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Greenwash or Green Gain? Predicting the Success and Evaluating the Effectiveness of Environmental Voluntary Agreements¹

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I. Introduction

The long-recognized downsides of command and control regulation have, for over a decade, spawned a wistful veneration of voluntary agreements as an environmental policy tool among politicians and pundits alike.⁴ Wouldn't it be nice if governments and industries could

1. The authors would like to express their gratitude to Dr. Shmuel Brenner, Tel-Aviv University for his helpful guidance and remarks; to all the participating plants in the research; to the Air Quality Division and Air Pollution Coordinators; to the Israeli Ministry of the Environment and to the interviewees from Europe for their remarkable cooperation which made the research possible; to Arie Naiger, Legal Advisor, Israeli Industry Association; to Barry Elman, U.S. EPA, for his helpful comments; to David Lehrer, Director, and to Sara Lewis, Research Assistant, Arava Institute for Environmental Studies; to Professor Marcia Gelpe, Head of the Environmental Law Center, Netanya Academic College; to Professor Baruch Mevorach, Tel-Aviv University; to Dr. Mickey Haran, Director General, to Dr. Ruth Rotenberg, Legal Advisor, to Shuli Nezer, Head of Air Quality Department; to Izhak Ben-David, Deputy Director Enforcement; to Dr. Moti Sela, Head of Industry & Business Licensing Division; to Valery Brachia, Deputy Director Environmental Planning; to Zohar Shkalim, Enforcement Coordination Division; to Smadar Segev, Assistant Deputy Director Enforcement; to Rachel Adam, Deputy Legal Advisor; to Yaron Harmon, Head of Economics Division, Israeli Ministry of the Environment; to Doron Lahav, Deputy Director, Ashdod Municipalities Association for the Environment; to Irit Sapir; to Dalia Beeri and to Idit Reiter; to the Jerusalem Institute for Israeli Studies; to the Chief Scientist for the Israeli Ministry of the Environment and to the Simulation Lab, Tel-Aviv University for funding the research. This paper is largely based upon a Ph.D dissertation at Tel-Aviv University.

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4. See Seema Arora & Timothy Cason, *A Voluntary Approach to Environmental Regulation: The 33/50 Program*, 116 RESOURCES 6, 6-10 (1994) [hereinafter Arora & Cason, *A Voluntary Approach to Environmental Regulation*]. Environmental regulation

engage in an earnest conversation with the common objective of crafting the most cost-effective, verifiable, convenient, and foolproof strategy to reach the desired level of pollution? Even for those who harbor no illusions about the contradictory nature of the conflicting parties' interests and motives in environmental disputes, the natural evolution of public policy for environmental protection appears to support consensual alternatives to the conventional "sticks" that have long dominated most nations' regulatory strategy. After reaching certain levels of environmental protection through prescriptive rules and aggressive enforcement actions, why shouldn't governments try working together with industry? Voluntary agreements hold out the hope of pushing industries towards a higher level of environmental performance.

For some, it is simply pragmatism that leads to an embracing of voluntary regulatory programs. The standards and ambient expectations that inhabit a jurisdiction's statutes, rules, and regulations (or the hearts of quixotic government officials) matter less than the actual pollution

regarding industrial activities was significantly improved during the previous three decades. Significant success in reducing environmental degradation is attributed to the command and control system especially in air and water quality. See Cary Coglianese & Jennifer Nash, *Environmental Management Systems and the New Policy Agenda*, in *REGULATING FROM THE INSIDE—CAN ENVIRONMENTAL MANAGEMENT SYSTEMS ACHIEVE POLICY GOALS?* (Cary Coglianese & Jennifer Nash eds., 2001). However, by the late 1970s, the command and control system was faced by significant criticism. It was accused of being inflexible, excessively costly and too complicated. See NEIL GUNNINGHAM ET AL. *SMART REGULATION 6* (Oxford University Press 1998). The command and control system "may have reached the point of diminishing returns." See Richard Florida & Derek Davison, *Why Do Firms Adopt Advanced Environmental Practices (And Do They Make a Difference)?* in *REGULATING FROM THE INSIDE—CAN ENVIRONMENTAL MANAGEMENT SYSTEMS ACHIEVE POLICY GOALS?* 82 (Cary Coglianese & Jennifer Nash eds., 2001). See also Giulio Volpi & Stephan Singer, *EU-Level Agreements: A Successful Tool? Lessons from the Agreement with the Automotive Industry*, in *VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE* 145 (Patrick ten Brink ed., 2002). The command and control system is also accused of doing "nothing to encourage performance beyond the legal minimums" and for failing "to regulate a whole host of substances and activities with potential for detrimental effects of the environment." See Jerry Speir, *EMSs and Tiered Regulation: Getting the Deal Right*, in *REGULATING FROM THE INSIDE—AN ENVIRONMENTAL MANAGEMENT SYSTEMS ACHIEVE POLICY GOALS?*, 198 (Cary Coglianese & Jennifer Nash eds., 2001). For extensive criticism of the command and control approach, see Robert Anthony Reiley, *The New Paradigm: ISO 14000 and Its Place in Regulatory Reform*, 22 *J. CORP. L.* 535, 561 (1997); Michael Ray Harris, *Promoting Corporate Self-Compliance: An Examination of the Debate Over Legal Protection for Environmental Audits*, 23 *ECOLOGY L.Q.* 633 (1996); Edward D. McCutcheon, *Think Globally, Act Locally: Promoting Effective National Environmental Regulatory Infrastructures in Developing Nations*, 31 *CORNELL INT'L L. J.* 395, 441 (1998); Clifford Rechtschaffen, *Deterrence vs. Cooperation and the Evolving Theory of Environmental Enforcement*, 71 *CAL. L. REV.* 1181, 1196-1244 (1998); Paulette L. Stenzel, *Can the ISO 14000 Series Environmental Management Standards Provide a Viable Alternative to Government Regulation?*, 37 *AM. BUS. L. J.* 237, 278 (2000).

reductions achieved. The experiences of many countries suggest that improvements in emissions are effectively reached through negotiation.⁵

Alternatively, when political support for confronting an environmental issue is insufficient for passage of conventional command and control regimes, voluntary agreements offer a possible way out of paralyzing deadlock. For example, the sheer vastness of the controls required for addressing greenhouse gases (GHG) have raised the specter of voluntary initiatives as a new *modus operendi* for American regulation.⁶

The traditional inflexibility posed by prescriptive regulatory frameworks is to some extent an expression of public values, reflecting an historic preference for environmental performance over economic efficiency. While this is ethically acceptable, the actual results can be troublesome. For example, command and control programs have been

5. See Panagiotis Karamanos, *Corporate, Government and Nonprofit Sector Incentives for Participation of Development of Voluntary Environmental Agreements* 5 (2000), <http://www.law.duke.edu/news/papers/PKwebpaper.pdf> [hereinafter Karamanos, *Corporate, Government, and Nonprofit Sector Incentives*]. Literature presents a plethora of efficient voluntary agreements. For instance, in Italy, acute air pollution levels triggered a voluntary agreement concerning the quality of gasoline, regarding benzene and lead compounds. This agreement is considered extremely successful, especially since it “anticipated deadlines foreseen by both national and European regulations.” Further, the results of the program “have been estimated as the best environmental performance on a European level.” See Giorgio Vicini & Jane Wallace-Jones, *The Agreement on the Quality of Gasoline in Italy*, in *NEGOTIATING ENVIRONMENTAL AGREEMENT IN EUROPE—CRITICAL FACTORS FOR SUCCESS* 151 (Marc De Clercq ed., 2002). Japanese voluntary agreements are considered to have direct effects on emission reductions. Moreover, “where voluntary agreements set emission standards below national standard levels, facilities, on average comply with the stricter voluntary standard.” See Eric W. Welch & Akira Hibiki, *An Institutional Framework for Analysis of Voluntary Policy: The Case of Voluntary Environmental Agreements in Kita Kyushu, Japan*, 46 *J. ENVTL. PLAN. & MGMT.* 523, 538 (2003). Both the Belgian Agreement upon the Collection and Recycling of Batteries and the Dutch agreement concerning the reduction of sulphur dioxide and nitrogen oxide emissions by the power generation industry are two more examples of successful voluntary agreements that have achieved ambitious environmental standards. See Marc De Clercq & Bart Aemeels, *The Belgian Agreement upon the Collection and Recycling of Batteries*, in *NEGOTIATING ENVIRONMENTAL AGREEMENTS IN EUROPE—CRITICAL FACTORS FOR SUCCESS*, 113, 118 (Marc De Clercq ed., 2002). See also Ellis Immerzeel, *Covenant Regulating the Reduction of Sulphur Dioxide and Nitrogen Oxide Emissions by the Power Generation Industry*, in *NEGOTIATING ENVIRONMENTAL AGREEMENTS IN EUROPE—CRITICAL FACTORS FOR SUCCESS*, 276 (Marc De Clercq ed., 2002).

6. For example, the CFC industry could negotiate voluntary phase-out compliance declarations of intention. Such statements, if released publicly, would enhance corporate “green” images, increase the likelihood of industry compliance, and encourage the leveling of the competitive playing field. However, the reliance on international environmental covenants could generate concern, particularly in the U.S., about the lack of legal accountability on the part of both governments and “regulated” industry. See Barbara A. Boczar, *Avenues For Direct Participation Of Transnational Corporations In International Environmental Negotiations*, 3 *N.Y.U. ENVTL. L.J.* 1 (1994).

shown to push industries into a narrow compliance mode where, in order to meet specific limits on emissions, the results are nothing more than a transference of residuals and discharges from one environmental medium to another.⁷

In short, advocates of voluntary agreements offer a host of benefits conferred by voluntary environmental initiatives. These include: reduced conflict between government and the regulated community, increased compliance by potential polluters, and substantively improved policies based on better and more complete information.⁸ Environmental agreements, it is argued, offer unique benefits that cannot be achieved through other policies. For example, consensual accords can transform corporate culture from one that resists environmental interventions to one that seeks innovation and increasingly environmentally friendly performance.⁹

This buoyant vision of voluntary regulatory alternatives is assailed by many experts as wishful thinking.¹⁰ Harvard Professor Cary Coglianese argues that voluntary agreements may actually lead to “inferior policy results” for a variety of reasons, including absence of candor in the dialogue preceding agreement or a limited range of issues that the sides actually embrace.¹¹ Anyone who follows the drafting of international law is acutely aware of the tendency of negotiations that seek consensus about environmental norms to ultimately produce

7. See Hilary Sigman, *Cross-media Pollution: Responses to Restrictions on Chlorinated Solvent Releases*, 72 LAND ECON. 298-312 (1996).

8. See Karamanos, *Corporate, Government, and Nonprofit Sector Incentives*, *supra* note 5, at 5; Patrick ten Brink, VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE USE 32 (Patrick ten Brink ed., 2002); Interview with Cees Hoppener, Industry Division, Directorate General for Environmental Protection, Ministry of Housing, Spatial Planning and the Environment, in The Hague, Neth. (Sept. 13, 2002).

9. Richard Stewart, *A New Generation of Environmental Regulation?* 29 CAP. U.L. REV. 21, 60 (2001). See Karamanos, *Corporate, Government, and Nonprofit Sector Incentives*, *supra* note 5, at 5; *Communication from the Commission to the Council and the European Parliament on Environmental Agreements*, at 7, COM (1996) 561 final (Nov. 27, 1996) [hereinafter *Communication on Environmental Agreements*]; Interview with Frank Van Der Lans, Senior Permit Writer and A. De Buck, Coordinator target group industry, DCMR, in Schiedam, Neth. (Sept. 13, 2002).

10. See Bruce Paton, *Voluntary Environmental Initiatives and Sustainable Industry*, in VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE USES 46-48 (Patrick ten Brink ed., 2002).

11. See Cary Coglianese, *Is Consensus an Appropriate Basis for Regulatory Policy?* in ENVIRONMENTAL CONTRACTS—COMPARATIVE APPROACHES TO REGULATORY INNOVATION IN THE UNITED STATES AND EUROPE 93, 95-97 (Eric W. Orts & Kurt Deketelaere eds., 2001). See also Greet Van Calster & Kurt Deketelaere, *The Use of Voluntary Agreements in the European Community's Environmental Policy*, in ENVIRONMENTAL CONTRACTS—COMPARATIVE APPROACHES TO REGULATORY INNOVATION IN THE UNITED STATES AND EUROPE 199, 237 (Eric W. Orts & Kurt Deketelaere eds., 2001).

watered down products, dominated by the tyranny of least common denominators.¹² Voluntary agreements ostensibly import this frustrating process and its dubious outcomes into the domestic sphere. National sovereignty and the associated oversight and enforcement it fields offer a superior and well-trod route to ecological progress. Why posture and negotiate when you have the power to proscribe? Environmental advocates often look cynically upon voluntary agreements, categorizing them as “greenwash”—merely cosmetic attempts by industry to appear environmentally conscientious—when industry is in fact resistant to meeting its responsibilities.

Human nature and everyday common sense can be invoked by both sides in this now somewhat hackneyed debate. Conflicts from time immemorial between parents and adolescents over completion of chores or the relative condition of a bedroom confirm that people tend to bristle when told to clean up without being consulted to help characterize the task at hand. Negotiated agreements (and allowances) presumably produce a happier and more harmonious familial dynamic with more likely long-term compliance. At the same time, many parents will argue that the most effective way to achieve results in this domestic combat zone is to invoke sanctions and withhold privileges.

Ultimately, the resolution of this debate and the defining of an optimal role for voluntary agreements within a national environmental legal framework needs to be based on empirical experience as much as ideological inclination. Indeed, in the many articles dedicated to the topic, numerous commentators call for a higher volume of better empirical studies about the issue. As Bruce Paton concludes in his review of the subject, “[s]cholars and practitioners must devote considerably more attention to understanding why particular initiatives are effective or ineffective in achieving their environmental objectives.”¹³ Unlike economic trading programs, which are site-specific in nature and still relatively few in number, there are a vast number of environmental agreements that were signed long ago throughout the world—especially in Europe—that can offer real-world findings.

Analyses of the results of such voluntary initiatives are often impressionistic and less than comprehensive, but they do tend to be encouraging.¹⁴ Industries and politicians certainly like them. But do

12. See Talitman Dorit, Alon Tal & Shmuel Brenner, *The Devil is in the Details: Increasing International Law's Influence on Domestic Environmental Performance—the Case of Israel and the Mediterranean Sea*, 11 N.Y.U. ENVTL. L. J. 414 (2003).

13. Paton, *supra* note 10, at 48.

14. See Seema Arora & Timothy Cason, *Why Do Firms Volunteer to Exceed Environmental Regulations? Understanding Participation in EPA's 33/50 Program*, 72 LAND ECON. 413 (1996) [hereinafter Arora & Cason, *Why Do Firms Volunteer to Exceed*

they work? Few studies have cross-referenced corporate perception of agreements and assessments regarding the effect of participation in voluntary programs in light of actual firm compliance and performance data. Before reaching conclusions about an appropriate role for environmental agreements in future public policy, it is appropriate to consider a thorough empirical evaluation of voluntary programs.

This article provides a detailed review of one nation's experience with voluntary environmental agreements and considers how the results should inform the policy and legal debate surrounding environmental contracts as a regulatory alternative. It begins with a brief survey of the American experience in forging environmental agreements as a regulatory alternative for environmental protection. These programs help to illuminate the different contexts in which contracts are drafted and how these circumstances can influence the substantive contents and subsequent implementation of respective agreements. A discussion of different approaches and indicators that might be applied to assess the successes of environmental agreements follows. Due to the large variety of voluntary agreements, a dichotomous categorization of environmental voluntary agreements is first introduced. A distinction is made between strong and weak environmental enforcement agencies, incorporating the broader functions that voluntary agreements can ultimately serve in contrasting contexts. This contrast is further developed in the following

Environmental Regulations]; Madhu Khanna & Lisa A. Damon, *EPA's Voluntary 33/50 Program: Impact on Toxic Release and Economic Performance of Firms*, 37 J. ENVTL. ECON. & MGMT. 1 (1999); Michael Fautre, *Environmental Contracts: A Flemish Law and Economics Perspective*, in ENVIRONMENTAL CONTRACTS—COMPARATIVE APPROACHES TO REGULATORY INNOVATION IN THE UNITED STATES AND EUROPE 167 (Eric W. Orts & Kurt Deketelaere eds., 2001); Patricia Bailey, *The Creation and Enforcement of Environmental Agreements*, 8 EUR. ENVTL. L. REV. 170 (1999); CAMEROON MAY, THE ROLE AND EFFECT OF ENVIRONMENTAL AGREEMENTS IN ENVIRONMENTAL POLICIES (1998); Hans H.B. Vedder, *Competition Law and the Use of Environmental Agreements, The Experience in Europe, An Example for the United States?*, in ENVIRONMENTAL CONTRACTS—COMPARATIVE APPROACHES TO REGULATORY INNOVATION IN THE UNITED STATES AND EUROPE 247, (Eric W. Orts & Kurt Deketelaere eds., 2001); Organization for Economic Co-Operation and Development, *Voluntary Approaches for Environmental Policy—Environmental Effectiveness, Economic Efficiency and Usage in Policy Mixes* (2003)[hereinafter OECD], available at <http://www.corporate-accountability.org/docs/oced-2003-envrionmental.pdf>; EUROPEAN ENVIRONMENT AGENCY, ENVIRONMENTAL AGREEMENTS ENVIRONMENTAL EFFECTIVENESS - CASE STUDIES, ENVIRONMENTAL ISSUES SERIES No. 3(2) (1997), available at <http://reports.eea.eu.int/92-9167-052-9-Vol2/en/volii.pdf> [hereinafter European Environment Agency 2]; Rie Tsutsumi, *Successful Application of Environmental Agreements in Local Communities*, in VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE USE, 107 (Patrick ten Brink ed., 2002); *Negotiating Environmental Agreements in Europe—Critical Factors for Success*, in NEGOTIATING ENVIRONMENTAL AGREEMENT IN EUROPE—CRITICAL FACTORS FOR SUCCESS (Marc De Clercq ed., 2002); Welch & Hibiki, *supra* note 5; VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE, AND FUTURE USE 103 (Patrick ten Brink ed., 2002).

section, which presents evaluation criteria and predictors to voluntary agreements. The review draws heavily on the European experience and the existing literature that is emerging there in program evaluation of environmental contracts and agreements. In addition, different effectiveness predictors for each category of voluntary agreements are proposed as a basis for helping decision makers assess the likely future efficacy of new environmental agreements.

Subsequent sections provide a detailed empirical survey which considers the Israeli government's ambitious agreement with the Israeli Manufacturing Association to control air pollution emissions from stationary sources. After five years of implementation, the actual influence of the agreement on emissions, general environmental investment, corporate culture, and related factors, were measured through direct interviews and site visits. The interviews and visits were then verified through follow-up reviews of individual facilities in conjunction with the regional offices of the Ministry of the Environment. The empirical results provide an ideal case for testing the theory presented in earlier chapters. After presenting the background to the Israeli covenant, an assessment of the agreement's potential using "*ex ante* predictors" is performed. An *ex-post*, retrospective evaluation is then used to test the veracity of the projections.

The conclusions are considerably less optimistic about the effectiveness of voluntary agreements as a replacement for command and control programs than other options. Empirical findings and perceptions of practitioners suggest that environmental agreements that are reached against a backdrop of regulatory weakness and an absence of political support for environmental controls may fall short of declared objectives. Voluntary programs may serve to empower an environmental agency as it builds its internal regulatory infrastructure or capabilities in areas such as information about plant characteristics, personnel expertise, and data collection from monitoring. Yet, there is irrefutable evidence suggesting that voluntary programs may produce less actual reductions of emissions and improvement in general environmental practices, and less awareness than a command and control alternative. The results offer important insights to U.S. decision-makers and the environmental community as they consider the expansion of voluntary agreements as a replacement for command and control regulation in future environmental protection efforts. In an era where political support for aggressive environmental enforcement is waning along with a reluctance to set compulsory standards in areas such as greenhouse gas reduction, a sober and sophisticated understanding of any potential gains, or limitations, of voluntary agreements is critical.

II. The American Experience

The idea of an environmental policy that reaches out to industry in a consensual context in lieu of the default command and control regulatory “hammer” has held appeal to both Democratic and Republican administrations in the U.S. over the past twenty years. New York University environmental law scholar Richard Stewart points out that the American experience is in fact quite different than the parallel generation of European covenants (as well as the Israeli program evaluated towards the end of this article). The Europeans have embraced agreements that can be characterized as “macro-contracts,”¹⁵ which adopt an industry-wide, *en rem* approach. Accordingly, the American environmental voluntary agreement programs that have emerged, have largely been based on a plant-specific “microcontract” strategy. These initiatives attempt to tailor the stipulated environmental requirements to the specific circumstances and interests of the regulated firm with a commitment to maximizing flexibility.¹⁶

The U.S. Environmental Protection Agency’s (EPA) initial “foray” into voluntary programs, which is typically cited as the “33/50” program, was launched in 1991.¹⁷ Under the 33/50 initiative, a minimum of 8,100 corporations, then considered to be the nation’s top emitters under the Toxic Release Inventories, were asked by Administrator William Reilly

15. Stewart, *supra* note 9, at 60.

16. Some commentators classify negotiated regulatory agreements (or the so-called “reg-negs”) that have emerged during the past decade as the closest American equivalent to the European environmental “macro-contracts” in the U.S. This sustained attempt to derive federal and state rules and secondary legislation through a formal structured negotiation process between the regulated community and the government legislator shares many of the motives that characterize environmental agreements. The notion is that an industrial sector will be more inclined to apply environmental standards that it has helped to formulate. Or, as framed in more theoretical terms, the process is based on “the rationality of consensus-based on Coasian bargaining principles.” Yet, this approach is *tactical* and process-based, leading to a standard regulatory product. *Id.* at 61.

17. Many present EPA initiatives involving voluntary industrial activities have analogs that predate the 33/50 program. For instance, the offset and netting provisions for air emissions (Standards of Performance for New Statutory Sources, 40 C.F.R. § 60.14 (2005)) promulgated by the U.S. EPA during the 1970s under the Clean Air Act have many elements of a voluntary agreement. For the first time, the EPA allowed facilities to avoid new source reviews so long as emission increases from new facilities were offset by emission reductions from other internal sources. The EPA and the industry negotiated the reduction calculations and then translated them into a legally enforceable instrument. E-mail from Barry Elman, U.S. EPA, to Dorit Kerret, Post-Doctoral Fellow, Harvard Center for Risk Analysis, Harvard School of Public Health (Sept. 24, 2004) (on file with author). See also Christopher S. Hooper, *Limiting the Use Of Emissions Allowances: A Statutory Analysis of Title IV of the 1990 Amendments to the Clean Air Act*, 5 N.Y.U. ENVTL. L.J. 567, 571-72 (1996) (discussing EPA’s allowance of greater flexibility to firms).

to voluntarily reduce toxic emissions of 17 chemicals.¹⁸ The program called for ratcheting down of hazardous chemicals in two-stages, beginning with a 33% reduction by 1992 and a 50% reduction by 1995. Although only about 16% of the candidate firms answered the call, these firms appear to have met the targets,¹⁹ with one evaluation reporting an average drop in emissions of 46% from the 1988 baseline.²⁰

Yet in retrospect, the true efficacy of the voluntary program remains unclear. It has been pointed out that much of the reduction in emissions came prior to the advent of the program between 1988 and 1990, with similar reductions made by nonparticipating firms.²¹

Subsequent “macro” initiatives called for voluntary adoption of energy efficient lighting (Green Lights)²² and a labeling program to reduce energy consumption in computer equipment (Energy Star).²³ Yet, these U.S. programs fell short of “formal” contractual agreements and companies did not suffer any consequences if environmental objectives were not met.

During the 1990s, a second series of federal policies that were self-pronounced alternatives to American command and control regulatory programs emerged. These tied industrial actors to improved environmental performance through “voluntary agreements.” The programs spawned numerous agreements, including the aforementioned “micro-contracts” between regulatory agencies and individual firms. The result was a dynamic like that of the typically rough and tumble atmosphere that emerges when negotiating the issuance of environmental

18. Seema Arora & Timothy Cason, *An Experiment in Voluntary Environmental Regulation: Participation in EPA's 33/50 Program*, 28 J. ENVTL. PLAN. & MGMT 271 (1995) [hereinafter Arora & Cason, *An Experiment in Voluntary Environmental Regulation*]. See also Eric W. Orts, *Reflexive Environmental Law*, 89 NW. U. L. REV. 1227, 1284-87 (1995) (arguing that traditional command and control regulations are not effective and that the U.S. should adopt an eco-management auditing scheme).

19. Eric W. Orts & Kurt Deketelaere, Introduction, *Comparative Approaches to Regulatory Innovation in the United States and Europe*, in ENVIRONMENTAL CONTRACTS—COMPARATIVE APPROACHES TO REGULATORY INNOVATION IN THE UNITED STATES AND EUROPE 11, 12 (Eric W. Orts & Kurt Deketelaere eds., 2001).

20. J. DAVIES & J. MAZUREK, RESOURCES FOR THE FUTURE, INDUSTRY INCENTIVES FOR ENVIRONMENTAL IMPROVEMENT: EVALUATION OF U.S. FEDERAL INITIATIVES (1996).

21. United States General Account Office, *Toxic Substances: EPA Needs More Reliable Source Reduction Data and Progress Measures*, GAO/RCED-94-93 (1993). See also Khanna & Damon, *supra* note 14, at 3.

22. Participants were expected to install high-efficiency lighting in their facilities with a projected full return on initial investment within five years.

23. The U.S. EPA reported 90% participation by U.S. computer, printer and monitor producers by 1995. See Eric W. Orts & Kurt Deketelaere, *The Quest for Cooperative Environmental Management: Lessons from the 3M Mutchinson Project XL in Minnesota*, in ENVIRONMENTAL CONTRACTS—COMPARATIVE APPROACHES TO REGULATORY INNOVATION IN THE UNITED STATES AND EUROPE 148 (Eric W. Orts & Kurt Deketelaere eds., 2001).

permits. Of these, the XL program (an acronym of sorts for “excellence” and “leadership”) initiated by the Clinton Administration is considered to be the most ambitious.

Beginning in 1993, the XL program encompassed four parallel voluntary efforts, targeting: facilities, sectors, government agencies, and communities.²⁴ Regulators attempted to work at plant-specific levels to increase efficiency and flexibility to allow companies to develop environmentally superior XL plans capable of replacing compulsory regulatory requirements. At the end of a structured process where plans are submitted, reviewed, and compared to the default permit conditions, a contractual commitment is created by participating firms who adopt the binding agreements.

Currently, the EPA coordinates at least forty voluntary programs.²⁵ Some, like the *Common Sense Initiative* (CSI) that sought industry-wide regulation, were more ambitious and suffered accordingly.²⁶ When unenthusiastic industry groups withdrew from negotiations with the government, the program was abandoned. Among the more notable recent initiatives is *Climate Leaders*,²⁷ a 2002 initiative where firms undertake a corporate commitment to reduce GHG to a level beyond that demanded under the Clean Air Act for each respective industry. As of 2004, a minimum of twenty of the fifty-four companies that joined the *Climate Leaders* group have launched comprehensive GHG control strategies with concrete emission reduction goals.²⁸ The EPA estimates

24. Daniel Hirsch, *Understanding Project XL: Comparative Legal and Policy Analysis*, in ENVIRONMENTAL CONTRACTS—COMPARATIVE APPROACHES TO REGULATORY INNOVATION IN THE UNITED STATES AND EUROPE 116-120 (Eric W. Orts & Kurt Deketelaere eds., 2001).

25. Elman, *supra* note 17. These programs are loosely coordinated in the EPA’s Office of Policy, Economics and Innovation. VOLUNTARY PARTNERSHIPS PROGRAMS, ENVIRONMENTAL PROTECTION AGENCY, <http://www.epa.gov/partners/programs> (last visited Nov. 15, 2005).

26. Gelfrey C. Hazard & Eric W. Orts, *Environmental Contracts in the United States*, in ENVIRONMENTAL CONTRACTS—COMPARATIVE APPROACHES TO REGULATORY INNOVATION IN THE UNITED STATES AND EUROPE 71, 75-76 (Eric W. Orts & Kurt Deketelaere eds., 2001).

27. CLIMATE LEADERS, ENVIRONMENTAL PROTECTION AGENCY, <http://www.epa.gov/climateleaders/index.html> (last visited Nov. 15, 2005).

28. A sampling of the more impressive corporate commitments posted on EPA’s web site include: 3M of St. Paul, Minnesota that pledged to reduce its GHG emissions by 30 percent from 2002 to 2007; Advanced Micro Devices, Inc. of Sunnyvale, Calif. pledged to reduce global greenhouse gas emissions by 40 percent per Manufacturing Index from 2002 to 2007; Eastman Kodak Company of Rochester, N.Y. pledged to reduce its total worldwide greenhouse gas emissions by 10 percent from 2002 to 2008; International Paper of Stamford, Conn. pledged to reduce its total U.S. greenhouse gas emissions by 15 percent from 2000 to 2010; General Motors has pledged to reduce total greenhouse gas emissions by 10% for all of their North American facilities from 2000 to 2005. Environmental Protection Agency, *Ten Major Corporations Pledge Greenhouse*

that if implemented, these measures will lead to a reduction of 7.5 million metric tons of carbon equivalent per year. Such reductions are comparable to the greenhouse gas emissions of five million cars per year.²⁹

“*Waste Wise*” is another federal voluntary partnership program that offers modest technical support to help institutions undertake waste inventories and reduction programs. The expectation behind the initiative is that the inherent savings of reducing garbage disposal costs will spur participation. Indeed, in 54 industrial sectors, some 1400 firms design their own waste reduction programs. Participants range from large corporations and hospitals to universities and Indian tribes.³⁰ Yet, the vague and fuzzy nature of voluntary participation raises questions about the program’s effectiveness as a replacement for a regulatory integrated waste management initiative. The EPA’s own promotional materials are revealing:

There is no fee for membership in WasteWise. EPA designed WasteWise to be a free, voluntary, flexible program. The amount of time and money you invest is up to you! You are free to set goals that are the most feasible and cost-effective for your organization. In the long run, waste reduction can save your organization money.³¹

A second voluntary program is the *National Environmental Performance Track Program*.³² Under this initiative, the EPA recognizes “top environmental performers and leaders” for a variety of activities in various industries. Over 340 facilities have met the criteria for participation by demonstrating excellence in areas such as compliance, community outreach, and environmental management system implementation, as well as past and future voluntary achievements. In return, the EPA promises a variety of benefits in terms of expeditiousness and flexibility during the permitting process. The first formal rules under the program were signed by the EPA’s Administrator and promulgated on April 22, 2004.³³ These rules offer participants a “discount” to allow hazardous waste generators up to 180 days, and in

Gas Reductions, Press Release, Jan. 13, 2004, <http://yosemite.epa.gov/opa/admpress.nsf/b1ab9f485b098972852562e7004dc686/df3979e129d138c485256e1a0060e213?OpenDocument>.

29. *Id.*

30. WASTEWISE, ENVIRONMENTAL PROTECTION AGENCY, <http://www.epa.gov/wastewise> (last visited Nov. 15, 2005).

31. WasteWise Program—Program Overview, <http://www.epa.gov/wastewise/about/overview.htm> (last visited Nov. 15, 2005).

32. NATIONAL ENVIRONMENTAL PERFORMANCE TRACK, ENVIRONMENTAL PROTECTION AGENCY, <http://www.epa.gov/performancetrack> (last visited Nov. 15, 2005).

33. 40 C.F.R. § 63.10 (2004).

certain cases 270 days, to accumulate hazardous waste without a RCRA³⁴ permit, and to simplify reporting requirements.

For the initial two years of the *Performance Track* program, the regulatory and administrative actions that have been developed for program participants have been very limited.³⁵ This has caused a certain degree of cynicism on the part of many companies that have been hesitant to join the initiative. However, several states have instituted programs to reward environmentally conscientious performers.³⁶

In addition to “voluntary” government programs, industry has launched several “product stewardship” initiatives. For example, the *National Electronics Product Stewardship Initiative* (NEPSI) has emerged as a network comprised of a variety of stakeholders (manufacturers, retailers, government, environmental groups, etc.) interested in developing the financing, logistics, and infrastructure required to expand the reuse and recycling of televisions and personal computers.³⁷ Similar initiatives have been launched for areas such as carpeting recovery,³⁸ paint collection and reuse,³⁹ and the recycling of batteries.⁴⁰ *Responsible Care* is another well-publicized initiative, run by

34. Resource Conservation and Recovery Act of 1976, Pub. L. No. 94-580, 90 Stat. 2795 (1976).

35. Elman, *supra* note 17.

36. Arizona: Environmental Strategic Alliance; California: Cal/EPA Environmental Management Systems Project; Colorado: Environmental Leadership Program; Delaware: Principles for Responsible Industry in Delaware; Florida: Partnership for Ecosystem Protection; Georgia: Pollution Prevention Partners Program; Idaho: GEMStars; Illinois: Regulatory Innovation Pilot Program (RIPP); Kentucky: Environmental Excellence Awards; Louisiana: Environmental Leadership Pollution Prevention Program; Maine: Smart Tracks for Exceptional Performers and Upward Performers (STEP-UP); Massachusetts: Environmental Stewardship Program; Michigan: Clean Corporate Citizen; Minnesota: EMS Project; Missouri: Missouri Environmental Management Partnership; North Carolina: Environmental Stewardship Initiative; New Jersey: Silver Track Program for Environmental Performance; New Mexico: Green Zia Pollution Prevention Partnership; Oregon: Green Permits; South Carolina: Environmental Excellence Program; Tennessee: Pollution Prevention Partnership; Texas: Clean Texas, Texas EMS; Utah: Clean Utah!; Virginia: Environmental Excellence Program; Vermont: Business Environmental Leadership; Washington: Environmental Excellence Program; Wisconsin: Environmental Cooperation Pilot Program; West Virginia: Sustainable Business Program. E-mail from Lisa Grogan-McCulloch, staff member, National Environmental Performance Track, to Dorit Kerret, Post-Doctoral Fellow, Harvard Center for Risk Analysis, Harvard School of Public Health (Oct. 4, 2004) (on file with author).

37. National Electronics Product Stewardship Initiative, <http://eerc.ra.utk.edu/clean/nepsi> (last visited Nov. 15, 2005).

38. Carpet America Recovery Effort, <http://www.carpetrecovery.org/about/index.asp> (last visited Nov. 15, 2005).

39. Product Stewardship Institute, http://www.productstewardship.us/prod_paint_nat_dia.html (last visited Nov. 15, 2005).

40. Rechargeable Battery Recycling Corporation, <http://www.rbrc.org> (last visited Nov. 15, 2005). This initiative was actually a response to the challenge posed by 1996

the chemical industry, where “continuous improvement” is expected of participants in the area of employee health and safety as well as community outreach.⁴¹ While these industry-initiated programs may produce environmental progress, such are beyond the scope of this article which aims to focus on policies launched and overseen by government entities.

Almost a decade after their initiation, voluntary government programs have been assailed on numerous grounds. Because the EPA has not been able to empirically demonstrate “superiority” in the outcomes of the participating companies, it is not clear whether similar or better results could have been achieved by conventional command and control programs. Moreover, the amount of personnel hours and regulatory energy required to complete effective plant-specific agreements is prodigious and will require an expansion of resources for environmental agencies. Some complain that the firms selected for participating enjoy an unfair competitive advantage, although clearly the innovation associated with some of the alternative technologies and processes involved considerable expense.⁴² Finally, the conspicuous shortage of sanctions associated with most of the voluntary programs and the clear lack of personnel required to assure compliance with program commitments, raise concerns about “green wash” and abuse.

To appropriately summarize this review of American voluntary programs, four additional federal initiatives which have spawned “microcontracts” are worthy of mention.⁴³ These initiatives include:

- a) *Prospective purchaser agreements* that encourage development of contaminated brownfields in inner cities by exempting developers from some of the potential liability created under CERCLA;⁴⁴

federal legislation: “The Mercury-Containing and Rechargeable Battery Management Act,” designed to phase out the use of mercury batteries in the U.S. and facilitate the recycling of nickel, cadmium and small-sealed lead acid batteries. 42 USC § 14302, (1996). The resulting “Rechargeable Battery Recycling Corporation” now boasts impressive numbers. Since its inception, the corporation has recycled over 19 million pounds of rechargeable batteries. Consumers can find the nearest drop-off location by going on-line at www.rbrc.org or calling toll free 1-800-8-BATTERY.

41. American Chemistry Council, <http://www.americanchemistry.com> (last visited Nov. 15, 2005).

42. Hirsch, *supra* note 24, at 139.

43. *Id.* at 68-77.

44. Comprehensive Environmental Conservation and Recovery Act, 42 U.S.C.S. § 9607(a) (2005). This act imposes a particularly high level of liability for property owners of toxic waste sites regardless of their ownership at the time of contamination or their role in creating the hazard. Developers are understandably cautious. They often abandon lands that may be critical for urban renewal, leaving them deserted and perilous. The “prospective purchaser agreement,” (PPA) established by the U.S. EPA in 1989 typically set a maximum cleanup level that will be delineated in advance at a level that is

- b) *Supplemental environmental project* (SEP) provisions that are forged as part of a settlement in a criminal or civil action against polluters;⁴⁵
- c) *Habitat conservation plans* approved and implemented under the Endangered Species Act;⁴⁶ and,
- d) *Wetlands mitigation and banking agreements* that formalize arrangements under the Clean Water Act.⁴⁷

Some EPA officials do not categorize the above programs as voluntary inasmuch as their implementation involves wielding regulatory teeth: once an entity elects to undertake these environmental commitments, (e.g., provision of an acceptable habitat conservation plan or wetlands mitigation/banking plan) the terms of the agreement become mandatory.⁴⁸ Yet in fact, these are closer to the European models of covenants and voluntary agreements, which are described further in later paragraphs.

In summary, environmental agreements remain a tool utilized by American regulatory agencies for in-persona, site-specific solutions, or non-binding, environmental achievement initiatives rather than a

somewhat more lenient than that which would otherwise be imposed. There is no "statutory" basis for the program, which is largely a contractual agreement between the agency and developers. See Superfund Program; De Minimis Landowner Settlements, Prospective Purchaser Settlements, 54 Fed. Reg. 34235 (Aug. 18, 1989).

45. Using "prosecutorial (prosecutorial?) discretion," the U.S. EPA will frequently allow for implementation of an environmental project to become a central component of a civil settlement or criminal plea agreement, in lieu of part of the monetary penalty. The projects typically exceed the standard statutory level of environmental performance, and the agency enjoys the advantage of contempt proceedings to ensure full implementation. The EPA sets forwards its criteria and general policy for "supplemental environmental projects" in 63 Fed. Reg. 24796 (May 5, 1998).

46. Endangered Species Act, 7 U.S.C. § 136; 16 U.S.C. §§ 1531-1541 (2000). The Act imposes extremely broad and stringent limitations on lands which are home to endangered species. In order to ease the burden on landowners, the Department of Interior allows for modest activities on the land (e.g., house construction or farming), which are euphemistically called "incidental takings" contingent to the preparation of Habitat Conservation Plans. These plans provide specifics of the activity in question, as well as assurances that they will not result in unrecoverable damage to the species. The resulting agreement fall into Stewart's "microcontract" category. See U.S. DEP'T OF INTERIOR, FISH AND WILDLIFE SERVICE, HABITAT CONSERVATION PLANNING HANDBOOK, (1996); see also Dana Clark & David Downes, *What Price Biodiversity? Economic Incentives and Biodiversity Conservation in the United States*, 11 J. ENVTL. L. & LITIG. 9, 55 (1996).

47. In order to protect wetlands, the Clean Water Act requires developers to both mitigate the impact of the specific construction activities on wetlands and to establish "substitute" wetlands for any lost during the project. The specific terms are framed in agreements found in the permits. 33 U.S.C. § 1344 (1994). See generally Royal C. Gardner, *Banking on Entrepreneurs: Wetlands, Mitigation, Banking, and Takings*, 81 IOWA L. REV. 527 (1996).

48. Elman, *supra* note 17.

replacement for *en rem*, sector-wide environmental standards. There are areas in which environmental progress has been elusive where there have been calls for broader utilization of voluntary agreements. For example, for over a decade some commentators have suggested environmental agreements as a means for producing the changes in American industry required to meet the international objectives of certain environmental conventions.⁴⁹ In contrast to the European orientation, the U.S. has yet to embrace a strategy of binding voluntary agreements as a centerpiece of its respective environmental policy.

III. Categorization of Environmental Voluntary Agreements

The relative virtues of a voluntary agreement as a policy strategy ultimately depend on the operational definition applied to the term “effectiveness.” Yet, given the extremely different regulatory climates and political cultures that exist around the world today, any characterization needs to fully appreciate the local nuances and circumstances at hand. In short, the definition of an effective environmental voluntary agreement is a function of its existing constraints and possibilities. Both the available alternatives as well as the cultural, political, and social arena in which it operates affect the definition of effectiveness. When distilled to its most basic elements, one highly simplified definition of an effective environmental agreement has been offered: “an agreement that successfully sets and implements high environmental standards.”⁵⁰ But even such a generic touchstone may not apply when there are no regulatory alternatives available. Nor is it accurate if the desired outcome is to take maximum advantage of the unique potential qualities of environmental agreements. These options include increasing cooperation, building knowledge infrastructure, sharing information, or general ‘resource development.’ These options are often referred to as “soft benefits.”

49. For example, the CFC industry could negotiate voluntary phase-out compliance declarations of intention. Such statements, if released publicly, would enhance corporate “green” images, increase the likelihood of industry compliance, and encourage the leveling of the competitive playing field. However, the reliance on international environmental covenants could generate concern, particularly in the U.S., about the lack of legal accountability on the part of both government and “regulated” TNCs. Barbara A. Boczar, *Avenues For Direct Participation Of Transnational Corporations In International Environmental Negotiations*, 3 N.Y.U. ENVTL. L.J. 2, 35 (1994).

50. See Paton, *supra* note 10, at 40. “Environmental effectiveness refers to the ability of a voluntary approach to achieve its intended results: typically emissions reductions or energy savings.” See also Charles J. Higley, *Voluntary Approaches: An Introduction*, in CONCERTED ACTION ON VOLUNTARY APPROACHES, INTERNATIONAL POLICY WORKSHOP ON THE USE OF VOLUNTARY APPROACHES 3, 9 (2001), available at <http://www.cerna.ensmp.fr/Progeuropeens/CAVA/PolicyBrief.pdf> [hereinafter CAVA].

Taking into consideration this variability, we suggest a preliminary distinction prior to presenting criteria for predicting and evaluating the environmental effectiveness of voluntary environmental agreements. In assessing the advantages of voluntary programs, a differentiation should be made between countries with powerful environmental governmental authorities⁵¹ and countries whose regulators are weak or less sophisticated.⁵² This can change within a given jurisdiction, with shifts in the particular ideologies of ruling parties or politicians. Hence, contrasting local circumstances may lead to both dynamics occurring simultaneously in the same country. To simplify the discussion, however, the distinction between powerful and weak regulatory authorities will be maintained.

A. *Complementary Voluntary Environmental Agreements*

Voluntary environmental agreements can serve two very different functions in environmental regulatory policy. First, they can provide “support” for existing government efforts. These efforts are labeled *complementary voluntary environmental agreements*. The support function of government efforts is undoubtedly the most common role identified with EU member countries.⁵³ In this regard, voluntary agreements aspire to attain more ambitious environmental objectives than those existing under the current regulations.⁵⁴

The question immediately arises: “Why would industry voluntarily bind itself to more stringent environmental provisions?” Arguably, the most prominent reason is the threat of implementing another regulatory program, which can be viewed as a “regulatory threat.” The importance of this motive will be further discussed in the next section. However, apart from the regulatory threat motivation,⁵⁵ internal as well as external drivers influence such a decision.⁵⁶ Relevant external drivers can be divided into three sub-categories. First, industries may gain significant

51. *See infra* Part A.

52. *See infra* Part B.

53. *See* Marc De Clercq, *National Patterns in the Use of Voluntary Approaches in Environmental Policy*, in CAVA, INTERNATIONAL POLICY WORKSHOP ON THE USE OF VOLUNTARY APPROACHES 13, 18 (2001), available at <http://www.cerna.ensmp.fr/Progeuropeens/CAVA/PolicyBrief.pdf>.

54. *Id.*

55. *See infra* Part II.

56. “External drivers comprise all factors outside an organization that influence its routines and competencies. . . .” Internal drivers are all of the factors within the organizations influencing its decisions. *See* RICHARD N. L. ANDREWS ET AL., National Database on Environmental Management Systems, ENVIRONMENTAL MANAGEMENT SYSTEMS: DO THEY IMPROVE PERFORMANCE? 94 (2003), available at <http://ndems.cas.unc.edu>.

economic advantages from the regulatory authorities for taking part in environmental agreements. Long-term planning and additional flexibility in implementing compliance requirements are examples of such benefits.⁵⁷ In addition, direct incentives such as subsidies, grants, technological assistance, and even regulatory relief may be offered by the regulatory authorities to the participating plants.⁵⁸ Business considerations such as green consumerism,⁵⁹ pressure by clients on the production chain,⁶⁰ and maintaining a positive environmental image⁶¹

57. For instance, some of the Dutch voluntary agreements are integrated with their environmental permits system. The plants are required to make their own four-year environmental plans, which are integrated into the plants' environmental permits following their approval by the local environmental authorities. Thus, there are two main ways that the plants benefit. First, the conditions in the permits are valid for four years, while otherwise environmental authorities are free to change the conditions during this period. In addition, the plants are allowed to set their own environmental plans, while normally environmental agencies dictate highly detailed instructions within environmental permits. See European Environment Agency 2, *supra* note 14; Interview with Dick Hortensius, Senior Standardization Consultant Environment, Netherlands Standardization Institute NEN Industry, in Delft, Neth. (Sept. 12, 2002); Interview with Frank Van Der Lans, Senior Permit Writer, and A. De Buck, Coordinator target group industry, DCMR, in Schiedam, Neth. (Sept. 13, 2002); Interview with Hoppenner, *supra* note 8.

The effect of this flexibility is particularly important for certain kinds of industry. For instance, the electronics industry, which is characterized by frequent and rapid changes in products and processes, may find flexibility to be more valuable than what other kinds of industry would consider it. This is one of the reasons that the American electronics industry has greatly benefited from Project XL. This Program waived the obligation for permit renewal at each change in processes or chemicals in return for excellent environmental performance.

58. See ten Brink, *supra* note 8, at 103; Karamanos, *Corporate, Government, and Nonprofit Sector Incentives*, *supra* note 5, at 2; Panagiotis Karamanos, *Corporate Incentives for Participation in Voluntary Environmental Agreements—Electric Utility Companies and the Climate Challenge Program*, Patrick ten Brink (ed.) VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE USE 32 (Patrick ten Brink ed., 2002) [hereinafter Karamanos, *Corporate Incentive for Participation*].

59. In some cases consumers are willing to pay higher prices for the same products if they know that the plant maintains certain environmental standards. In other cases consumers will prefer a "green product" when offered at the same price as a non-green product. However, these trends depend on cultural as well as societal aspects. See Arora & Cason, *A Voluntary Approach to Environmental Regulation*, *supra* note 4; Khanna & Damon, *supra* note 14, at 1; OECD, *supra* note 14, at 27; Magali Delmas & Ann Terlaak, *A Framework for Analyzing Environmental Voluntary Agreements*, 43(3) CAL. MGMT. REV. 44, 52 (2001); Higley, *supra* note 50, at 7; ten Brink, *supra* note 8, at 34.

60. Some companies demand that their suppliers join certain voluntary initiatives. See Karamanos, *Corporate Incentive for Participation*, *supra* note 58, at 55. In addition, insurance companies as well as finance companies may stipulate their services with meeting certain environmental standards. This is especially true in developing countries. See Manuel M. Cabugueira, *Co-Regulation Performance Factors—Lessons from Theory and from Practice in Environmental Agreements*, in VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE USE, 399, 409 (Patrick ten Brink ed., 2002); Marc De Clercq & Andre Suck, *Theoretical Reflections on Negotiated Agreements*, in NEGOTIATING ENVIRONMENTAL AGREEMENTS IN EUROPE—CRITICAL

constitute a second external driver for joining voluntary agreements. The third external driver is community pressure.⁶²

Internal drivers are further divided into three categories. The organizational culture within plants may influence environmental decisions in two fundamental ways. The environmental perception of the plant is influenced by human factors. Managers who are environmental champions may lead a general change in the attitude of the company towards environmental issues.⁶³ In general, companies that grant extensive latitude to plant managers are more likely to adopt more courageous environmental decisions.⁶⁴ Improved relationships with company employees may be another internal factor for joining voluntary agreements.⁶⁵ Another factor influencing the choices of plants to join environmental agreements involves indirect economic benefits which may result due to changes in the production process. Voluntary agreements have also led to innovative solutions for meeting environmental objectives.⁶⁶

In order to achieve more ambitious goals via voluntary agreements, industry must be aware of the advantages that such an initiative confers. This is also true regarding the threat of regulatory action. A regulatory threat will only be effective if the voluntary agreement offers the

FACTORS FOR SUCCESS 9, 57 (Marc De Clercq ed., 2002); Jonathon Hanks, *A Role for Negotiated Environmental Agreements in Developing Countries*, in VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE USE 159 (Patrick ten Brink ed., 2002).

61. Hanks, *supra* note 60; Khanna & Damon, *supra* note 14; Arora & Cason, *A Voluntary Approach to Environmental Regulation*, *supra* note 4.; Interview with Hoppener, *supra* note 8.

62. A voluntary agreement may be the result of community pressures as well as lobbying by NGOs who demand a response to a particular environmental problem. See Hanks, *supra* note 60; Andrews, *supra* note 56, at 94. In addition, voluntary agreements may be a tool for improving trust and relationship with the industry. The effect might reduce the NIMBY (Not In My Back Yard) symptom, reduce negative publicity, and alleviate obtaining environmental permits. See Karamanos, *Corporate Incentive for Participation*, *supra* note 58, at 58; OECD, *supra* note 14, at 25.

63. Therefore, the company might perceive signing a voluntary agreement as “the right thing to do.” The positive attitude of managers might be affected by exposure to environmental information via the media or workshops. See Karamanos, *Corporate Incentive for Participation*, *supra* note 58, at 52; Karamanos, *Corporate, Government, and Nonprofit Sector Incentives*, *supra* note 5, at 4; Andrews, *supra* note 56, at 94.

64. Andrews, *supra* note 56, at 94.

65. Voluntary agreements are perceived as increasing employees’ motivation and contributing to improved productivity. See Karamanos, *Corporate Incentive for Participation*, *supra* note 58, at 58; OECD, *supra* note 14, at 25.

66. Efficient technological solutions may be the result of knowledge, identifying new aspects for improvements, and/or more efficient use of materials and energy. See Higley, *supra* note 50, at 7; Hanks, *supra* note 60, at 171; Delmas & Terlaak, *supra* note 59, at 50; Karamanos, *Corporate Incentive for Participation*, *supra* note 58; OECD, *supra* note 14, at 25.

industry real advantages relative to the alternative. Two models of voluntary agreements in EU countries seek to utilize these dynamics.

The first model is based on Dutch covenants.⁶⁷ A key advantage of covenants in the Netherlands lies in their integration within the local permit system. Normally, detailed environmental conditions are dictated by Dutch environmental authorities which offer a more flexible approach to plants which sign the covenant. Participating plants are permitted to craft their own environmental plans which replace environmental conditions stipulated by the authorities. Since the covenants include several areas of environmental protection, the plants enjoy greater flexibility in setting the timetable for addressing different environmental features.⁶⁸

The second model relies on the setting of sectoral targets. The authority to divide the burden of pollution reduction among its different components provides plants with enhanced flexibility.⁶⁹ Such a system can take multiple forms.⁷⁰ Two examples of such voluntary agreements are the *Belgian Agreement upon the Collection and Recycling of Batteries* (BBAT) and the *Dutch Covenant Regulating the Reduction of Sulphur Dioxide and Nitrogen Oxide Emissions by the Power Generation Industry* (DSO₂). The BBAT agreement was signed by the Belgian government and a representative organization. The representative organization, BEBAT, was established for the sake of negotiating and implementing the agreement.⁷¹ The BBAT agreement stipulates collection and recycling targets for the Belgian batteries industry.⁷² The BEBAT organization placed collection boxes in different locations, started an awareness campaign, and conducted research for monitoring its progress.⁷³ BEBAT methods for meeting the collection and recycling targets proved to be more cost effective than the alternative.⁷⁴

67. In this section we refer to the Dutch covenants whose aim is to implement the Dutch National Environmental Policy Plan (NEPP). The NEPP is a strategy designed to achieve sustainable development goals by 2010. The plan sets national sectorial quantitative environmental targets. See European Environment Agency 2, *supra* note 14.

68. Interview with Hoppener, *supra* note 8.

69. The success of such an agreement significantly depends on the aforementioned characteristics of the representative organization. See Part III, *Ex Ante* evaluation, "the industrial sector." Methods for avoiding free riding are especially important in these cases.

70. For further discussion and examples of voluntary agreements with sectoral targets, see De Clercq *supra* note 53, at 18-26; De Clercq & Ameels, *supra* note 5.

71. See De Clercq & Ameels, *supra* note 5 (BEBAT is the acronym for Belgian Batteries).

72. *Id.*

73. *Id.* at 126.

74. *Id.* at 122 (the alternative would have been taxing all batteries).

In DSO₂, the electricity sector was represented by SEP,⁷⁵ an organization which received the authority to coordinate electricity production at four power generating companies, as well as make decisions about imports, investments, transmission costs, and electricity prices.⁷⁶ SEP adopted sector-level means for achieving the reduction targets, such as closing older plants and equipping other plants with special installations or technologies.⁷⁷ “The covenant offered SEP the opportunity to achieve the targets at sector level in the most cost-effective way.”⁷⁸

B. Capacity Building Voluntary Agreements as the “Lesser Evil”

Voluntary agreements have a different role in jurisdictions where environmental enforcement authorities are less powerful. Here, voluntary agreements serve two different and presumably less ambitious functions. In the long-run, these may be no less significant. In some cases, they fill a bridging or transition function. The agreement serves as a “preliminary stage in the legislative process until the need for other forms of environmental controls . . . have been settled.”⁷⁹ Alternatively, the agreement can simply serve as a substitute for government issued rules when regulatory capacity is limited. This group is entitled *Capacity Building Voluntary Agreements*.

In Portugal, for instance, voluntary agreements have filled such a transition function. Before joining the European Union (EU), environmental issues constituted a low priority in Portugal. Environmental awareness about environmental effects and pollution prevention measures and control opportunities was extremely low amongst Portuguese industries during the 1980s and non-compliance was common.⁸⁰

Portugal was required by the EU to upgrade its environmental regulations and enforcement systems.⁸¹ Due to the magnitude of the gap and the limited time available to the Portuguese government, it was clear that new instruments were needed to complement and implement the new legislation.⁸² The first Portuguese voluntary agreement, the *Pulp Paper Voluntary Agreement*, is now considered to be a success story despite

75. Samenwerkende Elektriciteits Productiebedrijven (Cooperating Electricity Production Companies).

76. Immerzeel, *supra* note 5, at 270.

77. *Id.* at 279.

78. *Id.* at 283.

79. De Clercq, *supra* note 53, at 18.

80. European Environment Agency 2, *supra* note 14, at 78.

81. *Id.*

82. *Id.*

having delays in meeting its targets.⁸³ Environmental improvements occurred in all participating companies in comparison to lack of emissions reduction and perennial non-compliance prior to the agreement.⁸⁴ Arguably, its most important result is the contribution to capacity building among the environmental authorities, which ultimately led to legislation.⁸⁵

The transitional function of voluntary agreements could well become permanent in cases where there is a complete environmental regulatory void. Such is the situation in many developing countries. Where there is no anticipated capacity for implementation of a command and control program by environmental authorities in the foreseeable future, voluntary agreements offer a modicum of direction. Examples of such agreements are found in Columbia and Costa Rica. In Columbia, the *Cleaner Production Agreement* resulted in environmental improvements such as a decrease in the level of sugar-cane burning, a reduction in the use of agrochemicals in the flower sector, and improvements in the quality of effluent from certain sectors.⁸⁶ The *Costa Rican Coffee Processing Industry Agreement* resulted in significant improvements in the environmental performance of the coffee-processing industry.⁸⁷

Regardless of the specific function that a given environmental agreement serves, environmental authorities need to be aware of the actual role it plays in the specific circumstances and take maximum advantage accordingly. This is one of the reasons that a written justification for selecting a voluntary instrument is advisable. In cases where voluntary agreements have been designated as a transition measure, authorities must make sure that the arrangement does not become permanent and ensure specific target dates for anticipated regulatory replacements.

83. *Id.* at 85.

84. *Id.* at 85, 89.

85. European Environment Agency 2, *supra* note 14, at 88; Interview with Patrick ten Brink, Senior Fellow and Head of Office, Institute for European Environmental Policy, in Brussels, Belg. (Sept. 17, 2002).

The Japanese experience is somewhat different, but still serves a similar function. The Japanese voluntary agreements are negotiated by industry and the local authorities. They were originally used as temporary measures for pollution prevention while the government was not using efficient environmental policy tools. Presently, the Japanese environmental voluntary agreements are used mainly to confront the "time-lag between the recognition of a problem and governmental legislation." Voluntary agreements in Japan are achieved much faster than regulations. See Tsutsumi, *supra* note 14, at 108; Welch & Hibiki, *supra* note 5, at 531.

86. See Hanks, *supra* note 60, at 164.

87. "... the level of contamination attributable to the industry was reduced from 21% to 5%. . . ." *Id.* at 167.

Israel's experience with environmental agreements offers many examples of these dynamics. Before describing the specific case and presenting a formal evaluation of its implementation, it is prudent to consider the specific criteria by which environmental agreements can be judged.

IV. Evaluation of Agreements

The most fundamental distinction between types of evaluation criteria for evaluating voluntary agreements is between *ex ante*⁸⁸ (indirect/prospective) and *ex post*⁸⁹ (direct/retrospective) evaluation. *Ex post* evaluation is important for assessing the implications of a voluntary agreement after it has been in operation for a time. Direct evaluation is accomplished by examining three factors concerning voluntary agreements already in operation. The first factor, generally defined as "capability," is the ability of the agreement to affect its target population. High levels of participation and compliance are the major indicators of success.⁹⁰ In other words, does the agreement change the way the industrial party to the agreement operates? The second criterion is the "impact" of the agreement on environmental improvement.⁹¹ This is examined by determining whether the physical indicators of environmental performance reflect the desired change. Finally, the third criteria is "resource development," which can offer additional benefits for the agreement such as enhancing the learning process, improving communication, or expanding trust and awareness about environmental problems.⁹²

88. *Ex Ante* evaluation is performed prior to operating the agreement. The evaluation is aimed to assess the background of the agreement as well as its context. However, it does not consider the agreement's results and achievements in practice.

89. *Ex post* evaluation is meant to evaluate the outcomes of the agreement.

90. See De Clercq & Suck, *supra* note 60, at 54; Interview with Hoppener, *supra* note 8. The effectiveness of the agreement is correlated with the percentage of the joining companies. It has been found that when a small fraction of the industry signs the agreement, the objectives will not be achieved. See also Roger L. Burritt, *Voluntary Agreements: Effectiveness Analysis—Tools, Guidelines and Checklist*, in VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE USE, 367, 372 (Patrick ten Brink ed., 2002) [hereinafter Burritt, *Voluntary Agreements*]. A low compliance rate will also render the agreement futile.

91. De Clercq & Suck, *supra* note 60, at 54. The impact of the agreement might differ from its stated targets in two main aspects. The agreement might result in environmental reductions, even if it does not meet the original objectives. In addition, the agreement might have a general effect on the environmental behavior of plants.

92. De Clercq & Suck, *supra* note 60, at 54; see also Stephan Ramesohl & Kora Kristof, *Voluntary Agreements—An Effective Tool for Enhancing Organizational Learning and Improving Climate Policy-Making?*, in VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE USE 341, 354 (Patrick ten Brink ed., 2002); Ken Sexton et al., *Co-Operative Environmental Solutions—Acquiring Competence*

The significance of *ex ante* analysis lies in its predictive capability. Presumably, if external and other objective indicators have the ability to predict the success of voluntary agreements, unsuccessful policy initiatives can be avoided. *Ex ante* prediction provides policy makers with two significant advantages. First, it can improve their ability to choose the most suitable policy tool for the relevant situation. Second, once voluntary agreements have been chosen as the appropriate policy tool, these “predictors of success” can help craft a better accord. The remainder of this section will focus on the challenging task of justifying prediction criteria.

A plethora of effectiveness predictors have been utilized to assess voluntary agreements⁹³ using different rationales and classifications.⁹⁴ However, the literature to date has not characterized effectiveness predictors according to the function that the voluntary agreements serve. We suggest two sets of parameters and approaches which reflect the dichotomous roles discussed in the previous section. This division is usually compatible with both of the aforementioned regulatory situations: a high level of political support and public resources for pollution policies versus jurisdictions where commitment and capacity for environmental protection are low.

for *Multi-Stakeholder Partnership in VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE USE* 64 (Patrick ten Brink ed., 2002).

93. See EUROPEAN ENVIRONMENT AGENCY, ENVIRONMENTAL AGREEMENTS ENVIRONMENTAL EFFECTIVENESS, ENVIRONMENTAL ISSUES SERIES NO. 3(1) (1997), available at <http://reports.eea.eu.int/92-9167-052-9-Voll/en/ea.pdf> [hereinafter European Environment Agency 1]; Marc De Clercq, NEGOTIATING ENVIRONMENTAL AGREEMENTS IN EUROPE – CRITICAL FACTORS FOR SUCCESS 344 (Marc De Clercq ed., 2002); Welch & Hibiki, *supra* note 5; Hanks, *supra* note 60, at 59; Delmas & Terlaak, *supra* note 59; Kathleen Segerson & Thomas J. Miceli, *Voluntary Environmental Agreements: Good or Bad News for Environmental Protection*, 36 J. ENVTL. ECON. & MGMT. 109 (1998).

94. Some studies provide a list of evaluation indicators without any theoretical categorization. See European Environment Agency 1, *supra* note 93 (embracing the classification suggested by the Communication on Environmental Agreements), Communication on Environmental Agreements, *supra* note 9, at 6. See also OFFICE OF CONSUMER AFFAIRS, INDUSTRY CANADA, AN EVALUATIVE FRAMEWORK FOR VOLUNTARY CODES, available at <http://strategis.ic.gc.ca/epic/internet/inoca-bc.nsf/en/ca01227e.html#evaluation>; Hanks, *supra* note 60 (focusing on developing countries); Roger L. Burritt, *Application of Effectiveness Analysis: The Case of Greenhouse Gas Emissions Reduction*, in VOLUNTARY ENVIRONMENTAL AGREEMENTS – PROCESS, PRACTICE AND FUTURE USE 426 (Patrick ten Brink ed., 2002) (focusing on Greenhouse Gas Voluntary Agreements) [hereinafter Burritt, *Application of Effectiveness Analysis*]. Other works suggest different methods for categorizing the predictors. Welch & Hibiki, *supra* note 5 (differentiating between policy aspects and economics aspects); Burritt, *Voluntary Agreements*, *supra* note 90, at 372; Cabugueira, *supra* note 60 (discussing categorization according to different aspects of the voluntary agreement itself).

A. *Effectiveness Predictors for Complementary Voluntary Agreements*

In the following section, a series of proposed predictors for evaluating the environmental effectiveness of complementary voluntary environmental agreements is presented. As mentioned, complementary voluntary agreements aspire to attain more ambitious objectives than those existing under the current regulations. The predictors were developed after interviews with experts from the EU states⁹⁵ and on an extensive literature survey in which the importance of previous work by Flemish Professor of economics and management Marc De Clercq was conspicuous.⁹⁶

We suggest using indirect indicators for three categories according to the different players in the policy arena:

- ❖ the relative power of the environmental authorities,
- ❖ the industrial sector, and
- ❖ the general public.

The fourth category considers the substantive commitments required under the agreement.⁹⁷

1. Power of Environmental Authorities & Regulatory Threat

A preliminary condition for effective voluntary agreements in countries with powerful authorities is a credible alternative regulatory program that will be immediately implemented in the event achievement of the environmental objectives of the agreement fails.⁹⁸ The

95. The interviews were conducted in England, the Netherlands and Belgium in Sept. 2002 by David Lehrer and Dorit Kerret. The study tour was sponsored by a donor whose name is confidential at request. The interviews were conducted with 26 representatives of governmental agencies and non-governmental organizations both from the United States and from the EU.

96. See De Clercq & Suck, *supra* note 60, at 17-20 for De Clercq's suggestions concerning the four hypotheses as indicators of the effectiveness of the voluntary agreements.

97. See De Clercq, *supra* note 53, at 50. The content of the agreement ("specification") is categorized by De Clercq as a part of the direct evaluation criteria. However, we suggest the "content of the agreement" as a part of the indirect evaluation method since evaluating the content does not require inspecting the environmental impact of an already operating agreement. It can be performed promptly after the agreement has been concluded. Furthermore, other "external factors" such as the social structure of the society, the power of the environmental authorities, and the characteristics of the industrial sector influence the content of the agreement. Therefore, the content should be examined along with the other external factors (the indirect effectiveness predictors).

98. De Clercq & Suck, *supra* note 60, at 18; Welch & Hibiki, *supra* note 5, at 227. For economic analysis of the regulatory threat theory, see generally Segerson & Miceli, *supra* note 93; OECD, *supra* note 14, at 12, 105, 134; Paton, *supra* note 10, at 47; Volpi & Singer, *supra* note 4; Immerzeel, *supra* note 5; Singe Krarup, *Can Voluntary Approaches Be Environmentally Effective and Economically Efficient?*, in CONCENTRATED ACTION ON VOLUNTARY APPROACHES (CAVA), INTERNATIONAL POLICY

effectiveness of the threat can be measured both by the alacrity of policy-makers to use the instrument (in cases of non-compliance) and by the severity of the regulatory response.⁹⁹ For example, the failure of the *Common Sense Initiative (CSI)*¹⁰⁰ in the U.S. is frequently attributed to the absence of a compelling alternative threat in the event of a failed agreement.¹⁰¹ Both the BBAT and the DSO₂ cases that were referred to in the previous section offer examples of the positive effect that a regulatory threat can have upon the effectiveness of voluntary agreements. Prior to the BBAT agreement, a Flemish governmental decree imposed an environmental tax upon all batteries in Flanders six months after the decree was issued.¹⁰² Finding the tax economically ineffective, the Belgian industry approached the government with a request for an alternative voluntary agreement. The agreement required that the industry meet the collection percentage. In addition, the agreement indicated that in the case of a failure to comply with collection targets, the industry will have to pay the tax retroactively.¹⁰³

Support for the regulatory threat theory could also be extracted from a comparison between BBAT and a German agreement. While this had similar objectives, it was considered a failure. One of the major explanations for the German agreement's lack of effectiveness was the absence of alternative regulatory tools that would have been implemented in case of a failure.¹⁰⁴

Prior to the DSO₂ agreement, the Dutch Ministry of the Environment planned on tightening the emission standards of Dutch electric companies. For the Dutch industry, this would have meant significant investment in pollution control equipment. Alternatively, the voluntary agreement enabled the industry to achieve the most economically feasible solution for meeting the same sectoral standards. The threat of the original regulations was still floating above the

WORKSHOP ON THE USE OF VOLUNTARY APPROACHES IN BRUSSELS, 70 (2001), available at www.cerna.ensmp.fr/Progeuropeens/CAVA/PolicyBrief.pdf; Interview with Hoppener, *supra* note 8; Interview with Frank Van Der Lans, Senior Permit Writer and A. De Buck, Coordinator target group industry, DCMR, in Schiedam, Neth. (Sept. 13, 2002).

99. De Clercq, *supra* note 53, at 360.

100. Hazard & Orts, *supra* note 26, at 75.

101. *Id.* at 71, 76.

102. The tax was imposed on July 16, 1993, and was supposed to come into effect on January 1, 1994. See De Clercq & Ameels, *supra* note 5, at 113.

103. See De Clercq & Ameels, *supra* note 5.

104. Per-Olof Busch & Helge Jorgens, *Self-Commitment on the Collection and Recovery of Spent Batteries and the Reduction of the Mercury Content in Batteries*, in NEGOTIATING ENVIRONMENTAL AGREEMENTS IN EUROPE—CRITICAL FACTORS FOR SUCCESS 67 (Marc De Clercq ed., 2002) [hereinafter Busch & Jorgens, *Self-Commitment on the Recovery of Spent Batteries*].

industry¹⁰⁵ clearly laying the foundation for a successful voluntary agreement.

2. The Content of the Agreement

The second group of predictors to be used for the indirect evaluation of voluntary agreements concerns the actual substantive contents of the agreement. Setting ambitious goals¹⁰⁶ with a suitable compliance mechanism are the two basic conditions for an effective environmental agreement. Having a clear set of *nonnegotiable* environmental targets is a key factor for maintaining high environmental standards in an agreement.¹⁰⁷

In this sense, the European Commission advises that quantitative objectives should be established (either in absolute figures or as a percentage) as part of environmental agreements.¹⁰⁸ In addition, a mechanism for updating and amending the agreement's objects in the event of scientific or technological progress is essential.¹⁰⁹ Furthermore, as elaborated in the previous section, in order to achieve more ambitious goals, industry must be aware of the advantages that voluntary initiatives

105. See Immerzeel, *supra* note 5, at 113-30.

106. See Krarup, *supra* note 98, at 72; OECD, *supra* note 14, at 99; Burritt, *Voluntary Agreements*, *supra* note 90, at 372; Volpi & Singer, *supra* note 4, at 145; De Clercq & Suck, *supra* note 60; Hanks, *supra* note 60, at 173.

107. For the voluntary agreement to be environmentally successful, negotiation, an essential part of such agreements, should focus on methods for attaining the goals. Interview with Marc De Clercq, Head of the Faculty of Economics and Business Administration, and Tom Verbeke, Assistant Director Gent University, Faculty of Economics and Business Administration, in Gent, Belg. (Sept. 14, 2002); see also European Environment Agency 1, *supra* note 93, at 87; OECD, *supra* note 14, at 104; Dinah A. Koehler, *Navigating Toward a Hungarian Packaging Waste Management Solution*, in VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE USE 218, 226 (Patrick ten Brink ed., 2002); Interview with ten Brink, *supra* note 85; Communication on Environmental Agreements, *supra* note 9, at 15 (the European Commission Communication stresses the importance of defining a set of clear environmental goals prior to the negotiations for the sake of achieving worthy environmental goals). Establishing a clear set of goals is essential for avoiding interpretation problems which might be very costly and cause participants' dropout. See Immerzeel, *supra* note 5; Frank Convery & Francois Leveque, *Applying Voluntary Approaches—Some Insights from Research*, in CONCENTRATED ACTION ON VOLUNTARY APPROACHES (CAVA), INTERNATIONAL POLICY WORKSHOP ON THE USE OF VOLUNTARY APPROACHES IN BRUSSELS 83, 93 (2001), available at www.cerna.ensmp.fr/Progeuropeens/CAVA/PolicyBrief.pdf; OECD 1999, *supra* note 14; De Clercq & Suck, *supra* note 60, at 50; Burritt, *supra* note 90, at 372; Hanks, *supra* note 60, at 173; Interview with Hoppener, *supra* note 8; Interview with Andrew Farmer, Senior Fellow, Institute for European Environmental Policy, in London, Eng. (Sept. 11, 2002).

108. Communication on Environmental Agreements, *supra* note 9, at 12.

109. Ramehsol & Kristof, *infra* note 111, at 356; Communication on Environmental Agreements, *supra* note 9, at 12.

provide. The agreement can offer an effective tool for achieving this purpose. For instance, application of either of the European models for complementary voluntary agreements (setting collective targets for a certain industrial sector or establishing the degree of flexibility in the specific plans) should be specified in the agreement.

Setting proper monitoring details¹¹⁰ and establishing swift mechanisms for sanctions¹¹¹ are crucial conditions as well. To ensure proper monitoring, timetables—including quantified milestones—must be set.¹¹² Sanction schedules can be integrated within any associated environmental permit system, thus ensuring compliance via another binding regulatory tool.¹¹³ Other less punitive disincentives can be applied as well, such as ensuring bad publicity or raising questions about the credibility of the company.¹¹⁴

A decision to opt for environmental agreements over conventional regulation needs to be a transparent and informed one.¹¹⁵ Therefore, an environmental agency should publicly specify its reasons for preferring

110. The monitoring should be reliable, frequently conducted, and its results should be published. See Krarup, *supra* note 98, at 72; Volpi & Singer, *supra* note 4, at 148; Ramesohl & Kristof, *infra* note 111, at 356; Hanks, *supra* note 60, at 173; Regine Barth & Brigit Dette, *The Integration of Voluntary Agreements into Existing Legal Systems*, in CONCENTRATED ACTION ON VOLUNTARY APPROACHES (CAVA), INTERNATIONAL POLICY WORKSHOP ON THE USE OF VOLUNTARY APPROACHES IN BRUSSELS 31, 45 (2001), available at www.cerna.ensmp.fr/Progeuropeens/CAVA/PolicyBrief.pdf; OECD, *supra* note 14, at 12; European Environment Agency 1, *supra* note 93, at 87; Immerzeel, *supra* note 5; Communication on Environmental Agreements, *supra* note 9, at 12 (according to the EU's approach a voluntary agreement could not be considered to be effective in the absence of a reliable monitoring and reporting system).

111. Well-defined sanctions should be applied in cases of non-compliance. Sanctions can be fines, cancellation of subsidies, exemption from the agreement and even from an association. It is critical that any sanctions be personally directed at the non-complying player. See Burritt, *supra* note 90, at 372; Volpi & Singer, *supra* note 4, at 148; Krarup, *supra* note 98, at 172; Kora Kristof & Stephan Ramesohl, *Voluntary Agreements—Key to a Higher Energy Efficiency in Industry?* in VOLUNTARY ENVIRONMENTAL AGREEMENTS—PROCESS, PRACTICE AND FUTURE USE 297, 308 (Patrick ten Brink ed., 2002); De Clercq & Suck, *supra* note 60, at 52; Barth & Dette, *supra* note 110; Interview with Farmer, *supra* note 107.

112. Ramesohl & Kristof, *supra* note 111, at 356; Communication on Environmental Agreements, *supra* note 9, at 12; De Clercq & Suck, *supra* note 60, at 51; Interview with ten Brink, *supra* note 85. See also Immerzeel, *supra* note 5.

113. OECD, *supra* note 14, at 115, 134; Communication on Environmental Agreements, *supra* note 9, at 14.

114. See Burritt, *Voluntary Agreements*, *supra* note 90, at 372; see also the effects of negative publicity on environmental performance of plants, *infra* note 124. Incentives, such as access to information unavailable to competitors, grading systems that reward more “environmentally friendly” plants, cash rewards, and technological assistance can also be applied.

115. See Barth & Dette, *supra* note 110, at 44; Communication on Environmental Agreements, *supra* note 9, at 23; European Environment Agency 1, *supra* note 93, at 19.

environmental agreements over other possible instruments.¹¹⁶

3. The Industrial Sector

The third category of predictors for evaluation is linked to the characteristics of the relevant industrial sector. A strong representative organization which can spearhead negotiations has proven to be an important precondition for the success of environmental agreements.¹¹⁷ The cohesion between the industries within the sector as well as their homogeneity may improve the chances for achieving a better, and more effective, voluntary agreement.¹¹⁸

4. Societal Characteristics—The General Public

The last predictor is based on salient societal characteristics. Strong public awareness and involvement in environmental issues contribute to successful environmental agreements both by ensuring more ambitious goals and by creating incentives for the industry to comply.¹¹⁹ The involvement of non-governmental organizations (NGOs) in the design and drafting of the agreement adds both transparency and better prospects for public support while ensuring that there is authentic representation of uncompromising environmental interests.¹²⁰

116. Communication on Environmental Agreements, *supra* note 9, at 23; European Environment Agency 1, *supra* note 93, at 19.

117. A strong representative organization is vital first and foremost for the feasibility of an environmental agreement. See De Clercq & Suck, *supra* note 60, at 19; Cabugueira, *supra* note 60, at 410; Immerzeel, *supra* note 5; Hanks, *supra* note 60, at 173; Communication on Environmental Agreements, *supra* note 9, at 10; Interview with Farmer, *supra* note 107; Interview with Hoppener, *supra* note 8; Interview with Van der Lans & De Buck, *supra* note 98; Interview with ten Brink, *supra* note 85.

Moreover, the more members in the organization feel they are poorly represented, the less likely they are to join the agreement thus increasing the number of free riders. Lack of free riders is one of the important factors for the effectiveness of a voluntary agreement. See De Clercq, *supra* note 53, at 362.

118. The more homogenous an industry is in terms of its production output and company size, the easier it is to achieve common objectives. It is also easier to monitor an agreement that contains unified goals. See De Clercq & Suck, *supra* note 60, at 19; Welch & Hibiki, *supra* note 5, at 537; Cabugueira, *supra* note 60, at 408; Hanks, *supra* note 60, at 173. See Helge Jorgens & Per-Olof Busch, *The Voluntary Pledge Regarding the Environmentally Sound Management of End of Life Vehicles*, in NEGOTIATING ENVIRONMENTAL AGREEMENTS IN EUROPE—CRITICAL FACTORS FOR SUCCESS, 87 (Marc De Clercq ed. 2002) [hereinafter Jorgens & Busch, *The Voluntary Pledge*]; Interview with Van der Lans & De Buck, *supra* note 98; Interview with ten Brink, *supra* note 85.

119. See Koehler, *supra* note 107 (discussing the failure of the Hungarian Packaging Agreement); Vicini & Wallace-Jones, *supra* note 5, at 165 (discussing the success of the Italian Agreement of Quality of Gasoline being attributed to public pressure). See Welch & Hibiki, *supra* note 5, at 535 (discussing the achievement of Japanese agreements in Kita Kyushu as a result of public pressure).

120. See Krarup & Ramesohl, *supra* note 111, at 308; Volpi & Singer, *supra* note 4,

Transparency with regards to both the content and the ultimate outcomes of a voluntary agreement contribute to public oversight and possible criticism, thus increasing the potential for public pressure upon industry.¹²¹ Trust and cooperation between the environmental authorities and the industrial sectors also tend to contribute to an effective environmental agreement.¹²² In addition to being integral to the creation of an effective environmental agreement, trust is often also an outcome of such an agreement. Thus, when suspicion had previously dominated the dynamics between the regulating and regulated committee, agreements offer the hope of a healthier future relationship.

B. Effectiveness Predictors for "Capacity Building" Voluntary Agreements

In countries with relatively weak environmental authorities, a different strategy needs to be considered and the predictors for success need to be altered accordingly. Although the threat of regulatory intervention might not always exist,¹²³ industry might stand to gain other meaningful benefits by utilizing voluntary agreements. Moreover, the business community may face significant pressures to comply with environmental demands from non-governmental quarters such as importers or pressures from the public or the media.¹²⁴ Thus, in such

at 146; Barth & Dette, *supra* note 110, at 43; Convery & Leveque, *supra* note 107, at 92; OECD, *supra* note 14, at 12, 115, 134. The European Commission recommends hearing all involved parties, including NGOs, and referring to their remarks during the negotiation process. Communication on Environmental Agreements, *supra* note 9, at 11.

121. See Barth & Dette, *supra* note 110, at 43; Convery & Leveque, *supra* note 107, at 92. The European Commission recommends reporting to the public information regarding the implementation of the agreement. See Communication on Environmental Agreements, *supra* note 9, at 13.

122. Immerzeel, *supra* note 5, at 276; De Clercq & Suck, *supra* note 60, at 17; Kristof & Ramesohl, *supra* note 1111, at 311; Interview with ten Brink, *supra* note 85; Interview with Frans Stuyt, Director, SCCM, in The Hague, Neth. (Sept. 12, 2002).

A tradition of cooperation is connected to social characteristics of the country. Thus in Europe, the Netherlands and Germany are known for their impressive cooperation. The USA, on the other hand is known for its litigation and strong command and control enforcement, which makes it more difficult to create voluntary agreements. See Delmas & Terlaak, *supra* note 59, at 60; De Clercq & Suck, *supra* note 60, at 18; Interview with ten Brink, *supra* note 85.

123. In some countries, the construction of an efficient deterrence system is impossible due to lack of resources such as budgets, manpower, and knowledge. See Hanks, *supra* note 60, at 172. See also Welch & Hibiki, *supra* note 5, at 531 (discussing the possibilities of concluding voluntary agreements in cases of low regulatory bargaining power).

124. For a discussion of the influence of community pressure on the environmental performance of industry, see generally Raymond S. Hartman et al., *Why Paper Mills Clean Up: Determinants of Pollution Abatement in Four Asian Countries*, (Policy Research Working Paper Series No. 1610, 1997), available at

circumstances a voluntary agreement might come to be perceived as a “lesser evil.” Voluntary agreements have the potential to serve as a capacity building tool for developing governmental environmental agencies.¹²⁵ While realizing that such a policy tool may not be optimal for immediately influencing present environmental performance, voluntary agreements have the potential to create an infrastructure that will be essential for improving the enforcement system in the future.¹²⁶

Contrary to predicting the success of complementary environmental agreements, an *ex ante* assessment of capacity building voluntary agreements relies heavily on the content of the agreement. All other

http://www.worldbank.org/nipr/work_paper/1710; Sheoli Pargal & David Wheeler, *Informal Regulation of Industrial Pollution in Developing Countries: Evidence from Indonesia*, (Policy Research Working Paper Series No. 1416, 1995), available at http://www.worldbank.org/nipr/work_paper/1416; Tom Tietenberg & David Wheeler, *Empowering the Community: Information Strategies for Pollution Control*, (Paper Presented for the Frontiers of Environmental Economics Conference, Virginia, Oct. 1998), available at http://www.worldbank.org/nipr/work_paper/ecoenv/confpap.pdf; Shakeb Afsah & Jeffrey R. Vincent, *Putting Pressure on Polluters: Indonesia's PROPER Program*, (A Case Study Presented for the Harvard Institute for International Development—1997 Asia Environmental Economics Policy Seminar, 1997), available at http://www.worldbank.org/nipr/work_paper/vincent/vincent.pdf; David Wheeler, *Information in Pollution Management: The New Model*, (Brazil Managing Pollution Problems, the Brown Environmental Agenda, World Bank Report No. 16513-BR, 1997), available at http://www.worldbank.org/nipr/work_paper/ninfo/ninfo2.pdf; Hemamala Hettige et al., *Determinants of Pollution Abatement in Developing Countries: Evidence from South and Southeast Asia*, 24(12) WORLD DEVELOPMENT 1891 (1996).

In the specific aspect of the affect of public pressure on voluntary agreements, the *Coffee-Processing Industry* agreement in Costa Rica, as well as the Columbian agreement with the sugar producers, were largely the result of public pressure. Both agreements resulted in significant environmental improvements. See Hanks, *supra* note 60, at 164, 166-67, 171. In addition, community pressure led to the conclusion of voluntary agreements with the industry, resulting in meaningful reductions in air pollution emissions. The agreements were signed in the absence of an effective national environmental enforcement and compliance system. See Welch & Hibiki, *supra* note 5.

In addition, the stock market reacts negatively to publicity concerning poor environmental performance of plants. This applies also to industries in developing and transitional countries and was empirically demonstrated in Argentina, Chile, Mexico and the Philippines. See Susmita Dasgupta et al., *Capital Markets Responses to Environmental Performance in Developing Countries*, (World Bank PRD Working Paper No. 1909, 1998), available at <http://www.worldbank.org/html/dec/Publications/Workpapers/WPS1900series/wps1909/wps1909.pdf>. For additional research concerning the connection between environmental information and the stock market see Paul Lanoie et al., *Can Capital Markets Create Incentives for Pollution Control?* (World Bank PRD Working Paper No. 1753, 1997), available at http://www.worldbank.org/nipr/work_paper/nipr2/#_Toc381371291; Benoit Laplante & Paul Lanoie, *The Market Response to Environmental Incidents in Canada: a Theoretical and Empirical Analysis*, 60(3) S. ECON. J. 657 (1994); Michael Moughalu et al., *Hazardous Waste Lawsuits, Stockholder Returns and Deterrence*, 31(2) S. ECON. J. 331 (1990).

125. Interview with Patrick ten Brink, Senior Fellow and Head of Office, Institute for European Environmental Policy, in Brussels, Belg. (Sept. 17, 2002).

126. See Tsutsumi, *supra* note 14; Welch & Hibiki, *supra* note 5, at 531.

predictors, their importance notwithstanding, can be significantly influenced by the content of the agreement. Therefore, the same categories of effectiveness predictors presented for complementary agreements are relevant when considering the content of an agreement.

1. Environmental Authorities

As previously mentioned, when the purpose of the voluntary agreement is to serve as a capacity building tool, a meaningful regulatory threat is usually absent. However, as its very definition suggests, powerful environmental governance is not required for an effective capacity building agreement. This is especially true when capacity building instruments serve as a temporary interim policy measure.

At the same time, in order for a voluntary agreement to effectively fulfill its function, the regulatory authority should be able to demonstrate learning capabilities. Fielding dedicated personnel who are willing to internalize, evaluate, and implement the information acquired is an important condition. Additionally, giving a higher priority to the environmental problem in the targeted voluntary agreement, as well as allocating budgetary resources accordingly, are two other important factors.

2. The General Public

Given the lack of a regulatory threat, public opinion, and involvement tends to take on an even more significant role in determining the effectiveness of a voluntary agreement as a capacity building tool. The public has the ability to motivate industry to take environmental action. Therefore, the same rule-of-thumb as that in complementary voluntary agreements applies: the more involved and aware the public is, the greater the likelihood of full cooperation on the part of industry in implementing voluntary agreements. The involvement of NGOs in the negotiation process or in information dissemination concerning the negotiations will continue to improve public awareness.

3. The Industrial Sector

The role of industry in this type of agreement is particularly important. Without the cooperation of industry, capacity building cannot be achieved. Therefore, industry needs to be provided with real incentives to cooperate and transfer knowledge to the environmental authorities. Industry also needs to demonstrate maturity. This, in theory, means accepting responsibility for environmental impacts. In addition, since information is a key element in capacity building,

interconnectedness or the potential for networking between plants within an industry, is important as well.

4. Content

For the purpose of capacity building, two key elements need to be properly crafted in a voluntary agreement. The first is a mechanism for transferring information from the industry to the environmental authorities. This should include information regarding:

- sources of pollution, their identity and location;
- emissions—volumes, concentrations, substances; and,
- technological solutions and their economic feasibility.

The second important element is the creation of proper implementation tools. The primary aim of such tools is to facilitate compliance with the agreement. Prominent components of implementation factors include the creation of public awareness mechanisms as well as limited enforcement programs. Because of the importance of public awareness in capacity building agreements, special effort should be invested in selecting the proper approach to information dissemination within the agreement. Open and accessible information, especially concerning the environmental performance of plants, is crucial for achieving this goal.¹²⁷

In light of this discussion, we find the level of public exposure to environmental information to be one of the most important indicators for determining the effectiveness of voluntary agreements in weak enforcement systems. Thus, *ex ante* evaluation needs to relate to information flowing to the public during the negotiations as well as to the procedures for disseminating information generated by the agreement. In addition, while performing an *ex post* evaluation, special notice should be given to actual public access to information about the agreement and its actual environmental outcomes. Usually, flaws in the monitoring and enforcement systems are the major reasons why environmental authorities choose capacity building environmental agreement in the first place. Therefore, one of the most valuable outcomes of the capacity building process should be establishing “voluntary” monitoring and enforcement systems. While the actual evaluation of such systems can only be done *ex post*, commitments in this area can also be embedded in the agreement itself. Specificity regarding the instructions for monitoring the performance under the agreement, as well as sanctions in the case of violations, is critical.

Additional advantages, which go beyond any quantifiable

127. Hanks, *supra* note 60, at 172.

environmental outcomes stated in a voluntary agreement, can also be achieved.¹²⁸ Such benefits are called “soft advantages” or “resource development.” These take the form of improving the communication and trust between the private and the public sectors,¹²⁹ as well as encouraging flexible and innovative solutions to current problems.¹³⁰ These supplementary benefits are extremely significant in countries where major gaps exist between industry and regulatory authorities in terms of resources and knowledge.¹³¹ In this respect, a key factor for an effective agreement should focus on methods for encouraging innovation and information transfer between industry and environmental authorities. Table 1 offers a summary of the different factors predictors should integrate in assessing the two types of agreements.

128. See Cabugueira, *supra* note 60, at 410; De Clercq & Suck, *supra* note 60, at 58.

129. Opening communication channels, as well as improving the mutual understanding, confidence, and respect, are merely examples for improving the relations. See De Clercq & Suck, *supra* note 60, at 58; Hanks, *supra* note 60, at 161. The German Agreement regarding environmentally sound management of end-of-life vehicles is a successful example for tightening the relations and increasing knowledge transfer between different relevant sectors. See Jorgens & Busch, *The Voluntary Pledge*, *supra* note 118, at 87.

130. For encouraging innovative solutions for environmental problems, voluntary agreements could directly affect innovation by initiating programs supporting research and development. See Cabugueira, *supra* note 60, at 406; De Clercq & Suck, *supra* note 60, at 57. See also Hanks, *supra* note 60, at 161; De Clercq & Aemeels, *supra* note 5, at 113-30; Immerzeel, *supra* note 5.

131. Hanks, *supra* note 60, at 161.

	Complementary	Capacity Building
Environmental Authorities	Regulatory Threat	Learning Capability
Public	Awareness & Involvement	Awareness & Involvement
Industry	-Strong Organization - Cohesion - Homogeneity	- Maturity - Interconnectedness
Content	- Flexibility - Ambitious targets - Monitoring - Sanctions	- Information transfer mechanism o Industry → agency o public - Monitoring - Sanctions

Table 1: Summary of the *Ex Ante* effectiveness predictors.

V. Managing Air Quality Through a Voluntary Emissions Covenant: The Israeli Experience

Despite its prominence in the international news, Israel remains a small country. Its dimensions are roughly comparable to those of New Jersey. To meet a six-fold population increase during the fifty years that followed its 1948 independence (from one to six million people), economic development has been swift and often very aggressive.¹³² With this development came environmental impacts. By the mid-1990s, Israel's air quality emerged as the country's preeminent public health problem.¹³³ A risk assessment prepared in 1995 suggested that fine particulates alone were responsible for some 1000 premature deaths each year.¹³⁴ In a more comprehensive study recently conducted by the Israel Ministry of the Environment in conjunction with the U.S. EPA and other local bodies, the annual mortality rate from fine particles was found to have escalated to over 1400 deaths per year.¹³⁵ Despite the alarming numbers, little has been done as a means of regulatory response.

132. Alon Tal, *An Imperiled Promised Land, The Antecedents Of Israel's Environmental Crises And Prospects For Change*, 13 J. OF DEVELOPING SOCIETIES 116, 116-34 (1997).

133. SHOSHANA GABAI, MINISTRY OF THE ENVIRONMENT, *THE ENVIRONMENT IN ISRAEL* (1994).

134. Gaby Zohar, *Technion Researcher Estimates: 1000 Dead Each Year in Israel from Air Pollution*, HAARETZ, Jan. 20, 1995.

135. ISRAELI MINISTRY OF THE ENVIRONMENT ET AL., *A COMPARATIVE ASSESSMENT OF AIR POLLUTION PUBLIC HEALTH RISKS IN TWO ISRAELI METROPOLITAN AREAS 1995-1999* (2003), available at http://www.sviva.gov.il/Environment/Static/Binaries/Articals/ISRAEL_for_cd_1.pdf.

Israel's primary air pollution control statute, *The Prevention of Nuisances Law*¹³⁶ which was enacted in 1961, has been only modestly amended since its inception. This bare bones law has been referred to by the Israeli Supreme Court as a "skeleton," on which the secondary legislature is expected to add the flesh and skin of regulations to complete the body of Israel's air pollution policies.¹³⁷ Section 5 of the law mandates the establishment of ambient quality standards, leaving the task of determining "reasonable air quality" to the Minister of Environment.¹³⁸ Such ambient standards were originally set in 1971, and then expanded and upgraded in the 1992 *Prevention of Nuisances Regulations (Air Quality)*. These rules were also promulgated in the wake of public interest litigation.¹³⁹

Neither Israel's Ministry of the Environment, nor the preceding government ministries responsible for air quality were able to produce comprehensive emission standards for stationary air sources. Centralized limitations on stack emissions were the subject of public interest litigation in the early 1970s.¹⁴⁰ The Supreme Court ruled in favor of the petitioners and spoke emphatically about the importance of setting such emission limits. Even with such a ruling, environmentalists were soon disappointed with the results. A standard for suspended particulate matter was set,¹⁴¹ but soon became outdated.

Although Israeli environmental regulations proliferated in the 1980s and '90s, basic regulations to limit pollution levels in stack emissions were conspicuously absent. In practice, officials at the Ministry of the Environment would stipulate specific emission levels in business

136. The Prevention of Nuisances Law, 1961, S.H. 332, 58.

137. HCJ 295/65 Hillel Oppenheimer v. Minister of the Interior [1966] IsrSC 20(1) 309.

138. Subsequent Supreme Court decisions suggest that the law is driven by "health-based considerations." See *State of Israel v. Moshe Meyuchas*, IsrSC 35(4) 741. The "statistical nature" of Israel's original ambient air quality standards, whereby it was permissible to violate the ambient standard by 100% for 1% of the time seemed inconsistent with a strictly "health protection" perspective.

139. *Prevention of Nuisances Regulations (Air Quality)*, 1992, KT 972. The new regulations were promulgated subsequent to public interest litigation. HCJ 1183/92 V'din v. Ministry of the Environment (unpublished, on file with author). The new regulations, based largely on WHO standards, contain ambient standards for twenty-one pollutants, with different permissible concentrations set for different time periods ranging from a half hour to twenty-four hour periods.

140. HCJ 372/71 Haifa Public Council for Protecting Environmental Quality v. Minister of Health [1972] IsrSC 26(1) 809-11. It was argued that without emission standards it was impossible to apply the country's new air pollution law to Haifa's perennial polluter, the Neshet Cement Factory.

141. *The Prevention of Nuisances Regulations (Emissions of Suspended Particulates into the Air)*, 1972, KT 1567, 361.

licenses,¹⁴² or for large sources, by issuing a “personal decree”—which was a plant based emission standard issued by the Minister of Environment pursuant to section 8 of the law.¹⁴³

The reason for the glaring absence of comprehensive air pollution emission standards in Israel was of course political. Since 1993, the Ministry of the Environment had openly lobbied to pass a set of regulations containing comprehensive emissions standards, perceiving them as critical to meeting its mission of controlling air pollution. Yet, a deadlock emerged between environmental officials and other government Ministries associated with economic growth and development.¹⁴⁴ One of the most notable of these overtly political motivations was visible with the Ministry of Infrastructure, in that it sought to protect the interest of the Government-owned Israeli Electric Company whose production processes would have to change as a result of such regulations. Also opposed to such standards was the Finance Ministry, whose efforts to support economic prosperity traditionally included demands to reduce pollution-control costs whenever possible.

In the protracted bureaucratic conflict that ensued, Israel’s Manufacturing Association, which represented most of the major industrial air polluters in the country, began to support some form of centralized regulation. The specific emission levels exacted in business licenses created a situation of legal uncertainty, as well as a lack of uniformity. The dynamics posed considerable difficulties for Israeli industry. Centralized regulation was perceived as capable of solving this problem.¹⁴⁵

And so the stage was set for Israel’s first real experiment with voluntary negotiated agreements. Ms. Nehama Ronen, then Director General of Israel’s Ministry of the Environment, was entrusted with most of the operational responsibilities for running the environmental ministry.¹⁴⁶ After encountering continued resistance from the rival ministries, Ronen reached the tactical conclusion that given the present political configuration and the Ministry of the Environment’s relative

142. The Businesses Licenses Law, 1968, SH 537, 204.

143. See Alon Tal, *Law of the Environment*, ISRAEL BUS. LAW, 241-353 (Kaplan ed., Kluwer 1995) (1994).

144. Telephone interview with Nehama Ronen, Past Director General & Minister of the Environment, Israeli Ministry of the Environment (July 9, 2004); Izhak Goren, Former Director General, Israeli Ministry of the Environment, Address to the Israeli Bar Association: “The Israeli Covenant Regarding Air Emission Standards—Legal and Constitutional Aspects” (Jan. 11, 2004).

145. Arie Neiger, Legal advisor of the Israeli Industry Association, Lecture in Seminar in the Israeli Bar Association: “The Israeli Covenant Regarding Air Emission Standards—Legal and Constitutional Aspects” (Jan. 11, 2004).

146. ALON TAL, POLLUTION IN A PROMISED LAND—AN ENVIRONMENTAL HISTORY OF ISRAEL, 317-19 (2002).

weak stature in the debate, promulgation of air quality emission standards was highly unlikely.¹⁴⁷ From her perspective, the status quo, where some 60% of inspected plants were not bound to any formal air quality standards, was unacceptable. A voluntary agreement promised to broaden the umbrella of manufacturers operating according to emission standards while circumventing the powerful opponents of increased environmental regulation.

Negotiations began between the Ministry of the Environment and the Manufacturers' Association in an effort to break the impasse by reaching a voluntary agreement regarding emission standards. It is important to note that the full cast of key stakeholders (environmental organizations, labor unions, etc.) were *not* invited to participate in the discussions.

The final draft of a covenant was reached and signed by the parties on January 21, 1998.¹⁴⁸ The *Covenant for the Application of Standards Regarding Air Pollutants to the Air between the Ministry of the Environment and the Manufacturers' Association* was the first negotiated voluntary environmental agreement between the Israeli government and an industrial sector. Although a subsequent covenant has been signed between the Ministry and the Construction Contractors Association on the subject of environmental friendly building,¹⁴⁹ the scope of the agreement is much less ambitious and does not purport to supplant a typical environmental regulatory standard. The covenant's stated objective is as follows: "To organize through this covenant the application of emission standards and cooperation between the parties in all matters concerning the reduction of air pollutant emissions and their impact on air quality in Israel."

According to the preamble to the covenant, the agreed emission limits for designated pollutants¹⁵⁰ were based on the EU directive regarding air emissions from Large Combustion Plants¹⁵¹ and the domestic German TA Luft Code—an encyclopedic set of industry

147. Interview with Ronen, *supra* note 144.

148. *Covenant for the Application of Standards Regarding Air Pollutants to the Air between the Ministry of the Environment and the Manufacturers Association*, reprinted in ALON TAL, *MAN AND HIS ENVIRONMENT, LEGAL ASPECTS AND BASIC CONCEPTS*, 125-29 (2001).

149. *Covenant for the Promotion of Environmental Construction between the Ministry of the Environment and the Contractors Association* (2004) (on file with author) [hereinafter *Covenant*].

150. Among the major pollution concentrations set forth in the list appearing in the *Covenant's* appendix are: NO_x; SO_x; volatile organic compounds; carcinogens; hazardous inorganic particulate compounds; inorganic gas compounds.

151. Council Directive 2001/80, 2001 O.J. (L 309) 1 (EC) (regarding the limitation on emissions of certain pollutants into the air from large combustion plants).

specific air emission standards.¹⁵² An application committee was established to resolve controversies in the performance of the covenant, as well as any amendments to the agreement. Final and interim targets were set.¹⁵³ In addition, factories that signed the agreement were also committed to monitoring and reporting requirements.¹⁵⁴

The covenant and its emission standards apply to the entire industrial community in Israel, rather than a particular manufacturing sector. At the same time, the covenant takes the form of a voluntary agreement: individual plants are not bound by its contents until they have signed the agreement. There is no direct penalty for choosing not to join the covenant. Once plants have signed the agreement however, there are clear quantitative obligations which are to be translated automatically into the emission standards in existing business licenses. Within one year, ninety-six factories and corporations signed the agreement. Although this only constituted 7% of Israel's manufacturing sector, the vast majority of the largest producers (and potential polluters) quickly signed the agreement.

VI. Does the Israeli Experience Support the Evaluation Theory and *Ex Ante* Predictors?

This section will assess the proposed evaluation theory upon the Israeli covenant. In the first stage, the effectiveness of *ex ante* factors as predictors of environmental agreements will be assessed. This will be done in two stages using the dichotomous division of environmental agreements. The complementary agreement evaluation factors will be used first, followed by an evaluation according to the "capacity building" evaluation factors. In the second phase, the predictions of the first stage will be tested. The covenant will be evaluated according to the *ex post* effectiveness predictors. This evaluation will be performed in two stages as well. The results of the two evaluation methods will then be compared and discussed.

152. TA Luft—Technische Anleitung zur Reinhaltung der Luft Vom (1986) [Technical Guidance for Clean Air].

153. See Covenant, *supra* note 149.

154. *Id.* at Appendix A § 7-9.

A. *Should the Covenant Have Been an Effective Voluntary Agreement According to Ex Ante Evaluation?*

1. Evaluation of the Covenant as a Complementary Voluntary Agreement

The application of the *ex ante* predictors to the Israeli Covenant leads to the conclusion that the Israeli Covenant should not be an effective and complementary voluntary agreement. The three most significant components of an effective voluntary agreement were not present at the inception of the Israeli covenant. First and foremost, a credible regulatory threat could not be established. As discussed above, the effectiveness of the threat depends on the available legal authority and the political support for government intervention. In the case of the Israeli Covenant, the Ministry of the Environment found itself in a relatively weak position politically, especially with regards to the enforcement of air pollution standards.¹⁵⁵ Prior to the signing of the covenant, no spot checks had ever been conducted. There was, therefore, an absence of reliable information regarding the magnitude of emission standard violations. In addition, 60% of the plants were not subject to any legally binding requirement regarding air pollution. Industries in Israel were well aware of the Ministry of the Environment's inability to promulgate a basic set of air quality regulations. Thus, the deterrence

155. See TAL, POLLUTION IN A PROMISED LAND, *supra* note 146, at 184, 283, 291. See also David Vogel, *Israeli Environmental Policy in Comparative Perspective*, in ISRAEL: THE DYNAMICS OF CHANGE AND CONTINUITY 246, 250-51 (David Levi-Faur, Gabriel Sheffer, & David Vogel, eds., 1999). The Ministry of the Environment in Israel was established due to a political compromise, not as a response to public demand or an understanding of the importance of environmental problems. Politicians are reluctant to serve as Environmental Ministers because of the position's low political status and limited enforcement powers. Therefore, important environmental authorities were left with other Ministries that were generally indifferent to environmental consideration. This situation, along with very low budgets made it difficult for the Ministry of the Environment to operate. (For a comparison between the budget of the Israeli Ministry of the Environment and Environmental Ministries in other countries, see <http://www.sviva.gov.il/abouttheMinistry/Budget>). Legal procedures also affect the Ministry's efficiency and power. (For instance, the average fine for environmental offenses in Israel in 2003 was approximately \$13,000.) In comparison, the average fines in the U.S. under the Bush Administration are \$600,000. See Dorit Kerret, *Complementary Approaches to Environmental Enforcement—an Israeli Perspective: ISO 14001 and Air Emission Standards Covenant* (Apr. 2004) (Ph.D. Dissertation submitted to Tel Aviv University 257). See also Reed McManus, *Every Which Way But Strict: the Bush Administration's Quiet Assault on Environmental Regulations*, SIERRA MAGAZINE, May-June 2003, available at http://www.findarticles.com/cf_dls/m1525/3_88/101569816/p1/article.jhtml.

With regards to air pollution, enforcement of the Ministry's position was specifically weak.

effect of the Ministry of the Environment was negligible.¹⁵⁶

Another critical factor for achieving an effective voluntary environmental agreement is its content. Two points are worth noting in this context. First, the Israeli Covenant does not adopt any of the European models for complementary voluntary agreements mentioned in Section III. Neither does it establish collective goals, nor offer any flexibility to plants in implementing its prescriptions. Moreover, the conditions of the covenant are indistinguishable from typical command and control air emission standards which could have been implemented via conventional regulations.

The second aspect of the content of the Israeli Covenant involves the ambitiousness of its goals. While the covenant is based on European standards, they are hardly identical.¹⁵⁷ The covenant is therefore criticized extensively by representatives of environmental organizations and air pollution experts at the Ministry of the Environment itself. One of the prominent differences is lack of sectoral-specific standards.¹⁵⁸ The covenant embraces only the general section of the German TA Luft, and fails to include the more stringent emission standards set for specific types of industries.¹⁵⁹ In addition, the covenant extended the timeframe for implementing the emission standards. While normally the regional district officials demand the immediate implementation of environmental standards, the covenant granted the plants twelve years to comply.¹⁶⁰

It is not surprising that Israeli industry tends to argue that the required emission standards are in fact much too stringent for the Israeli

156. Kerret, *supra* note 155, at 263.

157. *Id.* at 264. One of the claims is that in Germany, this is only the minimal standard, while different districts and other voluntary initiatives adopt more stringent standards. In contrast, in Israel, the covenant is supposed to establish the general environmental air emission standard. See IUED, CA 10060/03 IUED v. Minister of the Environment § 146 [hereinafter IUED]. Moreover, the Ministry of Environment is obligated to "convince the local authorities not to make the emission standards more stringent." See Covenant, *supra* note 150, § 7(c). According to some other claims, the Israeli Covenant is more lenient than the German TA Luft since it ignores some of the TA Luft's prescriptions. For detailed information concerning those claims see Kerret, *supra* note 155, at 264.

158. This view is shared by the air pollution personnel as well as by the head of the air pollution department. See Kerret, *supra* note 155, at 265.

159. IUED, § 151; Interview with Tzahi Assa, Air Pollution Coordinator, Tel-Aviv District, Tel-Aviv, Isr. (July 28, 2002); Interview with Karim Albador, Air Pollution Coordinator, South District, Beer Sheba, Isr. (Aug. 1, 2002); Interview with Dorit Zis, Air Pollution Coordinator, North District, Natzeret, Isr. (Aug. 27, 2002); Interview with Israel Openhaim, Air Pollution Coordinator, Haifa District, Haifa, Isr. (Aug. 6, 2002); Interview with Shuli Nezer, Head of Air Quality Division, Jerusalem, Isr. (Feb. 11, 2001).

160. Since the covenant was signed in 1998, the standards are to be reached by 2010. For comparison, the German standards were to be implemented by 1994 at the latest. See Kerret, *supra* note 155, at 266.

arena, given the gap between the German and the Israeli economies.¹⁶¹ Any evaluation of the ambitiousness of the targets, however, should consider the baseline situation as well. The covenant did impose “more stringent emission standards” upon 80% of the participating plants.¹⁶² This also means that a full one-fifth of factories who signed the covenant, actually received discounts of their pre-existing air emissions allowances. Furthermore, although the covenant allows for setting more stringent standards for specific plants, environmental authorities were still constrained in imposing *en rem* standards. In response, an Israeli court canceled the more stringent air emission standards set by a local authority.¹⁶³ While the emission ceilings set by the covenant may be lenient by international standards, it is the actual performance of Israeli factories that drive local perceptions.

The last factor predicting an ineffective complementary Israeli Covenant involves the low level of public involvement in environmental issues in Israel. Several commentators and surveys observe that environmental issues are presently not a top concern for the Israeli society. These studies compare the public’s environmental attitude in Israel to the attitude in developing countries (as opposed to developed countries).¹⁶⁴ The difference between the Israeli society and those of other Western countries is manifested in several arenas. First, Israelis’ willingness to pay for environmental quality appears to be lower than in other countries.¹⁶⁵ In addition, environmental issues wield little power at the national level.¹⁶⁶ Worse, public enforcement of environmental statutes is rare in Israel, with the exception of the work of the Israel

161. See Israeli Industry Association, response to CA 10060/03 IUED v. Minister of Environment.

162. See Kerret, *supra* note 155, at 168.

163. CA 451/98 Klil Industries LTD v. Kiriya Motzkin Mayor (unpublished, on file with author).

164. See Vogel, *supra* note 155, at 254; Levkowitz Alon, Is the ‘Tzabar’ Still Green? (1997) (M.A. Thesis Submitted to Tel Aviv University) (Hebrew); Moti Talias, *Political Struggles in Israel and their Political—Philosophical Characteristics*, 39 ST., GOV’T & INT’L REL. 171, 1994, at 191; Avner De-Shalit & Moti Talias, *Green or Blue and White? Environmental Controversies in Israel*, 3(2) ENVTL. POL. 237, 1994, at 285; Noga Morag-Levine, *The Politics of Imported Rights—Transplantation and Transformation in an Israeli Environmental Cause Lawyering Organization*, in CAUSE LAWYERING AND THE STATE IN A GLOBAL ERA 334 (Austin Sarat & Stuart Scheingold eds., 2001); TAL, POLLUTION IN A PROMISED LAND, *supra* note 146, *supra* note 146, at 410.

165. See Levkowitz, *supra* note 164, at 112. Israel was graded as the country with the lowest willingness to pay for the environment (only 11% of the Israeli public was willing to pay, according to 1993 ISSN survey results).

166. For instance, none of the elected parties in the 15th Knesset was a green party. In the 16th Knesset there were even less votes for the green party than there were in the 15th Knesset. No “green candidates” were elected as Knesset members in the other elected parties as well.

Union for Environmental Defense—a public interest law organization whose aim is to litigate environmental issues.¹⁶⁷ In the specific case of the air pollution covenant, neither environmental organizations nor representatives of the general public were included in the negotiations.

These three factors suggest that the industry in Israel did not have strong incentives to comply with stringent environmental standards set in a voluntary agreement. Moreover, the standards themselves were lenient in international terms. All these factors suggest a climate that was incompatible with an effective *complementary* voluntary agreement.

2. Evaluation of the Covenant as a Capacity Building Agreement

The attitude of the Ministry of the Environment, together with the content of the agreement itself, suggests that the Israeli Covenant had the potential to become a successful *capacity building* voluntary agreement. Regardless of the covenant, industrial air pollution became a high priority in the Ministry of the Environment at the same time when the covenant was signed. Professional air pollution coordinators were appointed at the Ministry's six districts. These positions did not previously exist. Some argue that the process of updating the business licenses to include emission schedules for all plants was triggered by changes in the priorities of the Ministry of the Environment and had nothing to do with the specific prescriptions of the covenant.¹⁶⁸

In addition, the covenant established clear tools for transferring information from the industry to the environmental authorities. Obligatory emission surveys were one of the most important provisions of the covenant that provided the Ministry of the Environment with essential data that were previously missing.¹⁶⁹ Knowledge of emission sources, as well as the types of emissions and concentrations, are essential for establishing both compliance plans and action plans in air quality management. Furthermore, the covenant establishes methods for information sharing. A joint committee was established for the purpose of implementing the covenant.¹⁷⁰ Both sides committed themselves to sharing relevant implementation information and facilitating information

167. Orit Marom-Albeck & Alon Tal, *Upgrading Citizen Suits as a Tool for Environmental Enforcement in Israel: A Comparative Evaluation*, 34(3) *ISR. L. REV.* 373, 374 (2000); Noga Morag-Levine, *Partners No More: Relational Transformation and the Turn to Litigation in Two Conservationist Organizations*, 37(2) *LAW & SOCIETY REV.* 457, 459 (2003).

168. Interview with Assa, *supra* note 159; *see also* Kerret, *supra* note 155, at 287.

169. Covenant for the Application of Standards Regarding Air Pollutants to the Air between the Ministry of the Environment and the Manufacturers' Association, Israel-Manufacturers' Association, Jan. 21, 1998 [hereinafter *Covenant between the Ministry of the Environment and the Manufacturers' Association*].

170. *Id.* at § 4(a).

transfer in monitoring, implementation, and surveillance.¹⁷¹

The Israeli Covenant did not however, establish a new monitoring and enforcement system. Rather, it further developed the existing licensing system. The instructions of the covenant are automatically integrated into the plant specific permit conditions.¹⁷² One of the major flaws of the previous permit system was the lack of consistency between the demands of officials in different districts, as well as major gaps in oversight.¹⁷³ As mentioned, prior to the covenant, 60% of the participating plants had no conditions in their permits regarding air pollution. One of the goals of the covenant was to update the conditions in plant licenses. The covenant stipulated that, following the signature by a plant, the covenant's conditions would be integrated into its business license.¹⁷⁴

Although the covenant does not create a new enforcement system, it does enhance an already existing, malfunctioning system. In addition, the plants are required to monitor their emissions every six to twenty-four months, depending on the nature of the production and emissions.¹⁷⁵ Prior to the covenant, about 60% of the plants had no monitoring requirements at all.¹⁷⁶

In contrast to the previous factors, the nature of the industrial sector did not provide a conclusive basis for prediction. On the one hand, the covenant was signed with a strong industrial organization called the *Israeli Industry Association*, which represented major Israeli industrial polluters. However, because the entire Israeli industry is subject to this agreement, interconnectedness as well as homogeneity is quite low. In addition, the motivation of industry to cooperate is not cultivated because it gains few additional advantages should it choose to reduce emissions further.

From the prescriptions of the covenant itself, it would seem that the public information predictor offers little basis for optimism, even in the context of a capacity building agreement. In addition to the lack of public awareness previously discussed, the covenant does not establish a

171. *Id.* at § 8(g).

172. Covenant between the Ministry of the Environment and the Manufacturers' Association, *supra* note 169, §§ 7(a), 10(c).

173. Interview with Samet, Air Pollution Coordinator, Center District in Tel-Aviv (July 13, 2002); Interview with Zis, *supra* note 159; Interview with Mickey Haran, the Deputy Director General for Industries, Ministry of the Environment in Jerusalem, Isr. (Feb. 8, 2001); Interview with Nezer, *supra* note 159.

174. Covenant between the Ministry of the Environment and the Manufacturers' Association, *supra* note 169, §§ 7(a), 10(c).

175. Covenant, *supra* note 149, Annex A § 8.

176. See Kerret, *supra* note 155, at 169. However, it is worth noting that in 14.1% of the plants the monitoring requirements of the covenant are more lenient than previous permit requirements.

clear method for open reporting or public participation. As the next section will discuss however, transparency does exist in practice.

In sum, the suggested *ex ante* predictors suggest that the Israeli Covenant has the potential to become an effective *capacity building* voluntary agreement.

B. Does Practice Support Theory? Ex Post Evaluation of the Covenant

Five years after the covenant's inception, a study was conducted to evaluate its effectiveness as a tool for reducing air pollution emissions.¹⁷⁷ The analysis was based on both indirect evaluation and direct evaluation methods. Not only were all 120 of the factories who signed the covenant approached,¹⁷⁸ but the six regional offices of the Ministry of the Environment were asked to assess the actual performance of the responding factories falling within their district. Ultimately, 105 factories agreed to participate in the study,¹⁷⁹ producing a 90% response rate. Industry's alacrity may have been a result of the effort invested in eliciting responses. The research included a visit to the plant, and a face-to-face interview with the individual responsible for environmental protection in the factory. Respondents were "cross-examined" when inconsistencies appeared in their answers.

A control group of factories that had not signed the covenant was also identified. These plants were interviewed via telephone. The perspectives and figures provided by representatives of plants that chose not to be a part of the voluntary agreement offer an objective basis for comparison. The plants were selected so that they matched the cohort of factories who had signed the covenant and who had participated in the study. Ultimately, a full 175 rows of data were collected and analyzed using SPSS statistical packages.¹⁸⁰

The survey revealed that with the exception of a vague interest in improving corporate image, the predominant reason given for respondents for their companies' signing the covenant had little to do

177. *Id.* at 250-54.

178. As of November 2001, 144 plants have signed the covenant according to the lists of both the Ministry of the Environment and the Manufacturers Association of Israel. Twenty-four of those plants were not relevant for the research because either the plant did not exist at the time of the research, or the plant did not have air emissions of any of the pollutants covered by the covenant.

179. Only eighty-five questionnaires were filled out since some of the listed factories belonged to the same company. Only one questionnaire was filled out when the environmental aspects of these factories were jointly managed.

180. This data includes information regarding ISO 14001 certified plants as well. Several comparisons were made between ISO certified plants and plants that signed the covenant. Separate analysis was also performed regarding the ISO 14001 plants.

with business considerations.¹⁸¹ Over 50% of the plants that had signed the covenant were absolutely certain that no legislated standards would ever be passed if the covenant did not emerge as an alternative to conventional regulation.¹⁸² Among the most frequently cited reasons for signing the agreement was the desire to establish a set of fair, uniform national emission standards.¹⁸³ Others spoke of the more lenient emission levels achieved via negotiations with the government as well as an enhanced ability to engage in long-term planning once a covenant with long-term emission ceilings was drafted and signed.¹⁸⁴ A few plants simply explained that pollution reduction was a corporate policy.¹⁸⁵ This might explain the “peer pressure” phenomenon exerted by some factories on their peers to join the covenant process.

Ministry of the Environment officials are somewhat more cynical about what the true motives were among the participating industries.¹⁸⁶ Specific industries were mentioned as exploiting the voluntary framework to achieve a softened list of regulatory demands.¹⁸⁷ Some of the factories with whom the Ministry had long conflicted with over emission levels were quick to sign. The factories then used their participation in the covenant as an argument for estopping Ministry enforcement efforts and for achieving delays in implementation schemes.¹⁸⁸

When plant representatives were asked to contrast the benefits and liabilities of formal regulatory standards versus standards grounded in voluntary agreements, two somewhat conflicting points emerged. First, an extremely large number of representatives were candid in expressing doubts about the efficacy of any voluntary arrangements among the less than law-abiding Israeli industrial community, particularly without a systematic and efficient command and control enforcement infrastructure in place.¹⁸⁹ Second, respondents often mentioned the significance of a conciliatory approach that enlisted the active commitment of factories in meeting environmental demands.¹⁹⁰

181. See Kerret, *supra* note 155, at 160-65.

182. *Id.* at 176.

183. *See id.* at 162.

184. *See id.* at 162-63.

185. *See id.* at 164.

186. *See id.* at 253.

187. *See id.*

188. *Id.*

189. *Id.* at 166.

190. *Id.* at 167.

1. Evaluation of the Covenant as an Air Emission Reduction Tool

An evaluation of Israel's air emissions covenant needs to take into consideration the two-pronged objectives of any voluntary agreement. Air pollution reduction is of course the obvious one. But as a voluntary arrangement, the covenant was also supposed to have the potential to generally improve environmental performance.

One of the indications of an effective policy tool is the setting of ambitious targets (above the business-as-usual level). Hence, a comparison was made between the prescriptions of the Israeli Covenant and both the prior legislative demands and the actual prior emissions of the plants. A surprising 60% of the factories participating in the survey acknowledged that prior to the covenant they were not bound by any formal air emissions standards.¹⁹¹ In this context, the covenant successfully jump-started a very large group of factories into an air quality control mode. Of those who had air quality stipulations in their business licenses, 51.6% of the respondents considered the demands of the covenant to be more stringent than the emission standards affecting the factories preceding the agreement.¹⁹² According to the Ministry of the Environment's record, 22.6% of plants included in the survey enjoyed a relaxation of standards after adoption of the covenants' list relative to the emission standards they had already adopted following the adoption of the new list.¹⁹³

The veracity of these figures was confirmed by Ministry Environmental officials who, after reviewing their files about participating industries, reported that 51.9% of respondents were not meeting the emissions limits of the covenant prior to its inception.¹⁹⁴ Moreover, 58.4% had sampling requirements that were more lax than those required under the covenant.¹⁹⁵ Regression analysis with survey results revealed that plants that had environmental management systems in place (e.g., ISO 14001), or large heavy industrial facilities that were potentially major air polluters, were less affected by the demands of the covenant than were other respondents.¹⁹⁶ For them, the necessary air emission controls were already in place.

Of course the ultimate question of interest is the actual environmental performance achieved by factories as a result of the covenant. This was assessed via numerous methods. The most basic

191. *See id.* at 168.

192. *Id.*

193. *Id.*

194. *Id.*

195. *Id.* at 169.

196. *Id.*

was a direct question to participants in the survey: “Have emissions in practice dropped since your signature on the covenant?” Answers were to be given on a sliding scale of one to five, with one denoting “absolutely have not” and five reflecting “absolutely have” dropped. About half of the factories reported reductions. While the largest single cohort of respondents (35%) answered that emissions had absolutely *not* changed subsequent to the covenant, 45% reported meaningful or extensive reductions.¹⁹⁷

Reports of emissions reductions among 50% of the factories that signed the covenant are ultimately less important than identifying the causal factors at work. In other words, it is crucial to determine whether it was the covenant that precipitated the change or whether such reductions would have occurred as a matter of course. Here results were much clearer. Of respondents, 40.4% characterized the covenant as having *no* effect on their emissions, while only 11.5% cited it as the only reason for improved emissions levels.¹⁹⁸ This was supported by the lack of significant difference with the control group of nonparticipating factories.

The actual emissions coming out of responding factory smoke stacks are probably less encouraging than the survey results would indicate. The covenant’s reliability as an air pollution reduction tool came under question from spot checks by the Ministry of Environment. Israel’s newspapers picked up a Ministry of Environment press release that reported violations in some 50%-60% of factories that were inspected by the Ministry between 2001-2003.¹⁹⁹ Several of the plants showed emissions as much as 100 or 1000 times above permissible gas concentrations. Even less encouraging is the percentage of violations among covenant-only plants. As many as 80% of the covenant plants inspected in the 2002 spot checks were found to be violating air emission standards.²⁰⁰

197. *Id.* at 175.

198. *Id.*

199. *See Some 60% of Inspected Plants in 2003 Exceed Emission Standards for Air Pollutants*, MINISTRY OF THE ENVIRONMENT SPOKESMAN, July 6, 2003, available at <http://www.sviva.gov.il/Spokesman Messages> (in Hebrew); *50% of the Inspected Plants Exceed the Emission Standards for Air Pollutants*, MINISTRY OF THE ENVIRONMENT SPOKESMAN, Oct. 23, 2003, available at <http://www.sviva.gov.il/Spokesman Messages> (in Hebrew); *Over 50% of Inspected Plants Exceed Emission Standards for Air Pollutants*, MINISTRY OF THE ENVIRONMENT SPOKESMAN, Apr. 21, 2002, available at <http://www.sviva.gov.il/Spokesman Messages> (in Hebrew).

200. ISRAEL MINISTRY OF THE ENVIRONMENT, SPOT INSPECTIONS IN FACTORY SMOKE STACKS REPORT 2002 (2002), available at <http://www.sviva.gov.il>.

This data is meaningful although it might be statistically biased. The regional districts of the Ministry of the Environment naturally selected the most prone violation factories. However, even if those factories had been the only violators, they still would

The covenant's impact on air quality may be ascertained through queries beyond the reported reduction in stack emissions. For example, several factories described an increase in investment in air pollution control equipment following signature on the covenant. Indeed, of the eighty-five plants that signed the covenant, seventy-two reported acquisition of some type of pollution control equipment during the past three years. However, only 43.9% of them invested in *air pollution* equipment per se.²⁰¹ From a statistical perspective, the control group of plants (who did not sign the covenant) were no less likely to invest in air emissions controls than those plants that did. Furthermore, while roughly half of the plants reported modifications in production processes and product composition to meet environmental objectives, only 37.5% of these did so to attain air quality objectives.²⁰²

Anecdotal influence of the covenant also emerged in some site visits and interviews. One factory reported shifting to low sulphur fuels as a result of the covenant and two admitted that only after they signed the covenant did they begin any monitoring and analysis of stack contents.²⁰³ Yet, these isolated cases would seem to be the exception that proves the rule. As a force for changing industry practices in controlling air emissions, the covenant was generally not considered to be an important factor.

A regression analysis was undertaken to ascertain the factors that could be statistically associated with reduction of air emissions. Among the independent variables assessed were: the polluting potential of the plant; the size of the plant (in terms of sales); belief in the likelihood of regulations in the absence of a covenant; the severity of covenant conditions relative to existing business license demands; ISO 14001 certification, location, and the type of product produced. None of these factors exhibited any statistically significant correlation with reported reductions in air emissions.²⁰⁴

The covenant ultimately appears to be largely irrelevant in the decision-making process. For example, of the relatively few plants that invested in air pollution control equipment, 80.6% plants ascribed their investment to the legal demands of the Ministry of the Environment and local regulators. Only 22.2% cited their commitments under the

have consisted of a 20% violation ratio. In addition, combining all three reports of the names of violating factories demonstrated that 26 out of the 85 research populations violated the law, resulting in a 30% violation ratio.

201. Kerret, *supra* note 155, at 178.

202. *Id.*

203. *Id.* at 176.

204. *Id.* at 177.

covenant.²⁰⁵ Response rates about motivation for environmental investment among covenant signatories, were essentially identical to the control group that had not signed the voluntary agreement.

The second area in which a voluntary agreement has the potential to influence environmental quality goes beyond the specific emissions targets and looks at a broader realm of environmental factors. In the general arena of factories' environmental culture, the covenant's impact appears to be even less pronounced. The plants were asked about the influence of the covenant concerning several activities associated with environmental performance.²⁰⁶ Only a small percentage of plants indicated any effect due to their participation in the covenant. Only 9.4% of the plants reported any change in the consideration given to pollution prevention in corporate business plans as a result of signing the covenant.²⁰⁷ A parallel survey among Israeli factories with ISO 14001 certification showed that following their certification, 58% of these plants took pollution prevention into consideration while planning their products. By way of contrast, only 36% of signatories to the covenant reported such considerations and only 3% of these attributed the change to the covenant itself. "Employee awareness" offers a similar picture. Only 4.7% of respondents reported a change in the plants' employee awareness program as a result of the covenant, opposed to 83.3% among ISO certified plants.²⁰⁸

Subsequent to the signing, the Ministry of the Environment was less than conscientious about actually translating the relevant emissions levels and integrating them into business licenses. Five years after the signing of the covenant, 30% of the plants are operating according to business licenses in which the emissions levels set forward in the agreement do not even appear.²⁰⁹

2. Evaluation of the Covenant as Capacity Building Tool

The covenant can be credited with some important achievements. The most important of these is the strengthening or "capacity building" of Israel's Ministry of the Environment. Unknown emission sources

205. *Id.* at 212.

206. The plants were asked about the effect of the covenant concerning environmental considerations in business plans; environmental considerations in product design; the existence of a pollution prevention plan; environmental information plans to employees; environmental commitment; recycling; reuse; detection of environmental failures; amending environmental failures; compliance; pollution prevention methods; and, public relations.

207. Kerret, *supra* note 155, at 185.

208. *Id.* at 195.

209. *Id.* at 178.

were uncovered and for the first time, the Ministry had access to emissions inventories and a comprehensive database could be established.²¹⁰ The covenant served to unify the variegated emission standards assigned by the different districts of the Ministry of the Environment, making vastly different demands upon industry.²¹¹ Business licensing at the Ministry was upgraded and expedited.²¹² Yet, the question remains: “Could the Ministry of the Environment have enjoyed the same benefits (or more powerful ones) through a conventional command and control initiative?”

VII. Summary and Application of the Israeli Experience

The Israeli experience with an ambitious environmental covenant, although not impressive in absolute terms, both supports the theory presented in chapters III & IV and offers some other valuable lessons. The Israeli Covenant was not created in a complete regulatory void. However, comprehensive air pollution emission standards were missing. At that time, the Israeli Ministry of the Environment found itself in a relatively weak position politically, especially regarding enforcement of air pollution standards.²¹³ The Ministry therefore regarded the covenant as a transition stage until official emission standards regulations were promulgated.²¹⁴

Considering the unceremonious circumstances that produced the covenant, it should only have served in a “transition capacity.” Yet, binding air emission regulations are still conspicuously absent from the Israeli regulatory scene, and appear to be so for the foreseeable future. Moreover, recently an advocacy group, the Israel Union for Environmental Defense, appealed to the Israeli Court of Justice to request an *in nisi* order that would explain why regulations have not yet been promulgated.²¹⁵ At the time of this writing, the Israeli State Attorney’s Office had not responded, but early indications suggest that the current public posture of the Ministry of the Environment considers the covenant as a satisfactory arrangement for setting emission

210. *Id.* at 284.

211. *Id.* at 285.

212. *Id.* at 284.

213. *See id.* and accompanying text.

214. Section 1 of the covenant declares: “It is the intention of the Ministry of the Environment to promulgate statutory air emission standards regulation.” In addition, the official web-site of the Ministry of the Environment explains the status of industrial smokestacks air emission standards. It is explained that today there are no regulations in this area but the emission standards are listed in the appendix of the covenant. Those emission standards are to become regulations in the future. <http://www.sviva.gov.il/environmentaltopics/airquality/industrialairpollution> (in Hebrew).

215. IUED, *supra* note 157.

standards.²¹⁶

The major achievement of the covenant has been its contribution to capacity building within the Ministry of the Environment. In this context however, two questions still remain. The first was raised in the previous section: "Could the same benefits have been achieved by the Ministry of the Environment through conventional command and control initiatives?" The answer appears to be answered in the affirmative. Apart from uncovering unknown emission sources which had a minimal overall effect on actual air pollution emissions,²¹⁷ all other capacity building functions could have been achieved differently.

It would seem that the voluntary characteristics of the covenant were not leveraged effectively, and consequently, the unique potential progress that voluntary agreements offer was not attained. For instance, while emission inventories were established due to a specific prescription in the covenant, web-accessibility to these critical databases is not part of the package. The limited requirements which were stipulated in the agreement could certainly have been prescribed via regulation. Similarly, regulations could have achieved geographically consistent license conditions as well as upgraded environmental standards. Hence, any improvements gained did so without utilizing the "voluntary potential" of the covenant.

Technically, the covenant is considered a voluntary agreement due to the lack of a legal obligation to sign it. Many of the key players however, perceive its voluntary characterization to be a misnomer. For instance, the legal advisor of the Israeli Industry Association defines the covenant as a "regulations substitute."²¹⁸ He claims that the voluntary aspects of this covenant are a myth.²¹⁹ The Ministry of the Environment tends to concur,²²⁰ and this view tends to be shared by many plants that signed the covenant.²²¹ Although some industry representatives attach value to the act of actively signing an air quality covenant and the greater environmental commitment that it purportedly represents, reality presents a different picture. As mentioned, the covenant failed to significantly

216. See Protocol No. 7801 of the Sub-committee (of the Internal Affairs & Environment Committee) for Environmental Threats (Jan. 27, 2004), available at <http://www.knesset.gov.il/protocols/data/rtf/pnim/2004-01-27.rtf>; see also Zvi Lavi, *The Ministry of the Environment is Required to Promulgate Air Pollution Regulations*, GLOBES (Jan. 28, 2004).

217. A few plants that produced air emissions and voluntarily signed the covenant were previously unknown to the Ministry of the Environment. This was caused by some faults in the Israeli environmental licensing system. However, there were only a few plants with minimal air implications.

218. Telephone interview with Arie Neiger, Legal Advisor of the Israeli Industry Association (Feb. 12, 2004).

219. Neiger Lecture, *supra* note 145.

220. Interview with Nezer, *supra* note 159; Interview with Haran, *supra* note 173.

affect the environmental behavior, environmental investment, or environmental culture of the affiliated plants.

It seems that the covenant failed to conform to either of the two models of environmental voluntary agreements presented in section IV. On the one hand, the covenant gave little or no motivation for improving environmental performance beyond existing legal obligations, which is the primary characteristic of complementary voluntary agreements. The covenant offered the plants no real advantages relative to existing regulatory alternatives. The most significant benefits to participants were the uniformity in aggregate environmental conditions and a greater amount of stability for long-term planning. These advantages, however, could have been achieved through binding regulations.

Flexibility is supposed to be one of the most significant advantages of voluntary agreements. Yet, it was notably absent from the accord. If a covenant is to achieve environmental improvements, it needs to give industry meaningful incentives to seek them. At the same time, surely such advantages cannot take the form of more lenient environmental standards. In this respect, the experience with the Israeli Covenant highlights the importance of crafting environmental agreements that fully exploit their unique voluntary qualities. Arguably, such an agreement could have produced better results notwithstanding the political climate surrounding the Israeli agreement's negotiation.

The covenant in Israel was created in a situation of a weak environmental enforcement agency and was to serve as a transitional function. This leads to the second question regarding the Israeli covenant: "Assuming the covenant was to fulfill only a transition function and initially offer a basis for capacity building, when would have been the appropriate time to move forward to the next level and promulgate binding regulation?" Five years after the voluntary agreement was signed, it appears that officials at the Ministry of the Environment have lost sight of their primary goal. At present, they seem content to settle with the covenant and not wage a fight for binding and tougher regulations anew.

The trouble is that after the initial five years, the capacity building function of the covenant was generally achieved. Therefore, one of the key lessons to be gleaned from the Israeli experience involves the importance of written justifications for selecting a certain policy tool. Setting the conditions that would trigger the next regulatory phase (rather than a "best-guess" timetable) is recommended to ensure optimal effectiveness of public policies.

The Israeli Covenant could have served another function as well. The primary reason for not promulgating regulations in the first place was the opposition of other governmental ministries with economic

mandates. The covenant could have been used for countering this resistance. The primary rationale behind critics' objections was indeed economic. Industry advocates claimed that proposed air emission standards were not feasible for Israeli industry. Upon implementation of the covenant, such claims can be refuted on the basis of empirical experience. If Israeli industry implemented these standards in practice, there would no longer be any reason left for these Ministries to continue to oppose emission standards. Opposition to stringent environmental standards from within government circles is surely not unique to Israel. Therefore, voluntary agreements need to be used to refute feasibility or similar claims in other countries as well.

VIII. Conclusions

With American leadership in the environmental field lagging, the world will increasingly look to European policies for innovation and inspiration. Broad, industry-wide covenants have emerged as a key element in policy across Europe and it is likely that many countries, perhaps even the United States, will seek to emulate them.

This article argues that the diversity of political and economic situations around the world will require different evaluation standards for evaluating such voluntary agreements or environmental covenants. While not all agreements will succeed as effective complementary voluntary agreements upgrading industry performance, they can still be effective in fulfilling other functions. Because of this, different predictors should be used for gauging the likely effectiveness of voluntary agreements based upon the objective conditions existing prior to implementation. The case of the Israeli Covenant sheds light on the importance of this dichotomy. While the covenant cannot be regarded as an effective *complementary* voluntary agreement, it definitely had the potential to be an effective *capacity building* agreement. Criticism about the covenant's failure to fulfill its transition function in no way diminishes its achievements in building the capacity of the Ministry of the Environment.

The Israeli case supports the use of effectiveness predictors. *Ex ante* forecasts of agreement performance proved highly compatible with the results of the *ex post* evaluation. The *ex ante* prediction suggested that the Israeli Covenant would probably fail to serve as an effective complimentary agreement, but had the potential to be an effective capacity building agreement. The *ex post* evaluations confirms this to be an accurate characterization of the agreement's impact on industry.

Given the vast range of economic and political conditions across the globe (and even across single countries), the family of nations will

require different kinds of voluntary agreements to protect the environment. It is important therefore, to clearly define the function that a voluntary agreement is intended to serve prior to adopting it as a policy instrument. A thorough *ex ante* assessment should be performed to help to predict the likely effectiveness of the voluntary agreement under the given circumstances. At the same time, evaluation criteria largely developed by European scholars exists to assess whether these agreements are working. The European criteria, however, were designed for complementary agreements and may therefore judge capacity building agreements unfavorably, even as they succeed impressively in filling this more narrow function.

Given the Bush Administration's general inclination for regulatory relief and pro-industry sentiments, it is unlikely that the coming years will see new federal command and control initiatives in the U.S. Voluntary environmental agreements will probably continue to grow as a popular direction for domestic public policy. Yet, as mentioned previously, the American experience with voluntary agreements is based more on specific accords between government and individual firms than on the European tradition of contracting broad *en rem* norms. In addition, given the suspicion of the environmental movement, there will undoubtedly be strong concerns about the actual impact of these agreements with "green wash" invective justifiably or unjustifiably invoked.

If U.S. agencies are to continue the present trend of initiating binding "voluntary" agreements with industry as part of the country's environmental policy, they should do so with greater awareness of the prevailing political and economic conditions, along with the likely potential and limitations of a given program. The capacity building function of voluntary agreements should be sought when introducing new strategies or where local conditions diminish the regulatory powers of environmental authorities. If there is a retreat in the political support for environmental controls or budget cuts continue among environmental agencies, voluntary agreements may indeed constitute the most efficacious way to address new environmental challenges. However, this policy approach should be embraced without illusions about the programs' realistic objectives and with clear, quantifiable criteria for how they will ultimately be evaluated.