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Stakeholder Involvement in the Design of U.S. Voluntary Environmental Programs: Does Sponsorship Matter?

JoAnn Carmin, Nicole Darnall, and Joao Mil-Homens

Voluntary environmental programs (VEPs) promise to provide firms and facilities additional flexibility in managing their environmental affairs while increasing internal efficiencies and improving their public image. Although stakeholder input is thought to improve program development, little is known about the extent that stakeholders are involved in the VEP design process. Based on a survey of 61 program managers, this research distinguishes between the intensity and diversity of stakeholder involvement and uses these two concepts to assess VEP development relative to government, industry, and third-party sponsorship. Even in the absence of a mandate, all three sponsors include a variety of stakeholders in program design. Although there is evidence that collaborative relationships are developing between sponsors and a range of stakeholder groups, variations in the intensity of involvement among sponsors suggest that some stakeholders may have disproportionate levels of influence in the design of VEPs.

Many policy experts are critical of the current state of environmental regulation, arguing that the traditional command-and-control approach affords little flexibility to firms complying with pollution regulations. As a result, firms often make costly capital investments that yield less efficient outcomes for environmental protection. In an effort to address criticisms and to reward good behavior, the U.S. Environmental Protection Agency (EPA) has broadened its regulatory approach to include voluntary environmental programs (VEPs) that encourage organizations to reduce their environmental impacts beyond compliance thresholds. Many industry associations and independent third parties have also sponsored VEPs for the same reasons. In fact, since the late 1980s, government, industry, and independent third parties have sponsored more than 150 VEPs.

The popularity and growth of VEPs have been accompanied by questions about their ability to promote sound environmental practices. One factor that has the potential to influence the environmental stringency of VEPs and enhance their

overall legitimacy is stakeholder involvement. Whereas many traditional government programs mandate participation, stakeholder involvement in the development and implementation of VEPs is left to the discretion of the sponsor. This distinction raises the questions of whether or not VEPs promote stakeholder involvement even though it is not required and, if so, whether involvement varies by sponsor. By exploring the diversity and intensity of stakeholder involvement in VEP design, this study begins to assess the process through which these programs are developed and the relationships that are present among different sponsors and stakeholder groups.

VEPs, Sponsorship, and Stakeholder Involvement

VEPs consist of agreements with firms or facilities that require them to improve their environmental performance. VEPs include programs, codes, agreements, and commitments that encourage organizations to voluntarily reduce their environmental impacts beyond the requirements established by the environmental regulatory system.

VEPs emerged in the late 1980s in response to criticisms about the overly prescriptive and often inefficient nature of the traditional command-and-control approach to environmental regulation (Davies, Mazurek, Darnall, & McCarthy, 1996). Even though widespread recognition of the problems with traditional regulation existed, it was impossible to achieve consensus on how to achieve reform, particularly in the face of prevailing beliefs that restructuring would spur political and social confrontation (Davies, T., Mazurek, J., Darnall, N., & McCarthy, K., 1996). VEPs emerged as an alternative means for improving environmental conditions outside the regulatory development process. Not only did these programs address a number of environmental concerns being raised by citizens and interest groups, but they also avoided the complex and costly conflicts that often are associated with regulatory reform ([Baggott, 1986](#); [Bowers & Mills, 1996](#)).

Republicans and Democrats alike have supported VEPs. During the first Bush administration, more than fifteen VEPs were developed. Largely an outgrowth of the Pollution Prevention Control Act (1990) and the Clean Air Act Amendments (1990), these early programs were designed to promote incentive-based environmental management. Responding to their increased popularity, and the low probability of increased environmental regulatory reform, the Clinton administration further expanded VEP development, endorsing over 30 programs. Since 1988, the federal government has administered more than 42 VEPs, attracting an estimated 13,000 participants (Mazurek, 2002). At the same time, industry groups and independent third-party organizations have created their own programs as well as supported government-sponsored VEPs as a means for encouraging and rewarding businesses that deliver environmental performance superior to the requirements set out under existing laws and regulations (Nash & Ehrenfeld, 1997; Davies et al., 1996).

VEP structure and design processes differ from traditional regulation. With respect to structure, traditional regulatory approaches require that firms operate within given pollution thresholds and implement specific pollution control technologies. In contrast, VEPs generally require participants to voluntarily establish and then meet self-determined environmental targets that exceed regulatory standards. With respect to design, traditional regulation requires that environmental standards be developed through open processes that encourage public input. However, in VEPs the decision about whether to include stakeholders in program design and implementation is left to the discretion of the sponsor. Because of this increased flexibility, some VEP sponsors may be more likely to involve a greater variety of stakeholder groups in program design and to encourage greater intensity of input from some groups over others.

Rationale for Stakeholder Involvement

Stakeholder involvement has become an integral part of many policymaking processes and can take a variety of forms, ranging from informing and consulting with the public to partnerships and citizen control (Arnstein, 1969). Of these numerous approaches, those that delegate authority are regarded as more authentic forms of citizen involvement because they empower civil society actors to influence public decision making (Arnstein, 1969; King, Feltey, & Susel, 1998). However, authenticity requires more than merely delegating authority. Although there are different views of the role and structure of participation in a democratic society, most scholars suggest that not only should opportunities be established for input, but commensurate levels of influence should be present among diverse groups of stakeholders. Accordingly, genuine forms of stakeholder involvement are rooted in processes accessible to a broad range of groups and dedicated to achieving outcomes that reflect the concerns of a wide variety of interests (Gray, 1989).

In the environmental arena, there has been a movement toward including diverse groups of stakeholders in all phases of decision making. Many environmental laws and regulations reflect this trend by requiring at least a basic level of public consultation, if not greater levels of delegation and influence (Beierle, 1999; Beierle & Cayford, 2002). Although the trend has been toward greater stakeholder inclusion, establishing the means for diverse groups and individuals to participate equally in the VEP design process poses numerous challenges. For example, involvement often prolongs the amount of time required to complete decision-making processes, particularly when divergent views produce controversies that take time to address or require that stakeholders acquire new knowledge (Susskind, 1994). An additional challenge is that stakeholder involvement can be costly. In particular, programs that encourage large numbers of people to become intensely involved in decision making also incur greater financial and personnel costs (Crosby, Kelly, & Schaefer, 1986; Beierle & Cayford, 2002).

Despite these challenges, involving stakeholders in decision making is a critical means for fostering the legitimacy of VEPs.¹ By including stakeholders in the design process, program managers are more likely to develop an initiative that better reflects the wants and needs of their diverse constituencies (Fiorino, 1990). Members of the public often have well-defined views about environmental risks and conditions. Learning about these views helps program managers understand and then take appropriate steps to address stakeholder concerns. This, in turn, can lead to greater trust in decision-making processes as well as in the outcomes that are achieved (Beierle & Koninsky, 2000; La Porte & Metlay, 1996; Slovic, 1993). In addition, stakeholders have a wide range of social and political values, leading them to see problems, issues, and solutions from a vantage point that government representatives and experts miss (Fiorino, 1990; Beierle, 1999; Isaacson, 1986). Incorporating these values into VEP design is likely to increase program legitimacy by ensuring that initiatives reflect societal expectations.

Sponsorship and Stakeholder Involvement in VEP Design

Most VEPs are sponsored by government, industry, or independent third-party organizations. Despite the lack of mandate and the additional costs that may be incurred, each type of sponsor has different reasons for VEP development as well as for promoting stakeholder involvement. If genuine approaches to stakeholder involvement in VEP design are being implemented, then sponsors will not only strive to include diverse groups of stakeholders but also will take steps to ensure that these groups have equal levels of influence. However, because a mandate is not present and sponsor motivations differ, it is likely that there will be differences in the diversity and intensity of stakeholder involvement in VEP design.

Government-Sponsored VEPs

In the United States, VEPs generally have been initiated and funded by government agencies such as the EPA and the Department of Energy (DOE). These programs include EPA's 33/50 Program, Energy Star, and Wa\$te Wi\$e, and DOE's Voluntary Reporting of Greenhouse Gases Program. Government-sponsored VEPs can offer participants numerous benefits, including regulatory relief, technical assistance, competitive advantages, and increased information through access-to-peer networks (Darnall, 2003). Government agencies may be motivated to develop VEPs, because these programs often have lower administration and enforcement costs than traditional regulation (Davies et al., 1996). Because there are fewer parties and formal steps involved, VEPs therefore may be more efficient at achieving improved environmental outcomes than the traditional regulatory process.

Stakeholder involvement in the design of government VEPs can enhance the legitimacy of these programs. In particular, because many government VEPs are

Table 1. Sponsor Motivations for VEP Development and Stakeholder Involvement

VEP sponsor	Motivations for VEP development	Motivations for stakeholder involvement
Government	<ul style="list-style-type: none"> • Reduce administration and enforcement costs • Create efficient alternative to traditional environmental policy 	<ul style="list-style-type: none"> • Avoid regulatory capture • Promote trust that agency is acting in the public good • Minimize conflict • Enhance program legitimacy and acceptability by industry and NGOs
Industry	<ul style="list-style-type: none"> • Address public concerns about environmental impacts • Increase flexibility in reaching environmental goals • Avoid, affect, or delay regulation • Promote consistency and industry-specific environmental solutions 	<ul style="list-style-type: none"> • Ensure NGO acceptance of VEP • Enhance program legitimacy with NGOs and government • Minimize future conflict with NGOs
Third-party	<ul style="list-style-type: none"> • Encourage proactive environmental behavior of industry participants • Provide nongovernmental, non-industry alternative 	<ul style="list-style-type: none"> • Ensure government and industry acceptance of VEP • Encourage industry participation in program

formed in negotiated partnerships with industry, the potential exists for industry capture of these programs (Ayres & Braithwaite, 1992), which may lead to the development of initiatives with lower environmental standards and fewer monitoring requirements. By enlisting the input of both industry representatives and nonindustry nongovernmental organizations (NGOs), it may be possible to develop a more credible program (Gunningham & Grabosky, 1998) and avoid agency favoritism of one group or position (Faure, 2001).

As summarized in Table 1, in addition to fostering trust among different stakeholder groups, high diversity of participation may promote confidence that the actions of agencies reflect public sentiments and values. Although government-sponsored VEPs may have a high diversity of involvement, these programs have been critiqued for their close relationships to industry and lack of inclusion of NGOs (Barber, 1998). In other instances, scholars have recognized that although some VEPs may be more inclusive than traditional regulation, they are less transparent in demonstrating how stakeholders affect program design (Mazurek, 2002).

Industry-Sponsored VEPs

In the late 1980s, industry associations began designing their own VEPs. For example, the Pulp and Paper Industry developed the Sustainable Forestry

Initiative and the American Chemistry Council initiated the Responsible Care® Program. These two industry VEPs focus on a single industrial sector, whereas others, such as the Business Charter for Sustainable Development, are cross-sector. The emergence of sector-specific industry VEPs was prompted by public concerns regarding the environmental performance of member firms and by appeals to promote consistent environmental management among association members ([Garcia-Johnson, 2000](#); [Hoffman, 1997](#)). Industry associations realized that VEPs could offer a means for participants to improve their environmental performance while providing them with flexibility in the way they reach their environmental goals ([Nash & Ehrenfeld, 1996](#)). Developing VEPs and being proactive about environmental behavior helps association members generate environmental solutions that are tailored to their specific industry practices ([Garcia-Johnson, 2000](#); [Nash & Ehrenfeld, 1996](#)). By demonstrating a commitment to environmental protection, VEPs may help to preempt more stringent regulation and enhance the public image of program participants ([Maxwell, Lyon, & Hackett, 2000](#); [Garcia-Johnson, 2000](#); [Nash & Ehrenfeld, 1997, 1996](#)). Although research has focused on sector-specific industry VEPs, they are likely to have the same motivations for initiative development as cross-sector programs.

Industry members have been enthusiastic about developing their own VEPs. However, NGOs and research scholars alike have suggested that these programs may lack appropriate implementation, monitoring, and reporting protocols and may lead to lower environmental standards ([King & Lenox, 2000](#); [Barber, 1998](#)). To address these concerns, industry sponsors may be particularly interested in including environmental groups and other NGOs in the VEP development process. These groups may either be general environmental advocacy organizations or those with expertise in specific types of environmental issues. For example, the design process for the Sustainable Forestry Initiative included NGOs with expertise in sustainable forestry, such as the Wildlife Federation, the American Bird Conservancy, the Wildlife Society, and the Wildlife Habitat Council. By including NGOs in VEP design, industry sponsors may reduce suspicion about the legitimacy of their program and minimize the prospect of adversarial reactions such as consumer boycotts or protests. Although government agencies have been supportive of industry-sponsored VEPs, industry may still seek government inclusion in program design as a means of demonstrating that it is a viable alternative to more stringent regulation.

Third-Party-Sponsored VEPs

Third-party-sponsored VEPs are developed by a wide range of nonindustry NGOs, including standard-setting bodies, advisory groups, and environmental advocacy organizations. Although there are fewer third-party VEPs than government and industry programs, some have had a significant impact on the business community. For example, ISO 14001 has been adopted by thousands of businesses

worldwide. This globally recognized VEP was developed by a nonprofit federation of standard-setting organizations and multiple external stakeholders. Similarly, nongovernmental advisory groups such as the Global Reporting Initiative and The Natural Step[®] also have international recognition. Other VEPs, such as the Paper Task Force and the Alliance for Environmental Innovation, were designed and implemented by environmental advocacy organizations. This latter type of VEP represents a significant departure from the litigious approaches that environmental NGOs often pursue when attempting to influence corporate environmental performance. All third-party-sponsored VEPs are designed to encourage proactive corporate behavior and to advance mutual goals.

In contrast to government and industry programs, third-party VEPs may have greater legitimacy with stakeholders because they are implemented and monitored by organizations that are unaffiliated either with the regulatory system or with program participants. However, many sponsors of third-party VEPs seek the involvement of industry and their representatives during program design to ensure that their initiatives are responsive to industry needs. In doing so, third-party sponsors help ensure that their VEP structure and standards will encourage industry participation. Perhaps not as important as industry involvement, third parties may also seek opportunities for government input in program design so that their initiatives are regarded as credible.

Research Methods

To assess the extent that different sponsors enlisted participation of external stakeholders during program design, an Internet survey of VEP managers was conducted. For the purposes of this study, a VEP was defined as any program, code, agreement, or commitment that encouraged business organizations to voluntarily reduce their environmental impacts beyond that required by the environmental regulatory system. The population of VEPs was limited to domestic and foreign programs that operate or operated in the United States through 2002. The population was further limited to regional or national programs and to programs that were designed to have firms or business organizations as their participants. Finally, VEPs included in this study had to emphasize pollution reductions. This last constraint eliminated programs emphasizing only habitat conservation or park preservation.

VEPs were identified by reviewing scholarly literature and government reports, and by searching the Internet using keywords. Over 200 programs were identified. After applying our VEP definition, a total of 105 programs were retained. VEP managers were contacted by e-mail and asked to complete an Internet-based survey that examined VEP design and administration characteristics, including the roles played by specific stakeholder groups throughout the stages of program development. Four e-mail follow-up messages were sent to nonrespondents at two-week intervals requesting their participation in the study.

A total of 61 (58%) program managers completed the survey. Appendix A contains a list of the VEPs included in this analysis.

For the purposes of this study, *sponsors* was defined as agents who financed, developed, and administered the VEP. Programs were assigned to one of three sponsorship categories: government, industry, or third-party. This assignment was determined by having two independent raters review each VEP homepage to identify the organization(s) that presently finance, develop, and administer the program. In the absence of such information, VEP contact designations and the server where the Web site was hosted were used to determine the organizations responsible for a program's development administration. In cases in which an organization was created with the purpose of developing and implementing a VEP, the original advocates were identified. If a VEP was discontinued or no longer had an active Web site, secondary reports were examined instead.

Stakeholders was broadly defined as representatives of different interest groups, including the VEP sponsor. *Diversity of involvement* was determined by counting the total number of different types of stakeholder groups that participated in the design of the VEP as indicated by the survey responses. One-way analysis of variance (ANOVA) was used to assess overall differences among stakeholder diversity of involvement and all three categories of VEP sponsorship. When significant overall differences were detected, Tukey's HSD was conducted to evaluate significant pairwise differences.

Intensity of involvement was defined as the degree that external stakeholders were involved in VEP design. Program managers ranked the intensity of involvement for each of the 10 groups of stakeholders on a five-point scale ranging from "None" to "Very High." For this portion of the analysis, stakeholder groups were aggregated into the following three categories: government (intergovernmental organizations and federal, state, and local agencies), industry (industry associations and for-profit firms), third-party (nonindustry NGOs). Each category was coded as the most intense level of involvement that was achieved. For example, envision a program that included multiple local, state, and federal government stakeholders. State and local government stakeholders had a "very low involvement" level, whereas federal government stakeholders had a "somewhat high" level of involvement. In Table 2, each of the different stakeholder groups are represented, whereas in Table 3 government would be identified as having a "somewhat high" level of involvement because at least one government stakeholder participated at this level and no others participated more intensely.

In evaluating intensity of involvement, *external stakeholders* was defined as representatives of interest groups, excluding those associated with the sponsor. Because being a VEP sponsor necessitates a high level of involvement in program design, sponsors were omitted from this part of the statistical analysis. The general category of "other" also was omitted to more effectively evaluate the relationships between government, industry, and nonindustry NGOs. Limiting the analysis in this way resulted in two categories of external stakeholders for each VEP.

Table 2. Diversity of Stakeholders Involvement in VEP Design

Stakeholder group involved	VEP sponsor*			Total n = 61
	<i>Government</i> n = 42	<i>Industry</i> n = 9	<i>Third-party</i> n = 10	
Government				
Intergovernmental	1 (2%)	0 (0%)	1 (10%)	2 (3%)
Federal	39 (93%)	5 (56%)	3 (30%)	47 (77%)
State	24 (57%)	4 (44%)	1 (10%)	29 (48%)
Local	23 (55%)	3 (33%)	0 (0%)	26 (43%)
Industry				
Industry association	38 (90%)	8 (89%)	5 (50%)	51 (84%)
Firm	27 (64%)	6 (67%)	5 (50%)	38 (62%)
Third-party				
Nonindustry NGO	31 (74%)	5 (56%)	9 (90%)	45 (74%)
Other				
Consulting firm	22 (52%)	3 (33%)	4 (40%)	29 (48%)
Individual	14 (33%)	4 (44%)	4 (40%)	22 (36%)
Others	1 (2%)	0 (0%)	0 (0%)	1 (2%)
Average number of participants	5.24	4.22	3.20	4.78

*Diversity of involvement differs among VEP sponsors at $p = 0.017$.

Each program therefore received two intensity scores, one for each of the two external stakeholder groups being studied. The Wilcoxon Paired Signed Rank Test was then used to assess differences in the intensity of involvement of external stakeholders for each VEP sponsor.

Findings

Of the 61 VEPs included in this analysis, 42 were sponsored by government, 9 by industry, and 10 by third-party organizations. Table 2 summarizes the different stakeholder groups involved in program design for each type of VEP sponsor and indicates that there were significant differences in the diversity of involvement for different sponsors ($p = 0.017$).² On average, government-sponsored VEPs had 5.2 different stakeholder groups involved during program design. Of these groups, federal government and industry associations had the highest frequency of involvement. Of all government VEPs, 93% included representatives from federal government during the design phase and 90% included industry associations. In contrast, about three-quarters (74%) of government VEPs included NGOs in program design.

Relative to the other sponsorship regimes, industry-sponsored programs had moderate diversity of involvement in VEP design. On average, 4.2 different stakeholder groups were represented in the design of industry VEPs, with industry

Table 3. Intensity of External Stakeholder Involvement in VEP Design

Involvement level	Government-sponsored VEPs (n = 42)		Industry-sponsored VEPs (n = 9)		Third-party-sponsored VEPs (n = 10)	
	Industry	NGO	Government	NGO	Government	Industry
None	1 (2%)	11 (26%)	4 (44%)	4 (44%)	7 (70%)	2 (20%)
Very low	8 (19%)	8 (19%)	1 (11%)	1 (11%)	0 (0%)	1 (10%)
Somewhat low	5 (11%)	4 (9%)	1 (11%)	2 (22%)	2 (20%)	1 (10%)
Somewhat high	7 (17%)	10 (24%)	2 (22%)	1 (11%)	0 (0%)	2 (20%)
Very high	21 (50%)	9 (21%)	1 (11%)	1 (11%)	1 (10%)	4 (40%)
p-value	$p = 0.0004$		$p = 0.7057$		$p = 0.0329$	

associations having greater involvement than government agencies and nonindustry NGOs. Of industry-sponsored VEPs, 89% included industry associations in program design, whereas only about half of the industry programs (56%) included either federal government or NGOs.

Finally, third-party-sponsored VEPs had an average of 3.2 different stakeholder groups involved in program design. The primary participants in third-party VEPs were nonindustry NGOs. Almost all third-party VEPs (90%) included NGOs, whereas only half included industry associations and firms. Less than one-third of these VEPs (30%) included the federal government in VEP design, fewer (10%) included state government, and none included local government.

Table 3 summarizes intensity of external stakeholder involvement in VEP design for different program sponsors. The results show that industry groups had the highest intensity of involvement in government VEPs. Approximately two-thirds of government-sponsored programs (67%) reported either high or very high levels of industry involvement, whereas less than half (45%) reported the same degree of intensity of involvement by NGOs. Of the 42 government VEPs responding to the survey, only one indicated that there was no involvement by industry associations or by nonindustry NGOs. The results of Wilcoxon Paired Signed Rank Test show that there were statistically significant differences ($p = 0.0004$) between the intensity of industry versus NGO involvement in designing government VEPs. These findings suggest that, in general, industry has the highest intensity of involvement in government-sponsored programs.

Similarities were present in the distributions associated with government and NGO involvement in industry-sponsored VEPs. This pattern was confirmed by the Wilcoxon test that showed no significant differences in the intensity of involvement of external stakeholder groups. Finally, 60% of third-party programs reported either high or very high intensity of involvement by industry, whereas only 10% reported the same degree of involvement by government. Almost three-quarters (70%) of third-party VEPs reported no involvement by government agencies of any kind. The results of the Wilcoxon test showed that the intensity of

industry involvement in third-party-sponsored programs was significantly different from government involvement ($p = 0.0329$). These findings suggest that third-party sponsors and industry may be interested in working collaboratively on VEP design.

Discussion and Conclusions

This study examined how diversity and intensity of stakeholder involvement in VEP design differs depending on the program sponsor. As summarized in Table 4, the findings demonstrate that variations in diversity and intensity of involvement were present for each of the three sponsorship categories. Government VEPs had the greatest diversity of stakeholder involvement. By including a broad group of stakeholders, these programs may avoid the appearance of agency favoritism for one interest group or position. However, because industry was the most intensely involved stakeholder, the evidence suggests that NGOs may not have equal influence in the design process of government VEPs.

Relative to government-sponsored programs, industry-sponsored VEPs had a moderate diversity of stakeholders involved in program design. Since NGOs frequently are skeptical of industry VEPs (Barber, 1998), it might be expected that industry sponsors would promote NGO involvement during VEP design and that NGOs would avail themselves of these opportunities. However, NGO representation and intensity of involvement was not significantly different from that of government. Industry has a history of interacting with government, but working collaboratively with NGOs is an emerging alternative to relations that often have been characterized by conflict (Rondinelli & London, 2003). The patterns present in diversity of involvement provide preliminary evidence that, in general, industry sponsors may be more interested in working with their constituents than with external stakeholders. Nonetheless, the intensity findings suggest that industry sponsors are establishing equal levels of interaction and developing collaborative relationships with both government and NGOs.

Relative to government and industry VEPs, third-party initiatives had the lowest diversity of stakeholder involvement. This may reflect the fact that many third-party initiatives tend to be global in scope and therefore may be more likely

Table 4. Summary of Results

Sponsor	Patterns of stakeholder involvement in VEP design
Government	<ul style="list-style-type: none"> • Highest diversity of stakeholder involvement • Industry most intensely involved external stakeholder
Industry	<ul style="list-style-type: none"> • Moderate diversity of stakeholder involvement • No difference between government and NGO intensity of involvement
Third-party	<ul style="list-style-type: none"> • Lowest diversity of stakeholder involvement • Industry most intensely involved external stakeholder

to interact with international bodies rather than national governments or specific business organizations. Consequently, the range of stakeholders with interests in third-party-sponsored programs often may be limited to intergovernmental associations and international industry associations and NGOs. Industry was the most intensely involved stakeholder in third-party VEP design. Similar to patterns previously discussed, this too may reflect efforts by both industry and third parties to engage in collaborative interactions.

The development of third-party-sponsored VEPs and the presence of NGO involvement in government and industry program designs suggest that a transformation may be taking place in the role that nonindustry, nongovernmental actors play in environmental protection. As independent and unaffiliated entities, NGOs often strive to represent and promote the realization of societal goals and interests (Cohen & Arato, 1992). Many environmental NGOs have a history of being suspicious of industry and concerned about government's ability or willingness to design regulations that achieve serious environmental improvements. These groups often exert influence by commenting on proposed regulations, taking legal action, or engaging in more confrontational tactics such as protests. However, some NGOs, such as standard-setting bodies and advisory groups, are establishing their own VEPs, and others are negotiating with industry associations and government to influence the programs that they design. These patterns may be suggestive of a movement from traditionally adversarial relationships to more collaborative relations between NGOs and government and the regulated community.

The variations present in diversity of stakeholder involvement indicate that sponsorship does matter. Government, industry, and third-party sponsors respectively interact with decreasing numbers of stakeholder groups. It is important to acknowledge, however, that even though the levels of diversity varied, all of the sponsors created some opportunities for stakeholders to become involved in the design of their programs. Rather than being limited to instances in which government agencies respond to mandates, these patterns suggest that stakeholder involvement is becoming an institutionalized aspect of environmental program design, regardless of sponsor or regulatory requirement.

At the same time, it appears that the transition from traditional regulation to voluntary approaches may be characterized by unequal degrees of influence. Industry is the ultimate participant in all of these programs. Accordingly, the findings related to intensity suggest high levels of industry involvement in government and third-party VEPs. Although intensity of industry involvement was not assessed in industry-sponsored VEPs, the data regarding diversity of involvement indicates that firms and industry associations were active in designing these initiatives as well. Although the data suggest that collaboration may be developing across sectors, they also indicate that industry is actively taking steps to protect its interests.

Opening the decision-making process to diverse stakeholder groups is a necessary but insufficient condition for ensuring genuine forms of input (e.g.,

Arnstein, 1969; Gray, 1989; King, Feltey, & Susel, 1998). In other words, diversity of input must be augmented with equal intensities of involvement. By examining diversity, this study revealed that a wide array of stakeholder groups become involved in VEP design. However, programs were more limited in the intensity of stakeholder involvement. Diversity of stakeholder involvement may therefore be little more than a symbolic gesture that is used to demonstrate inclusion, whereas intensity of involvement may be more indicative of the provision of genuine opportunities to influence program design. Accordingly, the higher intensity of industry involvement in government and third-party programs may give industry groups a disproportionate degree of influence, providing opportunities for industry capture of these VEPs.

This study examined differences in patterns of stakeholder involvement among sponsors of voluntary initiatives. However, it did not examine variations in the types of participatory processes used by different sponsors. For example, stakeholder involvement techniques such as public meetings are quite different from advisory committees and may lead to different outcomes. Future research should examine the relationship between stakeholder diversity and intensity relative to the participatory forums being used to influence VEP design. Moreover, future studies should also compare stakeholder diversity and intensity in VEPs with stakeholder involvement in traditional regulatory settings. Other research should explore the relationship between VEP sponsorship, stakeholder involvement, and the environmental stringency of these initiatives. Stakeholder involvement is no doubt important, but the merits of including external parties in VEP design will ultimately depend on whether increased involvement leads to more stringent requirements for environmental performance and monitoring.

This research contributes to policy theory and scholarship along three important dimensions. First, most research on participation focuses on the different types of stakeholder groups that become involved in public decision making. Although stakeholder diversity is important, this research introduces and empirically investigates the distinction between diversity and intensity of involvement. The findings suggest that evaluating both types of stakeholder involvement may provide a more complete understanding of the extent to which external parties are involved in collaborative decision making.

Second, this study enhances our understanding of innovation in environmental policy reform. Since the 1980s, there has been tremendous growth in the development and implementation of VEPs in the United States, as well as around the world (Mazurek, 2002; Dowd & Boyd, 1998). At the same time, it is becoming increasingly common for firms to require that their suppliers participate in VEPs as a condition of business (Nash, 2002; Darnall, Gallagher, & Andrews, 2001). As VEPs become more popular, it is essential to learn about how they are designed and to carefully examine their credibility (Harrison, 2002; Furger, 2001). This study takes an important first step in addressing the legitimacy and credibility of these programs by empirically evaluating stakeholder involvement in the VEP design process.

Finally, voluntary approaches are being adopted across numerous policy arenas. In addition to environmental protection, voluntary programs are being implemented to improve occupational health and safety, emergency planning, and medical reviews. It is therefore important for policy scholars to understand the way that these programs are designed and the role that stakeholders play in shaping their characteristics. The results of this study suggest that when left to their discretion, VEP sponsors promote stakeholder involvement even though it is not required. This finding is a cause for optimism about the process through which VEPs are developed. There also is cause for concern, however, because some sponsors are involving particular stakeholder groups more intensively than others. Time will tell if these differences affect whether VEPs achieve their environmental goals and whether parties with limited influence in the design process view these programs as credible.

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Appendix A: Programs Included in Analysis

33/50	Design for the Environment
Alliance for Environmental Innovation	Adhesives & Foam Furniture & Sleep Products
Audubon Cooperative Sanctuary Program	Design for the Environment Automotive Refinishing Partnership
Building America	Design for the Environment Flexography Partnership
Caux Round Table Principles for Business	Design for the Environment Garment and Textile Care Program
Certified Environmental Drycleaner	Design for the Environment Gravure Partnership
Chemical Strategies Partnership	Design for the Environment Industrial and Institutional Laundry Partnership
Climate Challenge	Design for the Environment Integrated EMS
Coalbed Methane Outreach Program	Design for the Environment Lithographic Printing Partnership
Coalition for Environmentally Responsible Economies	
Coatings Care	
Commuter Choice Leadership Initiative	
Consumer Labeling Initiative	

Design for the Environment Screen Printing Partnership	National Environmental Performance Track
Encouraging Environmental Excellence (E3)	National Waste Minimization Partnership Program
Energy Star	Natural Gas STAR Program
Environmental Leadership Program (Pilot)	Natural Step, The Paper Task Force
Environmentally Preferable Purchasing and Production	Pesticide Environmental Stewardship Program
Environmental Technology Verification Program	Project XL
Farm*A*Syst/Home*A*Syst	Recycled Paper Coalition
Global e-Sustainability Initiative	Responsible Care
Global Reporting Initiative	Ruminant Livestock Efficiency Program
Great Lakes Automotive Pollution Prevention Project	SF6 Emission Reduction Partnership for the Magnesium Industry
Great Printers Project	SF6 Emissions Reduction Partnership for Electric Power Systems
Green Power Market Development Group	StarTrack
Hospitals for a Healthy Environment	Sustainable Forestry Initiative
International Hotels Environment Initiative	UNEP Advertising and Communication Forum on Sustainability
ISO 14001 Environmental Management System Standard	UNEP Financial Institutions Initiative
Landfill Methane Outreach Program	US Automotive Pollution Prevention Project
Mercury Challenge Program (Partners for Change)	Voluntary Reporting of Greenhouse Gases Program, DOE
Merit Partnership for Pollution Prevention	WasteWise
Metal Finishing Strategic Goals Program	Water Alliances for Voluntary Efficiency (WAVE)
Mobile Air Conditioning Climate Protection Partnership	

Notes

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1. *Legitimacy* is defined as “the perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (Suchman, 1995, p. 574).

2. The results of Tukey's HSD suggest that differences between government and third-party VEPs are the primary factors driving statistical significance in the ANOVA test.

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