itself. Agreement on a single national standard was complicated, however, by the fact that there were two major categories of woodstoves on the market -- those that utilized catalytic combusters and those that did not. It was clear that, at least in the short term, the stoves with catalytic combusters were capable of meeting a lower (more protective) emission standard than those without catalytic combusters. Because catalytic combusters require a higher degree of maintenance, however, there was some question as to whether they would continue to deliver this greater level of emission reduction over the long term. Rather than resolve this technical issue, the negotiating committee agreed rather early on to adopt the industry position on the matter, and to propose two standards -- one for stoves with catalytic combusters and the other for those without.¹⁶ Thus, the opportunity to diffuse what may well be a superior emission-reduction technology throughout the woodstove industry was lost (as was an opportunity for innovation through the development of new woodstove technology).

This does not necessarily mean, however, that the woodstove rule was a “failure” from an environmental/public health perspective. It is questionable whether Section 111 actually empowers EPA to regulate residential woodstoves as “stationary sources” of air pollution, especially since the rule governs the manufacturers and retailers who *sell* the stoves rather than the individual homeowners who operate them.¹⁷ Thus, it could be argued that the process of negotiated rulemaking -- in which the various players were able to agree on a rule despite its

¹³ POM is produced and released into the air by the partial combustion that is typical of the woodstove burning process.

¹⁴ *See, generally*, W. Funk, “When Smoke Gets in Your Eyes: Regulatory Negotiation and the Public Interest -- EPA’s Woodstove Standards,” *Environmental Law*, Vol. 18, p. 55, 59-62, 80-81 (1987).

¹⁵ *See* 42 U.S.C. Sec. 7411(a)(1).

¹⁶ *See* 53 Fed. Reg. 5860 (1988); Funk, *supra* note 14, at 88.

¹⁷ *See* Funk, *supra* note 14, at 66-78.

legal infirmities -- resulted in a giant step forward, in that it produced national emission standards which otherwise either might not have been promulgated, or might have been successfully challenged in court.

On the other hand, the Clean Air Act was not the only regulatory alternative available to address the woodstove issue. The federal Consumer Products Safety Act (CPSA), which governs the design and sale of products “for use in or around” the home or school, clearly *does* cover woodstoves sold for residential use, and clearly contemplates regulation of manufacturers and retailers.¹⁸ It is not clear, however, that regulation under the CPSA would necessarily have produced a stricter emission standard for stoves without catalytic combusters. The CPSA requires that the benefits of a consumer products safety standard be justified by its costs, and the members of the non-catalytic industry doubtless would have argued that a stricter standard would have driven them out of the market. Further, unlike EPA, the Consumer Products Safety Commission -- a chronically under-funded agency that is often reluctant to take on new issues -- had no particular incentive to regulate woodstoves.

The Coke Oven Emissions Rule

Coke ovens are used to convert coal to coke, which is then used to produce steel. Air emissions from coke ovens come largely from leaking oven doors and lids. In 1992, EPA estimated that some 3.5 million pounds of toxic chemicals, including benzene, phenol, toluene, and polyaromatic hydrocarbons, were emitted to the air annually from coke ovens operating in the U.S. Based on this estimate, EPA put the cancer risk to exposed individuals at 1 in 100.¹⁹

Many of the materials emitted by coke ovens are subject to regulation as hazardous air pollutants under Section 112 of the Clean Air Act, and the 1990 amendments to the Act specifically required that Section 112 standards for coke oven emissions be promulgated by December 31, 1992. In early 1992, after meeting with representatives of the steel industry, relevant labor unions, states, and environmental groups “to discuss available data to be used as the basis of [a Section 112 regulation],” EPA convened a negotiated rulemaking committee that drew from all of these constituencies.²⁰ After several negotiating sessions, the committee agreed

¹⁸ See 15 U.S.C. Sec. 2047, *et seq.*

¹⁹ See “Year-Long Coke Oven Negotiations Yield Pact Between Steel Industry, Environmentalists,” *Environment Reporter*, Bureau of National Affairs (BNA), Vol. 23, p. 1669 (October 10, 1992).

²⁰ EPA’s description of the negotiated rulemaking committee and its work, and of the events leading up to the establishment of the committee, is found in the preamble to the proposed coke oven emissions rule, 57 Fed. Reg. 57534, *et seq.* (“Preamble”), *reprinted in Environment Reporter*, BNA, Vol. 23, at 2111, *et seq.* (December 12, 1992).

on a draft rule that was proposed by the agency in December 1992, and was published as a final rule in October 1993.²¹

In general, Section 112 of the Clean Air Act takes a two-tiered approach to the regulation of hazardous air pollutants. EPA is first to set technology-based emission standards, on an industry category-by-industry category basis. These are commonly known as the “MACT” standards, because they are to be set with reference to the application of the maximum achievable control technology that the industry category can afford.²² Eight years later, the agency is to set a more stringent, health-based standard if further emission reductions are deemed necessary to provide “an ample margin of safety to protect public health.”²³ A health-based standard for carcinogens *must* be set if the technology-based standard fails to “reduce lifetime excess cancer risks to the individual most exposed to [the] emissions . . . to less than one in one million.”²⁴ For coke oven emissions in particular, however, Section 112 offers an alternative whereby a source may delay compliance with the health-based standard until 2020 if it meets a different, more stringent technology-based standard in the interim.²⁵ The committee followed this framework in drafting its proposed rule, and steel industry representatives said afterward that, because they viewed any likely health-based standard as “essentially a shut-down standard,” they expected all plants except those that planned to go out of business in the near future to choose this “extended compliance” option.²⁶

At the conclusion of the negotiated rulemaking process, participants from environmental groups, labor, industry, and state governments all expressed their satisfaction with the negotiated rule.²⁷ An EPA representative stated his belief that the negotiated rule would result in more

²¹ See *Id.* (proposed rule), and 58 Fed. Reg. 57911 (Oct. 27, 1993) *codified at* 40 CFR 63.300, *et seq.* (final rule).

²² See Section 112(d) of the Clean Air Act, 42 U.S.C. Sec. 7512(d). We use the term “technology-based standard” to mean an emission limit that is determined by reference to the level of emission reduction deemed attainable through the application of a particular technology or set of technologies. It can, *but generally does not*, actually require the adoption of the particular reference technology.

²³ See Section 112(f) of the Clean Air Act, 42 U.S.C. Sec. 7512(f). We use the term “health-based standard” to mean an emission limit that is determined by reference to the level of emission reduction deemed necessary to attain a particular health goal (such as a particular level of risk).

²⁴ See Section 112(f)(2)(A) of the Clean Air Act, 42 U.S.C. Sec. 7512(f)(2)(A).

²⁵ See Section 112(d)(8), 42 U.S.C. Sec. 7512(d)(8).

²⁶ “Coke Oven NESHAP Includes Two Options Based on Year-Long Negotiated Rule-Making,” *Environment Reporter*, BNA, Vol. 23, December 4, 1992, p. 1934.

²⁷ See *Environment Reporter*, *supra* note 19.

emission reductions than would have been obtained through the conventional rulemaking process, and remarked that the agency had never before “been able to grapple with the economic and technological issues” addressed by the rule.²⁸ It is probably more accurate to say, however, that this is a rulemaking that was made considerably easier because Congress had taken it upon itself to specify the dates by which -- and the minimum amounts by which -- the steel industry would be asked to reduce emissions. Indeed, the chief contribution of *negotiation* to the rulemaking process appears to have been to afford the industry the opportunity to negotiate a standard that actually is *less* stringent than that which was mandated by Congress.

For coke oven facilities choosing the “extended compliance” option, EPA was required to promulgate two sets of technology-based emission limits by December 31, 1992, to become effective in November 1993 and January 1998, respectively. Emission limits for coke ovens had traditionally been expressed in terms of a maximum permissible percentage of leaking doors, lids, and oftakes, and Congress adopted this approach in Section 112. For the 1993 limits, Congress specified the precise percentages EPA was to require.²⁹ For the 1998 limits, Congress directed the agency to set percentages “reflecting the lowest achievable emission rate” (colloquially known as LAER), and also specified a set of percentages representing the *least stringent* permissible 1998 standard that EPA could set, and a second set representing a more stringent *default* 1998 standard that was to take effect if the agency failed to promulgate the 1998 limits by December 31, 1992.³⁰

²⁸ *Id.* The EPA representative was William G. Rosenberg, Assistant Administrator for Air and Radiation. His comments were echoed by EPA Administrator William Reilly. In an EPA press release, Reilly stated that the negotiated rule “goes beyond the requirements of the Clean Air Act,” and offered the rule as “another example of where EPA has successfully used cooperative problem-solving to find an environmentally and economically sound solution to a complex pollution problem.” United States Environmental Protection Agency, *Environmental News*, “EPA Announces Agreement on Coke Oven Rules,” October 28, 1992, pp. 1-2.

²⁹ See 42 U.S.C. Sec. 7412(d)(8)(C).

³⁰ See 42 U.S.C. Sec. 7412(i)(8)(B)(i) (least stringent permissible standard) and 7412(i)(8)(B)(ii) (default standard). The two are identical except for the fact that the default standard has no exclusion for “emissions during the period after the closing of self-sealing doors.” The negotiated rulemaking committee calculated that the presence of this exclusion added about 2% to the allowable percentage of leaking doors specified in the least stringent permissible standard. In practical terms, then, this means that the default standard for leaking doors was, as specified in the statute, “3 percentum leaking doors (5 percentum leaking doors for six meter batteries),” while the least stringent permissible standard, after allowance for the 2% exclusion, was 5 percentum leaking doors (7 percentum leaking doors for six meter batteries). Phone conference with Marvin Branscomb, of the non-profit Research Triangle Institute in Research Triangle Park, South Carolina, who served as a technical consultant for EPA on the coke oven negotiations, December 15, 1997.

In writing the rule that was promulgated by EPA, the negotiated rulemaking committee began with the 1993 limits specified in the statute, and with the least stringent permissible 1998 limits specified in the statute, but converted them to “statistically equivalent” limits based on thirty days’ average performance.³¹ Thus, while the statute specified a maximum percentage that was not to be exceeded, the negotiated rule specifies an average percentage that must be achieved over a thirty-day period. This allows a facility to *exceed* the percentage specified in the statute for certain periods, so long as it is sufficiently *below* that percentage for other periods to maintain the required thirty-day average.³²

This change was made because the steel industry expressed concern that a straightforward application of the standards specified by Congress would necessitate the closure of most of the existing coke oven facilities throughout the country, as they would be unable to meet the specified maximum limits on a continual basis.³³ Union participants in the negotiations, who were interested both in preserving jobs and in reducing workplace emissions, apparently helped to persuade the environmental group participants that this concern was a valid one.³⁴ In addition, the statistical conversion to thirty-day averages allowed EPA and the

³¹ Phone conversation with Marvin Branscomb, *supra* note 30; phone conversation with Amanda Agnew, Office of Air Quality, Emission Standards Division, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, December 1, 1997. *See also*, Preamble, *supra* note 20, reprinted in *Environment Reporter (BNA)*, Vol. 23, at 2121.

³² As the statute itself does not specify any given period for which the limits must be maintained, the statutory limits appear on their face to be *daily maximum* requirements (*i.e.*, numbers that may not be exceeded on any given day). According to EPA consultant Marvin Branscomb, however, the negotiated rulemaking committee interpreted the legislative history of Section 112’s coke oven provisions as indicating that the intention was for the statutory numbers to apply as the average of three consecutive “runs” of the coke oven battery. A “run” is a period of time during which a visual observation of coke oven emissions is made according to EPA-prescribed methods. As there will typically be one run per day, a three-run average is effectively a three-day average, and a thirty-run average is effectively a thirty-day average. Phone conversation with Marvin Branscomb, *supra* note 30. The limits in EPA’s negotiated rule are in terms of a thirty-run average.

³³ Phone conversation with Marvin Branscomb, *supra* note 30; phone conversation with negotiation participant Michael Wright, United Steelworkers of America, Washington, D.C., December 8, 1997; phone conversation with negotiation participant Roy Huntley, staff engineer, Office of Air Quality, Emission Standards Division, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, December 17, 1997.

³⁴ Due to the nature of coke oven technology, there is a clear link between environmental and occupational emissions. The participants in the negotiations formed two separate caucuses, the

environmental group representatives to point to regulatory limits expressed as numbers that were actually *below* the numbers specified by Congress in the statute. For example, the statute requires 8% leaking doors in the 1993 limits, while the regulation specifies 7% leaking doors. Even though this difference is simply an artifact of the statistical conversion of the statutory number to a thirty-day average value, the appearance is of a more stringent standard.

From a health perspective, however, the regulation may well be less protective than the numbers specified in the statute. There is evidence that short-term exposure to a certain amount of carcinogenic materials is more harmful than exposure to the same amount of those materials, in smaller daily increments, spread out over a longer term.³⁵ The increased damage done on the individual days of high exposure levels allowed under the thirty-day average approach, then, may not be offset by the reductions in damage experienced on those days when emissions are below the required average.

Moreover, it appears clear that the negotiated 1998 limits were *not* set according to the “lowest achievable emission rate” (LAER) as that term is defined in the Clean Air Act. LAER is defined, in relevant part, as “the most stringent emission limitation that is achieved in practice by [the] class or category of source,” with no consideration of the cost of meeting that emission limitation.³⁶ That is, a LAER limit is to be based on the emission levels being attained by the best-performing existing plant within the particular industry class or category. The best-performing coke oven facility in operation in the United States at the time was the Jewell Smokeless plant, owned by Sun Coal, in Vansant, Virginia. This facility employs a *nonrecovery* coke oven technology, while all of the other coke oven plants in the country employ the older, and dirtier, *by-product recovery* technology.³⁷ A nonrecovery plant can achieve an emission limit of 0.0% leaking doors, lids, and offtakes.³⁸ Further, nonrecovery plants produce far less wastewater, and far less hazardous waste, than comparable by-product recovery plants, and also generate excess energy that can be utilized elsewhere in the facility.³⁹ From an environmental perspective, then, the nonrecovery technology is undeniably superior.

industry caucus and the environmental caucus. According to Michael Wright of the Steelworkers union, who participated in the negotiations, the union representatives joined the environmental caucus, but served as a “bridge” between the environmental caucus and the industry caucus. Phone conversation with Michael Wright, *supra* note 33.

³⁵ *E.g.*, N. Ashford and C. Caldart, *supra* note 4, at 170.

³⁶ 42 U.S.C. Sec. 7501(3)(B).

³⁷ Phone conversation with Roy Huntley, *supra* note 33.

³⁸ This, in fact, is the MACT limit set by EPA for nonrecovery facilities. *See* 42 CFR 63.303.

³⁹ Phone conversation with Marvin Branscomb, *supra* note 30.

Although there was some talk within the negotiated rulemaking committee of basing the LAER limits on the performance of the Jewell Smokeless plant, the committee decided instead to consider the performance of by-product recovery plants only.⁴⁰ The committee apparently focused on the performance of a USX (United States Steel) plant in Clariton, Pennsylvania, which the committee appears to have deemed the best-performing by-product recovery facility.⁴¹ Yet, as noted, the committee set the 1998 limits simply by specifying percentages that were calculated to be the “statistical equivalent” of the least stringent permissible limits specified in the statute. If the committee took this approach because it believed that this was the best the industry could do, this appears to have been a significant error in assessment.

The negotiated 1998 limits (expressed as thirty-day averages) are 4.3% leaking doors for tall doors and foundry doors, and 3.8% leaking doors for all other doors.⁴² As LAER limits, these limits were required by statute to be representative of the very best performance within the industry. An EPA survey of by-product recovery plants done six months after these limits were promulgated in 1993, however, found that most plants were easily meeting the 1998 limits, and that some plants were averaging 1% to 2% leaking doors.⁴³ In other words, the best performance in the industry was considerably better than what the 1998 limits allow. Subsequent EPA surveys of the industry revealed that the performance of many of the plants worsened somewhat thereafter but was still comfortably in compliance with the legally-applicable 1993 limits.⁴⁴ This suggests that the plants may have initially been testing their technology to ensure that they could meet the 1998 limits.⁴⁵ In August 1997, with the 1998 limits due to become enforceable within a few months, most of the plants were again meeting the 1998 limits on a continuous basis, and roughly three out of every five of the plants had *maximum* (as opposed to thirty-day average) values of *less than 2%* leaking doors.⁴⁶

⁴⁰ Phone conversation with Roy Huntley, *supra* note 33.

⁴¹ *Id.* (“most of the data used” came from the Clariton plant); phone conversation with Michael Wright, *supra* note 33 (the Clariton facility was deemed the best-performing plant). The preamble to the proposed standard does not explain how the 1998 LAER limits were set.

⁴² *See* 42 CFR 63.304(b)(2)(i).

⁴³ Phone conversation with Roy Huntley, *supra* note 33.

⁴⁴ *Id.*

⁴⁵ This apparently was the opinion of many EPA field staff. *Id.*

⁴⁶ *Id.*, and data supplied by Mr. Huntley. The August 1997 survey included 23 of the 26 plants in operation, which represented 60 of the 66 operating coke oven batteries. Mr. Huntley reported that 83% of the batteries surveyed were meeting the 1998 limits continuously, and that 62% had maximum values of 2% or less.

The Clean Air Act also specifies that, by January 2007, EPA is to review the 1998 LAER limits for coke oven facilities, and “revise [them], as necessary . . . to reflect the lowest achievable emission rate as defined . . . at the time,” with such revised limits to become effective on January 1, 2010.⁴⁷ Rather than waiting until later to set the revised LAER standard, so that it could assess technological improvements made in response to the 1993 and 1998 limits, EPA adopted the recommendation of the negotiated rulemaking committee to set the 2010 standard as part of the 1993 rule. Again based on performance data from the United States Steel plant in Clariton, the limits for 2010 are only slightly more stringent than their 1998 counterparts, and are considerably less stringent than what the current data indicate the best-performing by-product recovery plants could meet.⁴⁸ The statutory criteria for LAER, then, simply were not met.

EPA was also required to promulgate Section 112 emission limits for *new* coke oven sources.⁴⁹ Once again, the negotiated rule appears to fall short of the statutory mark. The problem is one of scope as well as one of substance. Section 112 defines “new source” as “a stationary source the *construction or reconstruction* of which is commenced after the [EPA] first proposes regulations under this section establishing an emission standard applicable to such source.”⁵⁰ By the terms of the statute, then, a “new” coke oven source includes both the construction of a wholly new coke oven *plant* and the reconstruction of an existing plant to install a new coke oven *battery*. Under the terms of the regulation, however, a reconstructed coke oven plant becomes a “new” source only if the new coke oven batteries “increase the design capacity” of the facility.⁵¹ This removes an entire class of reconstructed facility from the ambit of the new source standard, and allows existing plants that do not expand their operations to replace coke oven batteries without making any improvements in technology.

Moreover, new source limits under Section 112 are to be “not less stringent than the emission control that is achieved in practice by the best controlled similar source,” without

⁴⁷ See 42 U.S.C. Sec. 7412(i)(8)(C).

⁴⁸ The 2010 standard is 4.0% leaking doors for tall doors and foundry doors, and 3.3% leaking doors for all other doors. The numerical limits for the other parts of the standard (percentage leaking lids, percentage leaking offtakes, and number of seconds per charge) are unchanged from 1998 to 2010. See 40 CFR 63.304(b)(3).

⁴⁹ Like the limits for existing coke oven sources, the limits for “new [coke oven] sources” were to be promulgated by December 31, 1992. See 42 U.S.C. Sec. 7412(d)(8)(A).

⁵⁰ 42 U.S.C. Sec. 7412(a)(4) (emphasis added).

⁵¹ 42 CFR Sec. 63.300(b). Except for certain specified facilities which were under construction when the 1990 Clean Air Act amendments were passed, the date at which existing design capacity is deemed established under the regulation is November 15, 1990, the date of the 1990 amendments.

regard to cost.⁵² As the Jewell Smokeless nonrecovery plant in Virginia was the best-performing coke oven plant in the United States, one would have expected it to have been the model for EPA's new source standards.⁵³ Indeed, Congress specified that, in setting new source limits for coke oven facilities, the agency "shall evaluate . . . the Jewell design Thompson non-recovery coke oven batteries and other non-recovery coke oven technologies."⁵⁴ Nonetheless, the negotiated rulemaking committee chose to set two new source standards, one for nonrecovery batteries and one for by-product recovery batteries. New sources choosing nonrecovery technology must meet a limit of 0.0% leaking doors, lids, and offtakes, while new sources choosing by-product recovery technology need only outperform the 2010 limits: 4.0% leaking doors for tall and foundry doors, 3.3% leaking doors for other doors, 0.4% leaking lids, and 2.5% leaking offtakes.⁵⁵

A final noteworthy feature of the negotiated rule is its requirement that compliance monitoring be done on a daily basis, by "certified observers" who are independent of the coke oven facility, but whose funding comes from the industry.⁵⁶ Although there have been problems in securing the true "independence" of the observers,⁵⁷ there seems to be little question that the

⁵² See 42 U.S.C. Sec. 7412(d)(3).

⁵³ The Jewell Smokeless plant certainly would seem to be a "similar source" within the meaning of Section 112. Although the powerful by-product recovery faction of the industry argued to the negotiated rulemaking committee that the coke produced by the nonrecovery process was of inferior quality, the committee apparently was not convinced on this score. Phone conversation with Roy Huntley, *supra* note 33; phone conversation with Marvin Branscomb, *supra* note 30. And, while the two types of plants differ in the fact that one produces by-products while the other does not, the clear purpose of both is to produce coke.

⁵⁴ See 42 U.S.C. Sec. 7412(d)(8)(A).

⁵⁵ Compare 42 CFR Sec. 63.303(b) (new source standards for nonrecovery batteries) with 42 CFR Sec. 63.302(b), (c) & (d) (new source standards for new by-product recovery batteries). A new by-product recovery source must either (a) meet the limits for a new nonrecovery source or (b) utilize "a new recovery technology, including but not limited to larger size ovens, operation under negative pressure, and processes with emission points different from those regulated under this [regulation]," and meet emission limits that are "less than" the 2010 limits.

⁵⁶ See 42 CFR Sec. 63.301 (definition of "certified observer") and Sec. 63.309 (observations to be done seven days a week when the plant is operating).

⁵⁷ The rule calls for the observers to be employed by EPA, but the agency later concluded that it did not have the authority to act as an "employer" in this capacity. Reportedly, at least in some areas of the country, the "independent" observer thus is not only paid by the coke oven facility, but actually has an office at the plant, and is tantamount to a company employee. Apparently,

rule has enhanced both the frequency and the accuracy of the compliance monitoring. By all accounts, these improvements to the monitoring routine are a direct result of the negotiated rulemaking process.⁵⁸

Overall, however, the rule fashioned by the negotiators was not designed to secure optimal environmental performance from coke oven facilities. The rule provides a framework wherein facilities are assured that, at least until the 2020 statutory target date for health-based limits, emission limits will be attainable through the use of inferior, pre-1993 technology.⁵⁹ Indeed, an EPA official noted at the time that companies choosing the “extension track” would be assured that any improvements made to their plants when the rule went into effect in 1993 would be the last they were required to make for almost 30 years.⁶⁰ Although this could change if the agency decides to tighten the 2010 limits before the 2007 deadline,⁶¹ the regulation clearly is not designed to encourage diffusion of the cleaner (nonrecovery) technology within the industry, much less to spur any further wholesale improvements in coke oven technology. Further, while EPA touted the negotiated rule as a triumph for “environmental justice” (because coke oven plants tend to be located in heavily-industrialized, lower-income areas),⁶² the effect of

there is a move afoot to have state and/or local government assume employment responsibility for the certified observers. Phone conversation with Roy Huntley, *supra* note 33.

⁵⁸ EPA’s Roy Huntley recalls that this was not an item that had been sought by EPA or environmental group representatives, but rather was something that the industry representatives simply offered, at one negotiating session, to do. *Id.* Presumably, industry representatives believed that this would help them achieve their broader goals at the negotiations. Michael Wright of the Steelworkers union recalls that this item was not viewed as a major concession by the industry. Phone conversation with Michael Wright, *supra* note 33.

⁵⁹ Presumably, unless Congress relaxes the requirements of Section 112 at the request of the steel industry, any meaningful health-based standard set by EPA (which, as noted, is required by Section 112 to ensure that the cancer risk is no more than one in one million) would effectively require a move to nonrecovery technology.

⁶⁰ This comment is attributed to William G. Rosenberg, Assistant Administrator for Air and Radiation. See *Environment Reporter*, *supra* note 19 (“Rosenberg said companies may tend to opt for the [extended compliance track] because any changes to their plants would not have to be revamped again for another 30 years.”).

⁶¹ The regulation leaves open this possibility. 40 CFR Sec. 63.304(b)(3) states that the specified limits for 2010 will apply “unless the Administrator [of EPA] promulgates more stringent limits.”

⁶² *E.g.*, “Final Rule on Coke Ovens Means Victory for ‘Environmental Justice,’ Browner Says,” *Environment Reporter*, BNA, Vol. 24, October 22, 1993, 1169.

the negotiated new source standards will be to discourage the use of the cleaner technology in those areas until at least 2020.

This is not to say that the result achieved by the negotiated rulemaking committee may not represent an appropriate balancing of environmental and economic concerns in its approach to a troubled industry. A major stumbling block to tying emission limits to the performance of nonrecovery technology, apparently, was the relatively high capital cost of replacing an existing by-product recovery battery with a new nonrecovery battery.⁶³ In addition, there was a concern about jobs. A nonrecovery facility typically employs fewer workers than a by-product recovery facility. Requiring improved performance at existing by-product recovery plants, however, actually created jobs.⁶⁴ Negotiated rulemaking appears to have been an ideal vehicle for the discussion of these issues, and for the sharing of information that appears to have been necessary to convince the environmental group representatives to accept the less stringent emission limitations favored by industry.⁶⁵

However, had the goal instead been to “push” the industry toward markedly better technology, and thus to risk some short-term dislocation within the industry, it is not at all clear that negotiation would have been the best approach. The fact that EPA so grossly underestimated the performance capability of even the existing by-product recovery technology suggests that the agency’s limited resources were directed more at ensuring a “successful” negotiation than at ensuring that its technological and economic data base was a reliable one.⁶⁶ Had EPA instead used those resources to take a hard look at what the industry could do, now and

⁶³ According to EPA consultant Marvin Branscomb, replacing a by-product recovery battery with a nonrecovery battery requires reconstruction of the entire surrounding structure. Phone conversation with Marvin Branscomb, *supra* note 30.

⁶⁴ Phone conversation with Michael Wright of the Steelworkers Union, *supra* at note 33.

⁶⁵ EPA also credits negotiated rulemaking for having kept the coke oven rule out of the courts. Phone conversation with EPA’s Amanda Agnew, *supra* note 31. Most of the credit for this properly goes to Congress, however, for having devised a statutory “default” standard for the extension track -- which would have gone into effect had a standard not been negotiated by December 31, 1992 -- that was more stringent than what the steel industry was able to obtain through negotiation. *See* note 30, *supra*, and accompanying text.

⁶⁶ Reportedly, the negotiated rulemaking process took an “immense” amount of agency resources. Phone conversation with EPA engineer Roy Huntley, *supra* at note 33. Most of the performance and cost data used in the negotiations apparently came from the steel industry and from the union. Throughout the negotiations, steel industry representatives insisted that the emission reductions being considered would be extremely expensive, and extremely difficult to meet. *Id.*; phone conversation Marvin Branscomb, *supra* note 30; phone conversation with Michael Wright, *supra* note 33.

in the future, it is likely that the agency could have crafted a rule that met the environmental goals of the Clean Air Act, and that created meaningful incentives for the use of better technology.⁶⁷

The Wood Furniture Coatings Rule

Another Section 112 regulation that was drafted, in large part, through negotiated rulemaking was the hazardous air pollutant emission standard for the wood furniture industry. After a series of public meetings with representatives from industry, environmental groups, and state government in late 1992 and early 1993, EPA convened a negotiated rulemaking committee to attempt to formulate a rule governing wood furniture (surface coatings) nationwide. The committee held its first meeting in July 1993, and a proposed rule, largely drafted by the committee, was issued in December 1994. The timing of this promulgation likely was influenced by (if not wholly determined by) the fact that the Sierra Club, a private, non-profit environmental group, had sued EPA in 1993 to compel the issuance of several rules under Section 112, and that a consent decree entered in that case called for the promulgation of this proposed rule by November 21, 1994.⁶⁸ The final rule -- virtually unchanged from the proposed rule -- was promulgated on December 7, 1995,⁶⁹ although portions of the rule were challenged in court by the chemical industry.⁷⁰

Based on the committee's work, EPA determined that wood furniture manufacturers performed four basic operations in producing a finished product -- finishing, gluing, cleaning and washoff -- and the proposed rule contained standards for each. All but the gluing operation

⁶⁷ The potential economic viability of the nonrecovery technology even in retrofitted existing plants is highlighted by the fact that Inland Steel currently is replacing by-product recovery batteries with nonrecovery batteries at one of its plants. *Id.* The key economic factor there appears to be the energy savings that are available through the use of the nonrecovery technology. Phone conversation with Marvin Branscomb, *supra* note 30.

⁶⁸ *Sierra Club v. EPA*, United States District Court for the District of Columbia, No. 93-0124; Consent Decree entered February 23, 1994.

⁶⁹ See 60 Fed. Reg. 62936, codified at 40 C.F.R. Sec. 63.800, *et seq.*

⁷⁰ In three separate actions filed in the United States Court of Appeals for the District of Columbia, the Chemical Manufacturer's Association, the Society of the Plastics Industry, and the Halogenated Solvents Industry challenged that portion of the rule that lists certain chemicals as VHAPs (Volatile Hazardous Air Pollutants) of Potential Concern. See Coglianese, *supra* note 8, at 38, n. 187, and 40. The rule requires facilities to monitor their use of these designated VHAPs and establish a "baseline" annual usage. Any increase above this baseline that did not meet one of four designated criteria is to result in efforts by the facility to decrease its use of these chemicals, so long as the facility and the state agree that such reduction would be practical.

standards were drafted by the committee. The standards for the gluing operations were developed “outside of the regulatory negotiation process, because adhesive suppliers were not represented on the Committee.”⁷¹ EPA estimated that more than 11,000 facilities were included within the wood furniture industrial source category, and that approximately 750 of these would be considered “major” (as defined by the rule), and thus subject to these regulations under Section 112.⁷²

As EPA noted in the preamble to the proposed regulation, “a regulatory negotiation process . . . often requires concessions from some parties in exchange for concessions from other parties.”⁷³ Considered as a whole, the wood furniture rule might well be viewed as a compromise of the stringency of emission levels in exchange for a clear focus on pollution prevention (as opposed to simply “end-of-pipe” emission control).

For example, Section 112(d) specifies that EPA “may distinguish among classes, types, and sizes of sources within a category or subcategory in establishing [technology-based] standards” for the emission of hazardous air pollutants. Rather than distinguish among the technological and economic capabilities of particular wood furniture industry segments, however, the committee proposed -- and EPA accepted -- an industry-wide standard. Accordingly, EPA dismissed the suggestion that it require the use of “finishing materials with a very low or zero HAP [hazardous air pollutant] content,” on the basis that such materials “have not been demonstrated to be feasible *for all industry segments*.”⁷⁴ Had EPA divided the industry into subcategories for regulatory purposes, however, it appears that lower emissions of hazardous air pollutants could have been achieved in certain sectors through the required use of these finishing materials where such use *would* be feasible.⁷⁵

⁷¹ See EPA Proposed NESHAP for Wood Furniture Manufacturing Operations, 59 Fed. Reg. 62652 (Dec. 6, 1994), *reprinted in Environment Reporter*, BNA, Vol. 25, December 9, 1994, p. 1570, 1572.

⁷² *Id.* at 1582.

⁷³ *Id.* at 1572.

⁷⁴ *Id.* at 1585 (emphasis added).

⁷⁵ The preamble to the proposed rule indicates that the committee *had* divided the industry into several subcategories -- such as kitchen cabinet manufacturers, residential furniture manufacturers, upholstered furniture manufacturers, etc. -- for other purposes. *Id.* at 1584.

Further, in the part of the rule dealing with restrictions on certain work practices known to be associated with the release of hazardous air pollutants,⁷⁶ the committee specified a list of solvents to be forbidden from use in cleaning or “washoff” activities. Agency technical personnel believed that the committee’s list of the chemicals to be so restricted was too narrow. As noted by EPA in the preamble:

Some agency officials have expressed concern that the proposed rule only restricts the use of EPA type A and type B1/B2 carcinogens in cleaning and washoff solvents. They are concerned that restricting the use of only these chemicals implies that they are worse than other HAP [hazardous air pollutants]. They are also concerned that the rule draws a clear line between type B and type C carcinogens, although the scientific evidence does not suggest such a clear distinction. For example, some pollutants on the HAP list are designate type B/C because the data cannot clearly support a designation of type B or C. The proposed rule does not address these pollutants. Finally, the Agency is planning to update [its] risk assessment guidelines. Under these revised guidelines, the terms type A and type B carcinogens are likely to be meaningless.⁷⁷

Here again, despite these technical concerns, EPA simply accepted the proposed rule as written by the negotiated rulemaking committee: “The Committee agreed to restrict the use of type A and type B1/B2 carcinogens only, so EPA is proposing the rule using this approach.”⁷⁸

While the rule drafted by the committee is less stringent than it likely could have been, however, it *is* designed to encourage pollution prevention, and could ultimately result in changes in technology and practices that reduce emissions below the levels required by the rule. Further, the emphasis on pollution prevention has the advantage of providing protection both to the environment and to workers. Rather than focusing on the use of control technology to reduce emissions, the committee endeavored to select a format that would “accommodate multiple compliance techniques for the various industry segments.”⁷⁹ For finishing operations, then, the committee chose to express the required emission limit in terms of kg (or pounds) of volatile hazardous air pollutants emitted per kg (or pounds) of solids contained in the finishing materials

⁷⁶ Section 112(h) of the Clean Air Act specifically requires the inclusion of work practice standards for sources of hazardous air pollution for which a point source emission standard would not be feasible.

⁷⁷ *Environment Reporter*, *supra* note 71, at 1591.

⁷⁸ *Id.*

⁷⁹ *Id.* at 1586.

used. This method of expressing the limit was chosen, noted EPA, because “sources are encouraged to reduce the quantity of HAP through reformulation methods.”⁸⁰

Significant attention was paid to pollution prevention in the drafting of work practice rules as well. As noted above, the use of certain solvents is banned in cleaning and washoff operations. In addition, the use of solvents in spray booth cleaning is prohibited except in limited circumstances, and sources are required to maintain a “solvent accounting system” to track the use of solvents in cleaning and washoff. As noted by the agency, “although it cannot be assumed that it will actually result in . . . reduction, the cleaning and washoff solvent accounting system may prompt facilities to eliminate inefficient uses of solvents.”⁸¹

The fact that this rule included a substantial emphasis on pollution prevention is not surprising. Both the decentralized industry profile (with thousands of small shops instead of a few large ones), and the relatively straightforward and uncomplicated opportunities for chemical substitution and use reduction, made this industry an ideal candidate for pollution prevention. Nonetheless, it does appear that the use of negotiated rulemaking facilitated the agency’s focus on pollution prevention in the development of the rule. It seems likely that the active participation of industry representatives (who are in the best position to identify productive opportunities for pollution prevention) helped to both deepen and legitimize the committee’s efforts to build pollution prevention into the rule.

Moreover, the committee negotiations produced an agreement, *outside of the parameters of the rule*, under which the industry will prepare a semiannual “trends report,” beginning in 1994, which is to contain “a brief discussion of technologies being used by the industry to reduce emissions, and a discussion of evolving technologies including new finishing materials, adhesives, and improved application equipment.” This agreement reflects the belief -- apparently shared by many committee members -- that “new, lower emitting (both VOC and HAP) technologies . . . are . . . on the threshold of demonstration.”⁸² In addition, to help determine whether the rule actually is resulting in the targeted reductions in hazardous air pollutant emissions, and to determine whether those emission reductions are being met through the substitution of other hazardous chemicals that are *not* regulated as hazardous air pollutants, the trends report is to include a chemical use and emission survey from a representative sample of the industry.⁸³

⁸⁰ *Id.* at 1593.

⁸¹ *Id.*

⁸² *Id.* at 1598.

⁸³ *Id.* (“Because the emission limits for finishing materials can be met through substitution of non-HAP VOCs [volatile organic chemicals] for HAP, and some non-HAP’s can be as hazardous as the listed HAP’s, [the committee] felt it was important to track emissions of other

Evaluation

The following table summarizes the results of these three negotiated rulemakings in terms of the substantive criteria suggested at the outset: environmental/public health protection and technological change.

	Diffusion	Innovation	Short-Term Env't. Gain	Long-Term Env't. Gain
Woodstoves	+/-	-	+	-
Coke Ovens	+/-	-	+	-
Wood Furniture	+(PP)	+(PP)	+	+

The first two columns focus on the particular rulemaking's potential to effect technological change within the regulated industry, where "diffusion" refers to the diffusion of an environmentally-superior *existing* technology within the industry, and "innovation" refers to the development of a *new* technology that either produces greater environmental gains than existing technology, or produces equal gains at a lower cost. The second two columns refer to the rulemaking's potential to effect improvements in public health or the environment, where "short-term" gains are those that are achieved before new and better technology is developed, and "long-term" gains are those that are achieved when new and better technology is developed and fully implemented.

The woodstoves rulemaking did not seek to push the envelope of woodstove technology, and focused instead on the diffusion of existing control technology. It is assigned a "+/-" rating in the Diffusion column because it set a different emission standard for each of the two types of woodstove technology on the market, rather than seeking to devise a standard that would diffuse the superior technology throughout the industry. This resulted in short-term environmental gain, but did not create a strong, consistent signal designed to encourage the kind of innovation in woodstove technology that might produce greater environmental gain in the long-term.

The profile for the coke oven rule is quite similar. Rather than seeking to diffuse the cleaner existing (nonrecovery) technology, the coke oven rule focused on the use of readily-

pollutants from the industry to ensure that materials of equal or greater toxicity were not being substituted for HAP . . .")

available control techniques to improve the performance of the dominant existing (by-product recovery) technology, and has resulted in short-term environmental gain. Further, by setting a standard for new facilities that is not tied to the performance of the cleaner existing technology, and by setting a 2010 standard for existing facilities that many firms were meeting easily in 1993, the negotiated rule provides clear incentives for keeping the dirtier technology in operation longer, thus actually reducing long-term environmental gain.

The wood furniture coatings rule, in contrast, has both a focus on pollution prevention -- denoted as “+(PP)” -- and a focus on innovation. It can be expected to diffuse existing pollution prevention technologies and, especially given industry’s agreement to prepare the semiannual trends report, has a real potential to produce innovation (and, concomitantly, to produce long-term environmental gain).

NEGOTIATED IMPLEMENTATION AND THE U.S. EPA

In contrast to its role when it is *enforcing* a regulatory standard (see below), EPA’s role in *implementing* the standard (that is, when it addresses the question of the timing and the extent of the applicability of the standard to a particular firm) is a circumscribed one. Nonetheless, there are circumstances in which the agency has attempted to use negotiation at this stage of the process to encourage innovation and/or incidental environmental or public health gains.

Innovation Waivers

Various United States environmental statutes have had provisions allowing EPA to issue *innovation waivers* to qualifying firms, thus allowing them additional time to develop innovative approaches to compliance. The Clean Air Act and Clean Water Act both contain provisions authorizing EPA to grant innovation waivers in certain circumstances. Under these provisions, EPA is authorized to extend the deadline by which a firm must meet emission or effluent limitations, so long as the agency is persuaded that the firm is actively pursuing an innovative approach to compliance that shows real promise of coming to fruition. Innovation waivers are meant to focus squarely on the innovation of new technology, and are not designed to promote diffusion of an existing technology.⁸⁴

⁸⁴ Section 111(j) of the Clean Air Act, 42 U.S.C. Sec. 7411(j), authorizes a waiver of new source performance standards, for up to four years after the source begins operation, “to encourage the use of an innovative technological system or systems of continuous emission reduction.” Section 301(k) of the Clean Water Act, 33 U.S.C. Sec. 1311(k), authorizes a waiver of Best Available Technology Economically Achievable (BAT) and Best Conventional Technology (BCT) standards, for up to two years, to allow the development of “an innovative production process . . . or . . . innovative control technique” that results in a “significantly

In concept, the innovation waiver makes a great deal of sense. Development of an innovative idea into an operational reality -- which often requires several periods of trial and error -- can take substantial time, during which a firm might otherwise find itself liable for penalties for violations of emission or effluent standards. The innovation waiver exempts the firm from such penalties during a designated trial period, and offers it the prospect of the cost savings that may be derived from the development of a superior technology. Although it may be unrealistic to expect EPA to use innovation waivers to promote radical process innovation, because of the long time generally needed to develop the innovation, the agency might well use such waivers to encourage both incremental process innovation and the acceleration of radical innovation already underway.

In practice, however, innovation waivers have been used sparingly by EPA, both because industry has been unsure of their application (and thus has been wary of risking non-compliance), and because the agency has not encouraged their use. Success will require EPA to give early, clear, and certain signals to the firm, thus minimizing the risk of its technology being found unacceptable. Furthermore, good faith efforts resulting in significant, though not complete, achievement of the pollution reduction goal may need be rewarded by "fail-soft" enforcement strategies, such as a reduction of otherwise applicable penalties, if industry is to be persuaded to

greater" effluent reduction than presently required, or to allow the development of "an innovative system" that achieves the effluent limitation presently required and "has the potential for significantly lower costs" than currently available technology. (Section 301(k) specifies that that two-year waiver period is to run from "the date for compliance . . . which would otherwise be applicable under" those sections of the Clean Water Act requiring compliance with the BAT and BCT standards. Those sections, in turn, specify a final compliance date of "in no case later than March 31, 1989." *See* Sections 301(b)(2)(A) and (b)(2)(E), 33 U.S.C. Sec. 1311(b)(2)(A) & (b)(2)(E). However, since Section 301(d) requires EPA to periodically review and revise these standards "according to the procedure established under [those] paragraph[s]," the agency presumably is authorized to grant innovation waivers for the revised standards as well. *See* 33 U.S.C. Sec. 1311(d).) The Resource Conservation and Recovery Act (RCRA), the major statute governing the generation, transport, and disposal of hazardous waste, also has a provision authorizing a form of innovation waiver, but it focuses only on remediation technologies. Section 3004(g) of RCRA, 42 U.S.C. Sec. 6925(g), authorizes EPA to issue a "research, development, and demonstration permit" for the use of "an innovative and experimental hazardous waste treatment technology or process." Such a permit, which may be issued for up to three years, in one-year intervals, allows the permittee (either the generator of the waste or a waste treatment facility) to utilize the technology or process to treat specified types and quantities of hazardous waste, in order to determine the viability and effectiveness of the technology or process, even though EPA waste treatment standards might not otherwise be attained. EPA may cancel the permit at any time it determines that such action is "necessary to protect human health and the environment."

take a technological and legal risk that the innovation waiver often poses. In this context, one can make a case for "risk sharing" between government and industry in the interest of fostering innovative solutions.⁸⁵

Extra-Statutory Efforts: Project XL

In an effort to add to those opportunities for flexibility that are specifically authorized by statute, such as innovation waivers, EPA sometimes endeavors to incorporate flexibility into its regulatory implementation by agency fiat. A recent example is the Clinton EPA's *Excellence in Leadership Project*, popularly known as *Project XL*. The White House announced this program, with considerable fanfare, in a 1995 policy statement,⁸⁶ and EPA published a set of guidelines for approving Project XL proposals in 1996.⁸⁷

The basic idea of Project XL is to allow regulatory flexibility, in return for superior environmental performance, at selected facilities, on a facility-by-facility basis. As conceived, the cornerstone on which Project XL is to rest is negotiation among the regulators, the facility owners, and the affected community, resulting in a Final Project Agreement (FPA) governing environmental performance at the facility. The underlying rationale for Project XL is the belief that, for appropriately selected (new and existing) facilities, such negotiations can produce a plan for limiting pollutant discharge from the facility that will both cost *less*, and reduce environmental and public health risks *more*, than would have been the case under existing regulations.⁸⁸ Although the program is still in its infancy, it is probably fair to say that it has

⁸⁵ For a detailed discussion of the early EPA experience with innovation waivers, see N. Ashford, C. Ayers, and R. Stone, "Using Regulation to Change the Market for Innovation," *Harvard Environmental Law Review*, Volume 9, p. 419, at 443-462 (1985).

⁸⁶ W. Clinton & A. Gore, *White House Policy on Reinventing Environmental Regulation*, Executive Office of the President (1995).

⁸⁷ USEPA Office of Policy, Planning and Evaluation, *Principles for Development of Project XL Final Project Agreements* (1996)

⁸⁸ Negotiation between the agency and the facility owner (sometimes also involving environmental groups and/or local community groups) is commonplace in the permitting process. Project XL negotiations are different, however, in that they purport to *replace* current standards with an alternative approach, while traditional permit negotiations generally are over the proper way to *apply* current standards to the facility in question. Thus, XL purports to be the negotiation of environmental policy, albeit on a facility-by-facility basis.

been far from a clear success. Few FPAs have been negotiated, and some of those that have are the subject of considerable debate and opposition.⁸⁹

A fundamental problem with Project XL is that it envisions a kind of regulatory flexibility that has not been authorized by Congress. Because it is not authorized by statute, the regulatory plan set forth in the negotiated FPA does not supersede existing regulations. Thus, to the extent that the regulatory “flexibility” negotiated by the participants involves a failure to comply with certain regulations (even if also involves *outperforming* certain other regulations), the facility will be operating in violation of the law. And, since relief from existing regulations is precisely what makes this program attractive to the business community, most FPAs can be expected to involve violations of applicable environmental regulations. Indeed, one source reports that a current expression among EPA staff familiar with Project XL is that “if it ain’t illegal, it ain’t XL.”⁹⁰ This makes Project XL an unsafe bet for the participating firm. For, even if EPA and the state give informal assurances that they will not take enforcement action that is inconsistent with the FPA, the agencies cannot guarantee that such enforcement action will not be taken under the “citizen suit” provision of the applicable federal statute.⁹¹

In theory, the threat of a citizen enforcement suit was to be eradicated (or at least greatly minimized) by the inclusion of the affected community in the negotiation process. Yet this points to a second fundamental problem with XL: the difficulty of defining the relevant “community.” Is it limited to those living near the plant, or does it include national and regional environmental groups with an interest in the issue? Does it include labor? Does it include those who speak on behalf of the protection of sensitive populations, or on behalf of disadvantaged neighborhoods? These are high-stakes issues for two reasons.

First, any interested party who is excluded from the negotiation process is less likely to be satisfied with the result, and thus is more likely to challenge it, through a citizen enforcement suit, a public organizing and publicity campaign, or both. Probably the best-known Project XL agreement to date, for example, pertains to Intel Corporation’s newest semiconductor production site in Chandler, Arizona. The five-year project agreement, which covers operations at a 720-acre site, was negotiated among the company, federal and state regulators, and five Chandler

⁸⁹ Reportedly, as of December, 1997, only five FPAs have been finalized. D. Hanson, “An XL Project Goes Smoothly,” *Chemical & Engineering News*, December 8, 1997, 18.

⁹⁰ J. Mazurek, *Making Microchips: The Environmental Policy Implications of Economic Restructuring*, Pre-publication Draft, July 1997 (forthcoming 1998, MIT Press), at 152.

⁹¹ Most federal environmental statutes, including the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act, have provisions that afford persons who are harmed by violations of the statute a right to enforce the law against the violator in federal court, and to seek injunctive relief (to secure compliance), civil penalties, and attorneys fees, in situations where the agencies have failed to enforce the law.

residents. Although the participants apparently are satisfied with the FPA negotiated through this process, many non-participants are not. Two vociferous critics have been the Silicon Valley Toxics Coalition, a California-based group that addresses pollution problems in the semiconductor industry, and the Natural Resources Defense Council, a national environmental group. These two groups, who are concerned about the national and industry-wide implications of this agreement as much as, if not more than, its local environmental impacts, have mounted a high-profile campaign against the Intel agreement, and against Project XL itself.⁹² This level of opposition clearly indicates that the negotiating committee that devised the regulatory plan for the Intel facility was *not* representative of the “relevant” community.

Moreover, the composition of the negotiating committee is of obvious *substantive* importance as well. If important constituencies are left underrepresented, the agreement negotiated is much less likely to be the “right” result. The five community representatives who helped negotiate the Intel agreement were also members of a pre-existing Intel Community Advisory Panel, and were generally representative of a community sentiment that values the important role that Intel has played over the past sixteen years in helping transform Chandler from a small agrarian town into the third fastest-growing city in the United States.⁹³ While this obviously is a legitimate perspective, it may well not be the one that places environmental and public health protection (much less the health concerns of particularly sensitive populations) at the forefront. Indeed, the tendency of local interests to sacrifice long-term environmental and public health interests in favor of short-term economic gain was one of the factors that drove Congress to begin setting *national* pollution standards in the 1970s.

One of the beliefs underlying Project XL is that sufficient public involvement and scrutiny at a site can greatly diminish the need for a national regulatory presence. This is unlikely to be the case, however, unless the “public” is broadly and fairly represented, and unless its “involvement” is truly meaningful. At the Intel site, it is not at all clear that the regulatory flexibility negotiated by Intel -- such as relaxed permitting requirements for new product lines -- is offset by “superior” environmental performance. Based on a comparison of projected toxic emissions from the new Intel facility to reported emissions from similarly-sized semiconductor facilities from 1992 through 1994, EPA was able to conclude only that “Intel is well within, if not exceeding, the standard for the industry.”⁹⁴ The Intel facility, which went on-line in 1996, might reasonably be expected to be *outperforming* its older competitors, strictly on the basis of its more advanced production technology, before making any extra efforts to qualify for Project

⁹² An undated flyer circulated by the Silicon Valley Toxics Coalition to environmental activists throughout the country states that “‘Project XL’ translates to ‘EXtra LLenient’ De-regulation”.

⁹³ Mazurek, *supra* note 90, at 146, 166.

⁹⁴ USEPA, Office of Policy, Planning and Evaluation, *Response to Comments on Intel’s Final Project Agreement* (1996).

XL status. The fact that the facility is only expected to be meeting the pre-existing industry standard, then, is far from a ringing endorsement of the success of Project XL.

Had groups such as the Silicon Valley Toxics Coalition and the Natural Resources Defense Council been involved as full-fledged negotiating participants at the Intel site, it is likely that any resultant FPA would have been substantively different from the one actually negotiated. It is questionable, however, whether Intel would have agreed to negotiate a FPA with such groups participating. Indeed, when these and other environmental groups requested that the Intel agreement be augmented with legally-enforceable pollution prevention requirements, Intel was not receptive.

[B]oth Intel and EPA countered that additional pollution prevention requirements requested by environmental groups would give external actors too much control over the XL process. As one of [the new Intel facility's] chief environmental architects incredulously asked a [*Washington*] *Post* reporter: "Citizens are going to make decisions . . . that are binding on Fortune 500 Companies?"⁹⁵

Although this clearly does not represent the sentiments of all companies regarding all situations, the hesitancy that many firms would feel about sitting down as equal participants with environmental groups in site-specific negotiations is another factor that would tend to limit the success of an initiative such as Project XL. In addition, meaningful involvement of the public, even where it is acceptable to the company, likely would considerably extend the time necessary to develop the FPA.

EPA's more recent statements indicate that the agency's enthusiasm for Project XL has been tempered considerably. Although it is not abandoning the XL initiative, EPA appears to have recognized that the site-specific negotiated solution is fraught with potential problems, and that -- like negotiated rulemaking -- it cannot be expected to be done successfully without a substantial commitment of time and resources.⁹⁶ A Project XL success story makes the point. The agency has recently completed negotiations on what has been characterized as a "small, focused" FPA involving an OSi Specialties organo-silicone plant on the Ohio River.⁹⁷ According to a company attorney who participated in the process, the negotiations were "enormously burdensome" for the agency. "Unless they can think of a more efficient way to do

⁹⁵ *Id.* at 165 (quoting from C. Skrzycki, "Some State Environmental Chiefs Want EPA Off the Stage," *The Washington Post*, June 28, 1997, pp. G1-G2.).

⁹⁶ USEPA Office of the Administrator, *New Directions: A Report on Regulatory Reinvention* (1997), at 1-2.

⁹⁷ D. Hanson, *supra* note 89, at 18.

it,” he opined, “I’d be surprised if the program survives.”⁹⁸ To some degree, of course, the amount of time and resources that the agency currently devotes to a Project XL negotiation is a function of the relative novelty of the XL concept within EPA, the level of mistrust of the XL process within the environmental community, and the pressure on the agency to “make good” on its promise to deliver increased regulatory flexibility without sacrificing environmental goals. Even if Project XL were to one day become a routinized part of EPA’s activities, however, one would expect the resource demand to continue to be substantial. Real negotiation of environmental policy, even if it is only the policy for a single facility, requires considerable effort.

NEGOTIATED COMPLIANCE AND THE U.S. EPA

Roughly 90% of firms cited with noncriminal violations of federal environmental statutes in the United States resolve the matter through a negotiated settlement (rather than through an administrative hearing or court trial).⁹⁹ The settlement of an enforcement action often offers the agency an excellent opportunity to promote pollution prevention, rather than conventional end-of-pipe control technology. The firm's attention has been commanded, and a need for creative (and less costly) approaches to compliance may well have become apparent. Outside of the enforcement process, EPA has little statutory or regulatory authority to require firms to implement pollution prevention; the regulated community can choose the means by which it will comply with federal requirements. But once an enforcement action is initiated, a window of opportunity for pollution prevention opens, because the means of achieving compliance likely will be subject to negotiation between the agency and the violator. EPA has sought to capitalize on this opportunity by encouraging the use of *Supplemental Environmental Projects* (SEPs) to promote pollution prevention.

SEPs are environmentally beneficial activities which the violator agrees to perform and/or fund as part of its settlement with EPA, and which the violator is not otherwise legally required to perform. In the settlement process, EPA and company attorneys typically agree both on a penalty and on a set of activities designed to achieve and maintain compliance. 1991, EPA adopted a SEP policy authorizing agency enforcement personnel to reduce the amount of the

⁹⁸ *Id.*, at 19 (quoting James A. Nortz, Senior Attorney for Witco Corporation, the parent company of OSi Specialties).

⁹⁹ USEPA Office of Enforcement and Compliance, *National Penalty Report, Overview of EPA Federal Penalty Practices, FY 1992* (1993).

penalty in exchange for the execution of a SEP.¹⁰⁰ Encouraged by initial results from this approach, the agency has revised and expanded its SEP policy since that time.¹⁰¹

The key to the SEP policy is the tradeoff between penalties and SEPs. Current EPA penalty policy anticipates that, unless the SEP policy is invoked, the penalty assessed in any enforcement action will be the sum of (a) the amount of the *economic benefit* gained by the violator as a result of non-compliance (typically, the investment earnings from delayed capital expenditures, together with any avoided operation and maintenance costs), and (b) a *gravity* component (calculated according to agency guidelines) that is meant to reflect the relative seriousness of the violations.¹⁰² Under the present SEP policy, SEPs may be used to reduce this amount, so long as the final penalty paid is at least as large as the *economic benefit plus 10% of the gravity component* (which EPA describes as the *minimum penalty*).

Currently, there are seven categories of acceptable SEPs: pollution prevention, public health, pollution reduction, environmental restoration and protection, assessments and audits, environmental compliance promotion, and emergency planning and preparedness. The key feature linking these various categories is the expectation that the project will result in some benefit to the environment or public health. Some SEPs, such as an off-site stream restoration project, offer direct, predictable public benefits while returning no direct benefit to the violator. Others, such as an agreement by the violator to conduct a comprehensive environmental audit of its facility, offer potential (and far less predictable) benefits both to the public and to the violator. In general, *pollution prevention* SEPs -- which involve expenditures by the violator to implement technology or practices that reduce its generation of pollution -- offer the greatest potential for the development of innovative production technologies and practices with widespread application.

So long as it does not reduce the penalty below the acceptable minimum, EPA will (depending on the assessed merits of the project) credit up to 80% of the after-tax cost of most approved SEPs (net of any savings -- such as reduced operations costs -- that the SEP may offer to the violator) against the amount of the penalty. In order to encourage pollution prevention, however, the agency revised its policy in 1995 to offer a credit of up to 100% for pollution prevention SEPs.¹⁰³

¹⁰⁰ See USEPA, *Policy on the Use of Supplemental Environmental Projects in EPA Enforcement Settlements* (February 12, 1991).

¹⁰¹ The most recent version is: USEPA, *Interim Revised Policy on the Use of Supplemental Environmental Projects in EPA Enforcement Settlements* (June 1997).

¹⁰² In practice, even when no SEP is involved, the actual penalty number negotiated between EPA and the violator often is less than the sum of these two factors.

¹⁰³ For a discussion of the workings of the SEP policy, with an emphasis on the implementation of pollution prevention SEPs, written by EPA personnel, see P. Rosenberg, D. Hindin, J.

EPA reports that, from Fiscal Year 1992 through Fiscal Year 1994, it negotiated more than 700 SEPs, with an estimated total value (*i.e.*, cost to violators) of over \$190 million. Of these, approximately 14% were pollution prevention SEPs, with an estimated total value of approximately \$57 million.¹⁰⁴ EPA estimates that these pollution prevention SEPs will reduce the discharge of toxic chemicals and the production of hazardous waste by a total of some 65 million pounds.¹⁰⁵

A case study analysis of ten pollution prevention SEPs negotiated by EPA through Fiscal Year 1992 -- selected because they reflect a range of technological responses -- found that the technologies utilized included chemical substitution, process change, and closed-loop recycling.¹⁰⁶ Representatives from all nine of the firms involved indicated support for the SEP policy. The firms were glad to have had the option to implement a pollution prevention project in exchange for some penalty reduction. They felt that the SEPs took some of the “sting” out of the enforcement process but did not eliminate the significant economic and psychological impacts of the enforcement action. Several company representatives stated that the SEP process helped their firm to recognize other opportunities for environmentally beneficial improvements.

The technological changes undertaken by firms through pollution prevention projects can be categorized according to the *locus* of the change and according to the *degree of innovation* of

Packman & G. Kraus, “EPA’s Revised SEP Policy and the Negotiation of P2 SEPs,” *Pollution Prevention Review*, Autumn, 1995, p. 1.

¹⁰⁴ Although the percentage of pollution prevention SEPs may seem small, that percentage probably at least doubles if one excludes the SEPs negotiated by EPA’s Office of Mobile Sources, which, because of the nature of the regulated community, are not likely to involve pollution prevention SEPs. In Fiscal Year 1992, for example, EPA negotiated 405 SEPs, and 187 of these were negotiated by EPA’s Office of Mobile Sources. If one looks only at the 222 SEPs that were not mobile sources SEPs, the percentage of pollution prevention SEPs for that year was 28%. See M. Becker, and N. Ashford, “Exploiting Opportunities for Pollution Prevention in EPA Enforcement Agreements,” *Environmental Science & Technology*, Vol. 29 No. 5, August 1995, American Chemical Society, pp. 220A-226A.

¹⁰⁵ Rosenberg, *et al.*, *supra* note 103, at 2, and n.3.

¹⁰⁶ M. Becker & N. Ashford, *supra* note 104. One of the settlements did not involve a SEP *per se*, but rather was an enforcement settlement that used pollution prevention as the compliance method. Of the 10 settlements studied, five involved reporting violations under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (Form R, Toxics Release Inventory data reporting), two stemmed from Clean Water Act violations, one from a Clean Air Act violation, and one from a Resource Conservation and Recovery Act violation. The predominance in the study sample of EPCRA cases involving failure to report toxic emissions on a Form R reflects the relatively large number of pollution prevention SEPs in the larger sample population that were negotiated in EPCRA 313 settlements.

the change. The majority of technological changes made by the SEP case study firms were diffusion-driven. A smaller number can be considered incremental innovations, and only one case can be considered a major innovation. There was a fairly even distribution of technological changes across the spectrum of primary, secondary, and ancillary processes.¹⁰⁷ If a random case-study selection process had been used, the sample would have been more heavily weighted toward diffusion-driven changes to ancillary production processes. The larger universe of EPA settlements containing pollution prevention consisted mainly of the adoption of off-the-shelf technologies. This suggests there are unexploited opportunities in enforcement for stimulating innovative technological change. Realization of this potential likely would require changes in attitudes and knowledge levels, both within industry and within EPA. One recent move in this direction has been the agency's willingness to allow up to two years for the completion of selected pollution prevention SEPs,¹⁰⁸ as a longer-term time window is essential if more significant innovation is to take place.

REGULATORY REINVENTION AND THE U.S. EPA

Under President Clinton, the EPA has determined that fundamental changes in approach will be necessary if significant additional progress in protecting the environment is to be made, and if the environmental challenges of the future are to be resolved satisfactorily. The agency refers to this as the need for "regulatory reinvention".¹⁰⁹ In July 1994, EPA began its *Common*

¹⁰⁷ The distinction between primary, secondary, and ancillary manufacturing/production process is an important one for innovation. An example in the context of casting and plating metal screws makes the point. The primary process is the casting of the screw. The secondary process is electroplating. The ancillary process is cleaning or degreasing the screw using organic solvents. If the environmental problems facing the firm is created by the latter activity, it might be relatively easy for the firm to search for and find an alternative, non-polluting cleaning process, and no innovation would be required. If the electroplating is the process that needs to be modified, at least a new process might have to be brought into the firm--usually by the diffusion of alternative plating technology--but the firm would be uncomfortable about changing a proven method and taking a chance on altering the appearance of its product, even if it is a separate operation. The most resistance could be expected by demands on the primary process. Here innovation might be necessary and the firm is not likely to invest in developing an entirely new casting process in order to reduce a regulatory fine.

¹⁰⁸ See P. Rosenberg, *et al.*, *supra* note 103, at 9, n. 13 ("As a general rule, both sides prefer SEPs that can be completed within two years.") At the time the case study was conducted, it was generally understood within the agency that SEPs should be completed within one year.

¹⁰⁹ Project XL is also considered by EPA to be part of this regulatory reinvention program. As discussed above, however, the focus of XL is not on reinventing the regulations themselves, but rather on affording increased flexibility in the implementation of the regulations to particular facilities. The Common Sense Initiative, discussed here, is a much more broad-based -- and potentially much more far-reaching -- approach.

Sense Initiative (CSI), which it has termed the “centerpiece” of its regulatory reinvention efforts.¹¹⁰ The primary goals of CSI are to find “cleaner, cheaper, smarter” ways of reducing pollution, and to formulate proposed changes in the existing regulatory structure to effectuate them. As with Project XL, negotiation among interested parties is the means by which EPA hopes to achieve the goals of the program. Unlike XL, however, the focus of the negotiations is *industry-wide*. To carry out CSI, the agency has assembled six advisory committees, one for each of six industrial sectors: automobile manufacturing, computers and electronics, iron and steel, metal finishing, petroleum refining, and printing. Each advisory committee consists of representatives from EPA, the relevant industry sector, state and local regulatory agencies, national and local environmental groups, labor, and community organizations. The work of these committees is overseen by a separate Council, the membership of which is drawn from the same sources. The Council is chaired by the EPA Administrator, and each of the six sector committees is chaired by an EPA official. The Work of the Council and the committees is assisted by EPA staff.¹¹¹

This industry-sector structure is based on a fundamentally sound premise: that, for a variety of reasons, different industries often differ in their technological and economic potential for reducing pollution, and also in the way in which they respond to various types of regulatory signals. By bringing together people who are knowledgeable about the opportunities for reducing pollution within a particular industry, and who have a stake in how, when, and under what terms that reduction will occur, EPA hoped to harness the potential of each industry to a fuller extent than it had heretofore been able to do. The agency also hoped that, by creating an atmosphere in which innovation and flexibility were emphasized, the focus of the committees would be on pollution prevention rather than end-of-pipe pollution control.¹¹² And, if the CSI approach proved to be a success, EPA hoped to expand the initiative to other industry segments in the future.

Thus far, the results of the CSI experiment have been mixed. On the one hand, as EPA points out, the initiative has brought together six groups of people representing a diverse set of interests, and has encouraged an ongoing dialogue on issues that are important to the future development of environmental policy. As summarized by EPA:

¹¹⁰ United States General Accounting Office, *Regulatory Reinvention: EPA’s Common Sense Initiative Needs an Improved Operating Framework and Progress Measures* (July 1997) (hereinafter “GAO Report”), at 4.

¹¹¹ *Id.* at 13-14. The Council and committees are organized under, and are subject to, the Federal Advisory Committee Act. *See* note 4, *supra*.

¹¹² *See* USEPA Office of the Administrator, *Common Sense Initiative: Administrator’s Update* (July 29, 1994), at 1.

In that regard a very significant, but non-quantifiable, accomplishment of CSI has been reducing barriers between formerly adversarial parties. A major success of CSI has been getting the parties to the table, getting them to agree to talk, getting them, in fact, to engage in substantive discussions on issues in a mutually respectful manner, and having the parties willingly agree to continue to invest their own time and energy to maintain and enhance the discussions.¹¹³

This is a valid point. If CSI succeeds at nothing more than promoting a better understanding of the issues, and of each other, among those likely to participate in environmental policy-making and implementation affecting these industries, it arguably will have had a positive impact.

On the other hand, however, CSI has been criticized for its lack of substantive results. A series of reviews of CSI have raised this issue, the most recent of which is a report issued in July 1997 by the U.S. General Accounting Office (GAO), a research arm of Congress.¹¹⁴ One of GAO's primary conclusions is that

[i]n the almost 3 years the Initiative has been under way, it has produced three formal recommendations to EPA, none of which has suggested the types of changes in the existing approach to environmental management that EPA expected.¹¹⁵

In general, GAO (and others) have found that the CSI process moves considerably more slowly than most of the participants would like. The reasons for this, GAO found, have been multifold: the time necessary to collect and analyze data; the variations in the participants' understanding of the technical issues involved; the time taken by the participants "in reaching consensus on the approaches needed to address large, complex issues or policies;" the time taken by participants "discussing how they would carry out their work and developing their own operating standards;" and the difficulties experienced by some participants in making the necessary time

¹¹³ Letter of July 3, 1997 from J. Charles Fox, Associate Administrator, Office of Reinvention, USEPA, to Peter F. Guerrero, U.S. General Accounting Office, *reprinted in* GAO Report, *supra* note 110, at 47.

¹¹⁴ *See* GAO Report, *supra* note 10. *See also* The Scientific Consulting Group, Inc., *Review of the Common Sense Initiative*, (Feb. 19, 1997) (this was an outside review commissioned by EPA); United States Congress, House Committee on Transportation and Infrastructure, *An Assessment of EPA's Reinvention* (Sept. 17, 1996); T. Davies & J. Mazurek, *Industry Incentives for Environmental Improvement: Evaluation of U.S. Federal Initiatives* (Resources for the Future, Sept. 1996); USEPA Office of Inspector General, *EPA FACA Committees' Cost Increase* (Mar. 29, 1996).

¹¹⁵ GAO Report, *supra* note 110, at 5.

commitment.¹¹⁶ None of this should be particularly surprising. Indeed, when one adds to this list the overall need to establish a degree of trust among the participants in each sector group sufficient to permit a meaningful discussion on substantive issues, it is not particularly difficult to understand why substantive progress has been slow in coming. Indeed, the fact that the Initiative is still moving forward is itself a measure of progress of some import.

Nonetheless, there appears to be a growing feeling among participants that a failure to meaningfully step up the pace of substantive progress in the near future could mean the death-knell of the Initiative.¹¹⁷ The automobile and petroleum refining industries have ended their participation, and other participants have indicated that they will leave unless EPA makes changes -- in response to the recent reviews of the project -- that make for a more efficient process.¹¹⁸ To address this issue, GAO has proposed that EPA

. . . provide an improved operating framework that (1) more clearly defines the Initiative's "cleaner, cheaper, smarter" environmental protection goal -- including its expected results -- and (2) specifies how the Council and its subcommittees and workgroups will accomplish their work, clarifying issues such as how and when consensus will be achieved, how the Initiative's goal should be interpreted and applied to individual projects, and to what extent representatives of all stakeholder groups should be included in activities at each level of the Initiative, including its projects and workgroups.¹¹⁹

EPA has indicated that it will introduce reforms of this nature, but GAO faults the agency for not having done much of this at the outset. It is not at all clear, however, that this would have been the right approach. It is arguable that, had EPA attempted to dictate terms of this nature to the participants at the beginning of the process, rather than allowing the participants to first address these issues on their own, it would have engendered considerable resentment among some of the participants. Now, armed with numerous meetings' worth of information from the participants as to their thinking on these issues -- what is generally agreed to work well and be appropriate, what is generally agreed to work poorly and/or not be appropriate, and what areas will require judicious further definition from the agency -- EPA is in a position to help create a better framework to help guide these (wholly voluntary) participants.

¹¹⁶ *Id.*

¹¹⁷ See, e.g., V. LeClair, "Common Sense' Reform Initiative Falter," *Environmental Science & Technology News*, Vol. 31, No. 5, p. 222A (1997).

¹¹⁸ *Id.*; GAO Report, *supra* note 110, at 25-26.

¹¹⁹ GAO Report, *supra* note 110, at 7. In addition, "several environmental justice groups, as well as representatives from the State of Michigan," reportedly have withdrawn from the CSI negotiations. Mazurek, *supra* note 90, at 135.

Moreover, the changes envisioned by GAO are unlikely to address the more deep-seated issues that have slowed or prevented substantive results along the lines originally anticipated by EPA. It is likely that a major factor inhibiting real progress is the fact that, in contrast to negotiated rulemaking, the CSI negotiations are not proceeding within a formal legal context, with a known and meaningful set of potential consequences. In negotiated rulemaking, the participants all know that, regardless of whether they reach agreement on a proposed rule, a rule is likely to be issued. The “stakes” for each participant thus are fairly clear: if we don’t negotiate, the agency is going to go ahead and promulgate a regulation without us, and the result may be something we don’t like. In the CSI negotiations, however, the consequences of inaction are likely to be both far less clear and far less dramatic. Indeed, in most cases the failure of a negotiating committee to agree on a particular “regulatory reinvention” proposal will have no greater practical effect than simply the preservation of the *status quo*.

Accordingly, the chief factor likely to be motivating industry’s participation in the CSI negotiations is the opportunity to push for regulatory alternatives that are less expensive (to industry) than the *status quo*.¹²⁰ Industry’s interest, then, is likely to be in “streamlining” -- or eliminating -- current regulation, and not in extending the scope of regulation into new areas. This is the experience described by Lois Epstein of the Environmental Defense Fund, who is a member of the petroleum refining work group.

[Epstein] said that many in the group wanted to look at leaking above-ground storage tanks, an area not regulated by EPA, but industry would not agree to that. ‘You need some sort of stick to get the petroleum industry to talk,’ she said.¹²¹

And, since the environmental representatives should not be expected to agree to a cheaper alternative if it does not also represent increased environmental benefit, progress may be slow in coming, especially in those industry sectors where few easy and obvious “win/win” (*i.e.*, cheaper *and* cleaner) regulatory improvements present themselves.

Thus, it should not be surprising that the petroleum and automobile industries decided to abandon their participation in the CSI Initiative. Effective participation in negotiations of this nature takes a considerable commitment of resources. As noted by the American Petroleum Institute in a letter to EPA explaining the withdrawal of its member companies from the CSI negotiations, the companies “believe the refining industry’s resources . . . can be more productively directed toward other approaches.”¹²² Or, as summarized more colloquially by

¹²⁰ As noted by GAO, “[i]n carrying out the Initiative, ‘cleaner’ is seen as the principal interest of the environmental representatives and ‘cheaper’ is seen as the principal interest of the industry representatives.” GAO Report, *supra* note 110, at 23-24.

¹²¹ LeClair, *supra* note 117, at 222A.

¹²² *Id.*

Epstein of the Environmental Defense Fund, “They pulled out because for them it is not the most effective way of getting what they want.”¹²³

Another systemic problem one would expect to encounter in negotiations of this nature stems from the participants’ unequal access to relevant data. If effective strategies to encourage pollution prevention are to be crafted by consensus, reliable technical information -- especially information relating to the technological potential for pollution prevention -- is likely to be important. Much of the relevant data, of course, will be in the hands of industry. Without a clear incentive to make these data available to the other participants, industry is likely to prefer to pick and choose what it will share, thus making meaningful negotiations all the more difficult. This reportedly has been a major issue, for example, in the computer and electronics work group. Firms reportedly have been reluctant to divulge information because “they feared that regulators would use data to extract further concessions,” and because they believed that environmental groups would “use any information divulged during CSI meetings to mount lawsuits.”¹²⁴ This, in turn, contributed to a sense of mistrust among the environmental group participants.¹²⁵

This is not to say that CSI is not likely to produce any meaningful results of substance. There are cleaner/cheaper opportunities in a number of industries that may be able to be realized without the “push” of additional regulatory pressure, and CSI can be expected to bring some of these to light. The metal finishing work group, for example, began a successful demonstration of a new technology for filtering chromium from air releases that should decrease chromium emissions while reducing costs by about 90%.¹²⁶ And the printing work group has been developing an education and outreach project designed “to achieve fundamental change” by incorporating the philosophy of pollution prevention into everyday work practices.¹²⁷ In general, however, the bulk of the CSI negotiations thus far reportedly have *not* focused on pollution prevention strategies.¹²⁸ If this does not change, the CSI experiment will have fallen well below EPA’s original expectations.

¹²³ *Id.*

¹²⁴ Mazurek, *supra* note 90, at 137.

¹²⁵ *Id.*

¹²⁶ LeClair, *supra* note 117, at 223A.

¹²⁷ GAO Report, *supra* note 110, at 45; *see also id.* at 38-39.

¹²⁸ As described by one source, “most of the six sector teams have proposed pilot projects that represent incremental improvements possible under the extant regulatory system. Projects are largely designed to reduce paperwork requirements, improve permitting and promote waste reduction through recycling and reuse efforts, rather than recycling.” Mazurek, *supra* note 90, at 135. *See also*: Davies and Mazurek, *supra* note 114, at 19-30; GAO Report, *supra* note 110, at

CONCLUSION

Negotiation should hardly be viewed as a panacea for the various difficulties that typically confront the environmental policy-maker. Used in the right context, however, negotiation can be a useful tool in the establishment and implementation of environmental policy. Negotiation can facilitate a better understanding of issues, concerns, facts, and positions among adversaries. It can also promote the sharing of relevant information, and can provide an opportunity for creative problem-solving. Whether negotiation will be better than other, generally more adversarial mechanisms as a means of fostering improved environmental health and safety outcomes, or of stimulating meaningful technological change, will depend on the situation in which it is used. In general, negotiation would appear to work best as a means of securing these goals in situations in which the necessary regulatory signals for improvement and innovation are already in place.

This is one of the reasons that EPA's use of *negotiated compliance*, as embodied in its SEP policy, has been as successful as it has been. To the firm that is the target of the enforcement action, the "stakes" are clear: so long as it believes it faces higher costs (in the form of a larger fine and/or higher transaction costs) if it does not identify and execute a SEP that is acceptable to EPA, the firm has a meaningful incentive to participate in good faith in the SEP process. And, because the agency has structured the program to give maximum credit for pollution prevention projects, pollution prevention often becomes the focus, *and the goal*, of the negotiations. Thus, especially because negotiation is the traditional means of resolving enforcement disputes, even outside of the SEP process, it appears to work well here. The pollution prevention results of the SEP program have been relatively modest -- mostly diffusion and, sometimes, incremental innovation -- but this is in keeping with the relatively modest nature of the financial incentives typically involved, and with the relatively short time period within which the SEP typically must be identified and completed.

One would also expect negotiation to work well in those *negotiated implementation* situations that have a clear, formal focus on technological change, such as the innovation waiver opportunities created by certain statutes. The chief signal to innovate -- the new regulatory standard -- is already in place (or clearly on the horizon) before negotiation over an innovation waiver begins, and the statute typically provides an extended period of time for the firm to develop and test the proposed innovation. Thus, so long as the new standard is stringent enough to command the firm's attention, firms should have a meaningful incentive to negotiate time to pursue an innovative compliance alternative. The fact that the innovation waiver program has thus far not lived up to expectations appears largely due to a failure of administration. This, in turn, may have contributed to what appears to be a reticence by Congress to include innovation

43-45 (three of the fifteen studies chosen for study by GAO appear to have a clear pollution prevention focus).

waiver provisions in its revisions to existing statutes. If EPA could develop and promote its innovation waiver program the way it has the SEP program, the innovation waiver might become a much more important means of securing environmentally beneficial technological change.

Negotiated rulemaking, on the other hand, is a situation in which the chief regulatory signal for environmental improvement and innovation is *not* already established, at least not in full. Rather, one of the functions of negotiation in this context is to *establish*, either in part or in full, the stringency of the regulatory standard. If the goal is innovation, this may well be problematic. If the nature of the regulated industry is such that it will require a dramatic impetus -- such as the promulgation of an unexpectedly stringent standard, or the fear that such a standard will be promulgated -- before it will be motivated to innovate, negotiated rulemaking may well be inadvisable. Since negotiated rulemaking seeks consensus, and since such an industry is unlikely to agree to a standard that it views as having a “dramatic” impact, negotiated rulemaking is unlikely to produce a standard of this nature. In such situations, negotiated rulemaking can effectively *remove* the potential to spur innovation.

In situations in which the desired technological change is likely to come more easily, negotiated rulemaking should be expected to have a better chance of success. Here, the advantages of negotiation, such as information-sharing and creative problem-solving, may work to encourage productive technological change. The key to the willingness of industry representatives to explore the technological options in good faith is likely to be tied to what they perceive the likely “default” standard to be. If they believe that, in the absence of a negotiated rule, the agency will promulgate a stringent rule on its own, their willingness to focus on creative technological solutions is likely to be higher. The agency can facilitate this process by making clear at the outset that promoting technological change will be a focus of the regulation. If technologically literate stakeholders, such as trade unions or sophisticated NGOs, are involved, the dominance of industry’s technical expertise may be minimized, and outcomes that advance the state of the technology may emerge.

Another important difference between negotiated rulemaking and negotiations over SEPs and innovation waivers, however, is that the scope of the negotiations in negotiated rulemaking is (at least) industry-wide, rather than firm-specific. Interest in the negotiations thus is much stronger, and the number of participants who must be involved, if the negotiations are to succeed, is an order of magnitude higher. Accordingly, management of the negotiation process becomes a formidable task, and the agency must have the resources to be able to keep pace. There is always the risk that the process itself, and not the ultimate results of the process, will assume center stage, and that a focus on technological change will give way to a focus on achieving consensus.

Many of these same concerns will be at hand when negotiation is used in an *extra-statutory* sense, as it is now being used in EPA’s Project XL and Common Sense Initiative (CSI), to change regulatory policy. If the focus is industry-wide, as it is with CSI and often is perceived to be with Project XL, the resource demands will be large. Further, where there is no meaningful

incentive for industry negotiators to move away from the *status quo* -- that is, where there is no impending “default” standard or requirement that they perceive as onerous -- they likely will be interested only in those regulatory changes that save them money.

In the last analysis, it must be recognized that negotiation is a process that facilitates *market solutions* to questions regarding the appropriate ends or means of compliance. Thus, the relative bargaining power of the stakeholders largely determines the outcome, unless it is checked at the end of the process by a government agency with a strong sense of trusteeship for the environment. Agencies who see themselves as mediators of the negotiation, rather than as trustees, help to promote a market-like result through the operation of the consensus process. If a superior result is to be achieved, it likely will require the participation of agencies with both the means and the will to take a firm position in support of the environment and the development of new technologies.

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