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THE INTERNATIONAL ORGANIZATION FOR STANDARDIZATION: PRIVATE VOLUNTARY STANDARDS AS SWORDS AND SHIELDS

DAVID A. WIRTH*

Abstract: Private voluntary standards such as the International Organization for Standardization's (ISO's) 14000 series have played an increasingly important role in encouraging corporations to adopt more sustainable business models on their own initiative and not in direct response to governmentally mandated requirements. ISO standards have a number of benefits, including promoting international uniformity; elevating environmental issues within an enterprise; promoting international trade; and providing a minimal level of environmental performance in countries with less than adequate regulatory infrastructure. Concerns about ISO standards include the relationship to public regulation; and ISO 14001's essentially procedural, as opposed to performance-based, character. International trade agreements such as NAFTA and the WTO Agreement on Technical Barriers to Trade inject ISO standards into the public policy arena. Because of the structure of these agreements, ISO standards may operate either as a sword—a negative standard used to challenge a domestic regulatory action—or a shield—an internationally agreed reference point that bolsters the legitimacy of a national measure. This Essay examines the potential for ISO standards on eco-labeling to act as swords to attack domestic requirements, and those on life cycle analysis to serve as shields to insulate municipal actions from international challenge in areas such as climate protection.

^{* © 2008} David A. Wirth. Professor of Law and Director of International Studies, Boston College Law School. This Essay is based on a paper presented at the symposium, "The Greening of the Corporation" at Boston College Law School on October 25, 2007. From 1997 to 2001 the author was a member of the American National Standards Institute-Registrar Accreditation Board (ANSI-RAB) Management Committee for the Environmental Management System (EMS) component of the National Accreditation Program (NAP, now the ANSI-ASQ National Accreditation Board). This project was supported by a generous grant from the Boston College Law School Fund and draws on some of the author's previously published work. The author gratefully acknowledges Ira R. Feldman's helpful comments on an earlier draft. The responsibility for all views expressed in this Essay, however, is the author's own.

Introduction

Corporations may choose to "go green" for any number of reasons, and in any number of ways. Customers or consumers through the marketplace may signal a demand for environmentally friendly goods or services. Alternatively, businesses may consciously choose to cultivate an environmentally responsible image. Concern among the public in the neighborhood of a manufacturing plant may create pressure for greener policies. Firms may retool manufacturing processes in response to demands from workers exposed to hazardous materials. Investments in energy efficiency or reductions in the use of toxic substances may result in significant cost savings, benefiting the firm's bottom line. Government regulation, the possibility of enforcement, or potential tort liability may also act as incentive-creating mechanisms. Other drivers include the cultivation of environmentally responsible consumer markets and price premiums for environmentally friendly products.

Considerations such as these among a wide variety of firms and industries have led to coordinated approaches to addressing environmental concerns in the form of private voluntary standards. This Essay discusses one example of these efforts—environmental undertakings in the International Organization for Standardization (ISO). After describing the structure and operation of ISO, the Essay evaluates both the benefits and limitations of ISO standards in the field of the environment. The utility of, and concerns about, ISO standards are particularly pronounced in international trade agreements such as the World Trade Organization (WTO) suite of agreements. Because of the structure of these agreements, ISO standards may operate either as a sword—a negative standard used to challenge a domestic regulatory action—or a shield—an internationally agreed reference point that bolsters the legitimacy of a national measure. The Essay examines the potential for ISO standards on eco-labeling to act as swords to attack domestic requirements, and those on life cycle analysis to serve as shields to insulate municipal actions from international challenge in areas such as climate protection.

I. ISO'S ENVIRONMENTAL STANDARDS

The International Organization for Standardization (ISO), created immediately after World War II with headquarters in Geneva, is an international federation of standardizing bodies from 157 countries. ISO

¹ See About ISO, http://www.iso.org/iso/about.htm (last visited Jan. 29, 2009).

is not an intergovernmental organization, such as the United Nations, constituted by multilateral agreement whose members are states represented by governmental authorities.² Although the ISO member from some countries is a governmental entity such as a national standardizing body, ISO is primarily a forum for coordinating standardizing efforts by private business.³ The U.S. member of ISO is the American National Standards Institute (ANSI), a private entity.⁴ For the United States, the primary, although not sole, participants in ISO processes are representatives of private industry.⁵

ISO's principal work product consists of voluntary standards adopted by consensus.⁶ In contrast to some of the output of intergovernmental organizations, ISO standards are strictly hortatory and are not binding under international law.⁷ At least so far as the United States is concerned, ISO standards are both adopted by and addressed to private parties. Although ISO standards are voluntary, they often have considerable influence. Probably the best-known ISO standards are those adopted for film speeds. As a result of harmonization through ISO, film with standardized speeds of 100, 200, or 400, is compatible with virtually all cameras of whatever brand are available throughout the world.

In the mid-1990s, ISO's Technical Committee (TC) 207 on environmental management began to issue its 14000 series of environmental management standards, a process which is still ongoing.⁸ The center-

² The principal treatment of the ISO's environmental activities in a treatise is Ira R. Feldman & Douglas Weinfield, *Environmental Management Systems*, in 1 Environmental Law Practice Guide: State and Federal Law § 6A (Michael Gerrard ed., 2008).

³ Id. § 6A.01[2][a].

⁴See ANSI: Historical Overview, http://www.ansi.org/about_ansi/introduction/history.aspx?menuid=1 (last visited Jan. 29, 2009).

⁵ See Feldman & Weinfield, supra note 2, § 6A.01[2][a].

⁶ The process for adopting ISO standards involves a complex procedure of drafts and commenting. "Consensus" is defined as "[g]eneral agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments," qualified by a note observing that "[c]onsensus need not imply unanimity." See Glossary of Terms and Abbreviations Used in ISO/TC Business Plans, http://isotc.iso.org/livelink/livelink.exe/fetch/2000/2122/687806/Glossary.htm? nodeid=2778927&vernum=0 (last visited Jan. 29, 2009) [hereinafter ISO Glossary]. Publication of an ISO standard requires approval by seventy-five percent of the members casting a vote. Int'l Org. for Standardization [ISO], Environmental Management Systems—Requirements with Guidance for Use, at iv, ISO 14001 (Nov. 15, 2004) (ISO 14000 Environmental Management CD-ROM, 2007).

⁷ See Feldman & Weinfield, supra note 2, § 6A.01[3][a].

^{*} See ISO, About ISO/TC207, http://www.tc207.org/About207.asp (last visited Jan. 29, 2009). See generally The ISO 14000 Handbook (Joseph Cascio ed., 1996); Tom Tibor with Ira Feldman, ISO 14000: A Guide to the New Environmental Management Stan-

piece of the program is ISO 14001 on environmental management systems (EMS). Unlike product standards such as film speeds, EMS is a process-oriented approach designed to help an organization "to develop and implement its environmental policy and manage its environmental aspects," including "organizational structure, planning activities, responsibilities, practices, procedures, processes and resources." Also included in the 14000 series are standards for environmental assessments, ¹⁰ product labeling and declarations, ¹¹ life cycle assessment, ¹² environmental communication, ¹³ and greenhouse gas emission reporting. ¹⁴

Although the standard is intended to have societal benefits as well, the principal purpose of ISO 14001 is to assist businesses in developing and implementing their own environmental policies and programs. Apart from its voluntary character, the standard is strictly

DARDS (1996); Christopher L. Bell, ISO 14001: Application of International Environmental Management Systems Standards in the United States, 25 Envtl. L. Rep. 10,678 (1995); David W. Case, Changing Corporate Behavior Through Environmental Management Systems, 31 Wm. & Mary Envtl. L. & Pol'y Rev. 75 (2008); Paulette L. Stenzel, Can the ISO 14000 Series Environmental Management Standards Provide a Viable Alternative to Government Regulation?, 37 Am Bus. L.J. 237 (2000).

⁹Environmental Management Systems—Requirements with Guidance for Use, supra note 6, § 3.8 & n.2; see also ISO, Environmental Management Systems—General Guidelines on Principles, Systems and Support Techniques, ISO 14004 (Nov. 15, 2004).

¹⁰ See ISO, Environmental Management—Environmental Assessment of Sites and Organizations (EASO), ISO 14015 (Nov. 15, 2001).

¹¹ See ISO, Environmental Labels and Declarations—General Principles, ISO 14020 (Sept. 15, 2000); ISO, Environmental Labels and Declarations—Self-Declared Environmental Claims (Type II Environmental Labelling), ISO 14021 (Sept. 15, 1999); ISO, Environmental Labels and Declarations—Type I Environmental Labelling—Principles and Procedures, ISO 14024 (Apr. 1, 1999); ISO, Environmental Labels and Declarations—Type III Environmental Declarations—Principles and Procedures, ISO 14025 (July 1, 2006).

¹² See ISO, Environmental Management—Life Cycle Assessment—Principles and Framework, ISO 14040 (July 1, 2006); ISO, Environmental Management—Life Cycle Assessment—Requirements and Guidelines, ISO 14044 (July 1, 2006); see also ISO, Environmental Management—Life Cycle Impact Assessment—Examples of Application of ISO 14042, ISO/TR 14047 (Oct. 1, 2003); ISO, Environmental Management—Life Cycle Assessment—Data Documentation Format, ISO/TS 14048 (Apr. 1, 2002); ISO, Environmental Management—Life Cycle Assessment—Examples of Application of ISO 14041 to Goal and Scope Definition and Inventory Analysis, ISO/TR 14049 (Mar. 15, 2000).

¹³ See ISO, Environmental Management—Environmental Communication—Guidelines and Examples, ISO 14063 (Aug. 1, 2006).

¹⁴ ISO, Greenhouse Gases—Part 1: Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gase Emissions and Removals, ISO 14064-1 (Mar. 1, 2006); ISO, Greenhouse Gases—Part 2: Specification with Guidance at the Project Level for Quantification, Monitoring and Reporting of Greenhouse Gas Emission Reductions or Removal Enhancements, ISO 14064-2 (Mar. 1, 2006); ISO, Greenhouse Gases—Part 3: Specification with Guidance for the Validation and Verification of Greenhouse Gas Assertions, ISO 14064-3 (Mar. 1, 2006); ISO, Greenhouse Gases—Requirements for Greenhouse Gas Validation and Verification Bodies for Use in Accreditation or Other Forms of Recognition, ISO 14065 (Apr. 15, 2007).

procedural in nature and does not specify particular outcomes. The program also includes a private third-party auditing and certification scheme to verify compliance and implementation. The ISO 14000 series of standards is consequently fundamentally different in kind from mandatory governmentally adopted requirements such as effluent limitations adopted under the Clean Water Act.

In 2008, just over ten years after the issuance of ISO 14001, a process for reviewing and revising that standard has now begun. ¹⁶ TC 207 is also at work on a new draft standard, ISO 14005, on the phased implementation of EMSs and the use of environmental performance evaluations. ¹⁷ Environmentally related efforts are also taking place in other technical committees besides TC 207. ¹⁸ As of this writing, for instance, there has been some activity underway in ISO with respect to liquid biofuels undertaken by TC 28 on petroleum products and lubricants, which recently created a new subcommittee to work on this topic. ¹⁹ ISO is currently working on a new standard 26000 addressing social responsibility, which also has an environmental component.

II. BENEFITS OF ISO'S ENVIRONMENTAL STANDARDS

ISO standards, including the 14000 series, potentially have a global reach. A large proportion of the countries on the planet participate in ISO activities, and ISO standards have a high profile within multinational corporations. A number of beneficial consequences flow from these attributes.

¹⁵ See ISO, Guidelines for Quality and/or Environmental Management Systems Auditing, ISO 19011 (Oct. 1, 2002). These principles for auditing also apply to the ISO 9000 series of standards on quality management systems (QMS). Feldman & Weinfield, *supra* note 2, § 6A.01[2][a]. The ISO 9000 series is similar in structure to ISO 14001 and served as a model for the subsequent development of ISO's environmental standards. *Id.* Of the ISO 14000 series of standards, only 14001 on environmental management systems is subject to a certification process. *Id.*

¹⁶ See ISO, Technical Comm. 207 on Envtl. Mgmt., Communiqué: 14th Annual Meeting of ISO Technical Committee 207 on Environmental Management, ISO TC207 N840 (June 29, 2007), available at http://www.tc207.org/pdf/n840isotc207meeting14communiquebeijing.pdf.

¹⁷ See Susan L.K. Briggs, ISO 14000 Hits 10-Year Mark, QUALITY PROGRESS, Aug. 2007, at 67, 67–68 (identifying need to address applicability of ISO 14001 to small- and mid-sized organizations; credibility of certificates; and compatibility with other management systems).

¹⁸ *Id.* at 68.

¹⁹ ISO, Technical Comm. 28, Results on the Proposal to Establish a New ISO/TC 28 Subcommittee on Liquid Biofuels, ISO/TC 28 N 2328 (Oct. 18, 2007) [hereinafter Results on the Proposal to Establish a New ISO/TC 28 Subcommittee on Liquid Biofuels], available at http://committees.api.org/standards/isotc28/ndocs/07docs/28n2328.pdf.

One salient feature of ISO 14001, often cited, is the effect of elevating environmental issues within an enterprise. Because an EMS is addressed to the entirety of the production process, at least in principle the exercise of preparing and adopting an EMS engages the entire corporation, including top management.

Although EMS is a process-oriented approach that in principle is distinct from substantive, governmentally established regulatory requirements, the two are quite obviously interrelated. That is, an ISO-conforming EMS ought to assist a firm in meeting performance-based standards such as emissions limitations promulgated under the major environmental regulatory statutes. Among other benefits of ISO 14001 are "[r]educed environmental footprint in terms of environmental emissions, discharges and waste; [i]mproved internal communications and external partnerships; [and] [c]ontinual system improvements resulting from EMS objectives, targets, programs, periodic audits and management reviews."²⁰

ISO standards set out uniform expectations from one country to another. To that extent, the meaning of an ISO-conforming environmental management system is similar or identical regardless of location. A corollary benefit of uniformity that is frequently identified is the salutary effect on international trade. Although this attribute is not necessarily immediately obvious in the case of ISO 14001, which adopts a process-oriented approach,²¹ other standards in the ISO 14000 series demonstrate the utility of homogeneity. One of the motivations for standards on environmental labeling, for instance, is to assure consistency for environmental claims and to assure that environmental labels do not operate as disguised barriers to trade.²² ISO standards on reporting greenhouse gas emissions or removals are designed to assure consistency in metrics from one country to another so as to facilitate comparability of data.²³

Although perhaps easily overlooked from a U.S. perspective, ISO standards are also effective in elevating environmental protection to an international plane. Although voluntary and adopted primarily by in-

²⁰ Briggs, supra note 17, at 67.

²¹ See ISO 14001, supra note 6, Introduction.

²² See ISO 14020, *supra* note 11, § 4.3.1 ("Procedures and requirements for environmental labels and declarations shall not be prepared, adopted, or applied with a view to, or with the effect of, creating unnecessary obstacles to international trade.").

²³ See ISO 14064–1, supra note 14, § 0.2 ("ISO 14064 is expected to benefit organizations, governments, project proponents and stakeholders worldwide by providing clarity and consistency for quantifying, monitoring, reporting and validating or verifying [greenhouse gas] inventories or projects.").

dustry representatives for the benefit of industry, ISO standards nonetheless are, indeed, standards. If nothing else, the mere existence of ISO standards on the environment signals that this subject matter is an issue of transnational importance. The process of developing ISO standards, moreover, encourages an international dialogue that also helps to lift the topics addressed by the standards above the domestic level.

Some governments, particularly those of developing countries, may have limited or inadequate regulatory infrastructure. In such a setting, ISO standards can create a template for national laws and regulations. Because they are addressed directly to private parties, including multinational corporations, ISO standards in such a setting can also operate as something of a default safety net. In situations where governments may be less than effective in assuring environmental quality, ISO requirements may serve literally as a standard for governments and the public to hold private entities accountable.

One of the principal features of ISO 14001 is the availability of third-party certification. Although firms may utilize ISO standards without seeking certification, which like the standards themselves is voluntary, the availability of third-party certification is an additional factor that tends to encourage consistency. There may be additional benefits to certification in the form of market share and institutional reputation. Some customers may demand ISO 14000 certification from their suppliers.

ISO 14001 consequently is written so as to be "auditable" or verifiable. The third-party certification scheme is designed to increase public confidence in corporate accountability. In principle, if a corporation is ISO 14001 certified, then consumers and the public can have a certain level of confidence in purchasing goods or services from it. Certification is also a way to promote positive relationships with local communities, which may be concerned about the environmental performance of a nearby facility. Moreover, the prospect of certification creates incentives for industry to adopt environmental management systems. More than 21,000 entities in North America have now received certification under ISO 14001.²⁴

It is also possible for entities to self-declare or self-certify. The number of facilities that are implementing ISO 14001, as an indicator of the reach of the Standard, is consequently likely higher than the number of certifications. Although the obvious value of third-party certification is credibility, the Standard itself anticipates that this is not

²⁴ Briggs, *supra* note 17, at 67.

necessary to obtain the benefits of ISO 14001.²⁵ For instance, local governments or utilities may wish to improve their environmental performance by making use of ISO standards, but may feel that other forms of political accountability render certification redundant or unnecessary.

In the United States, ISO 14001 has had particular utility in the public sector, where it has served as a basis for the adoption of EMSs for public buildings and undertakings. The Clinton administration promulgated an executive order which specifically required the implementation of EMSs by federal agencies and facilities by the end of 2005.²⁶ While not mentioning ISO 14001 by name, the ISO Standard has been the typical model for implementation of the Executive Order, an important instrument for reducing the federal government's environmental footprint. Governmental entities at the state and local level have also successfully employed EMSs, including those that conform to ISO 14001.²⁷

III. CONCERNS ABOUT ISO'S ENVIRONMENTAL STANDARDS

In utilizing and evaluating ISO standards such as the 14000 series, one must be aware of their origins. ISO is an international consortium of national standardizing bodies, and the ISO process involves harmonization of potentially disparate national standards. ISO standards

²⁵ See ISO 14001, supra note 6, § 1 (The Standard is "applicable to any organization that wishes to . . . demonstrate conformity with this International Standard by . . . making a self-determination and self-declaration"). ISO 14031 provides guidance intended to improve the efficacy of EMSs, but "is not intended for use as a specification standard for certification or registration purposes or for the establishment of any other environmental management system conformance requirements." ISO, Environmental Management—Environmental Performance Evaluation—Guidelines, ISO 14031, § 1 (Nov. 15, 1999). Rather, ISO 14031 "would appear to offer a cost effective methodology through which organizations can add real, tangible value, by focusing on critical areas of environmental performance." José Flávio Guerra Machado Coelho, Sustainability Performance Evaluation: Management Systems Model for Individual Organizations and Supply Chains 40 (Nov. 2005) (unpublished Ph.D. thesis, Central Queensland University) (on file with the Boston College Environmental Affairs Law Review), available at http://library-resources.cqu.edu.au/thesis/adt-QCQU/uploads/approved/adt-QCQU20060720.094327 /public/02whole.pdf.

²⁶ Exec. Order No. 13,148, 65 Fed. Reg. 24,595, 24,597–98 (Apr. 21, 2000). This Executive Order has been superseded by Exec. Order 13,423, 72 Fed. Reg. 3919, 3920 (Jan. 24, 2007), which also requires EMSs for federal agencies and facilities. *See generally* Ann Rhodes, Note, *ISO Enters the Public Sector Through the United States Forest Service*, 18 Colo. J. Int'l Envil. L. & Pol'y 417 (2007).

²⁷ See, e.g., ISO 14001 in Pennsylvania: EMS for Local Government, http://www.dep.state.pa.us/dep/deputate/pollprev/iso14001/emslgo.htm (last visited Jan. 29, 2009) (state program supporting implementation of ISO 14001-like EMSs in local municipalities).

are voluntary and addressed directly to private parties—largely industry—and are adopted by a process that involves national delegations composed almost exclusively of industry representatives.

Although environmental organizations and academics have been invited to participate in the ISO process in the United States, it would be difficult to say that ISO as a forum reflects a balanced representation of stakeholders on environmental issues; the prevailing tone is still very much industry-oriented. Because of the voluntary nature of ISO standards, the perception of industry domination of the forum, the lengthy and complicated process for adoption of ISO standards, and the expense of attending frequent overseas meetings, few American non-profit environmental organizations have made a significant commitment to the ISO process.

Moreover, ISO standards are adopted by consensus, which is very carefully defined in the ISO universe. ²⁸ Although there are different tests at different stages of the process, "consensus" generally means widespread acceptance after lengthy consultation. It is therefore unlikely that ISO standards will serve as a dynamic driver of improvements in environmental quality. To the contrary, concern about the potential for the ISO process to produce modest, least-common-denom-inator outputs is frequently expressed.

A. Relationship to Public Regulation in the United States

To the extent that ISO processes are directed at selecting among essentially arbitrary choices of little societal impact but of great practical utility to industry, such as standardizing film speeds, the Organization's institutional structure has been of little concern from the point of view of public policy. The specifications chosen for film speeds do not really matter so long as they are compatible with all cameras around the world. But by moving into the field of environment, the ISO 14000 standards have entered an arena of public policy which, in the United States and many other countries, is already governed by a complex web of governmentally mandated standards. This feature is not necessarily undesirable from a normative point of view, but it suggests that the relationship between ISO standards and governmental regulatory requirements is, at least potentially, a delicate one.

One relatively obvious distinction is that ISO standards are responsive to a different constituency than is public regulation. Where envi-

²⁸ See ISO Glossary, supra note 6.

ronmental statutory and regulatory requirements, at least in principle, have an aura of democratic legitimacy, the principal audience for ISO standards can be expected to be motivated primarily by market-driven factors, such as profitability. The consensus requirement creates additional reservations about the potential for downward inertia originating from literally around the globe. In such a setting, objections to excessive stringency can be expected to dominate by comparison with initiatives that might push for greater rigor. The voluntary nature of ISO standards renders them fundamentally different in kind from most governmentally established environmental requirements. Last, unlike public enforcement processes, the principal means of implementation is through a private third-party auditing process, also voluntary in nature.

These sorts of concerns have led to an equivocal relationship between private voluntary processes and federal regulators in the United States. On the one hand, there is potentially some synergy between ISO standards and the goals of public regulation. An ISO-conforming EMS may help a firm meet regulatory requirements, and the third-party auditing process may identify compliance problems at an early stage. Participation of regulatory officials in the normative phase of these voluntary undertakings can be beneficial, and, on occasion, private voluntary standards may be appropriate alternatives to mandatory, governmental regulation. For example, a voluntary consensus standard may generate better data than the regulatory process, may be an efficacious vehicle for educating regulatory officials as to the practical needs of industry, and, if effective, may obviate the need for regulatory intervention altogether.²⁹ For these reasons, a variety of federal authorities encourage federal officials to participate in the

²⁹ For example, EMSs have been used as a component of injunctive relief in civil enforcement settlements. *See* U.S. Envtl. Prot. Agency, Action Plan for Promoting the Use of Environmental Management Systems (EMS) (2001), *available at* http://www.epa.gov/ems/position/action.htm (follow "Goal 3" hyperlink). EMSs are referenced in EPA's audit and self-disclosure policy. *See* Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations, 65 Fed. Reg. 19,618, 19,621 (Apr. 11, 2000). EMSs have featured prominently in a variety of EPA corporate excellence programs, the current version of which is the National Environmental Performance Track. *See* Description of Program Changes for the National Environmental Performance Track, 69 Fed. Reg. 27,922, 27,923 (May 17, 2004); U.S. Envtl. Prot. Agency, National Environmental Performance Track (Program Guide 1 (2008), *available at* http://www.epa.gov/performancetrack/downloads/PT2008_guide_v7.pdf. *See generally* Position Statement on Environmental Management Systems (EMSs), 71 Fed. Reg. 5664 (Feb. 2, 2006).

process of drafting, and to make use of the work product from, voluntary standard-setting efforts.³⁰

On the other hand, it is equally clear that federal agencies must in all cases abide by the statutory standards that govern the agencies' activities. Whatever their policy merits, ISO standards domestically are private, voluntary undertakings. Consequently, federal agencies may use governmental standards adopted by a non-governmental entity, like ISO, regardless of the respect accorded such a body, only as hortatory guidance which must be reevaluated by reference to appropriate statutory standards.³¹ This result is self-evident, as ISO, whose members are representatives of affected industries, does not necessarily represent the public interest more broadly. Indeed, it is not difficult to imagine a setting in which the array of interests that shape an industry-dominated, voluntary standard-setting process is expressly contrary to the well-being of the public in the United States and abroad. Even so, there is frequently a residual concern about a potentially hidden agenda to substitute ISO standards for federal regulation. Presumably for reasons such as these, federal officials tend to play a deferential role, and U.S. governmental input tends to be of limited importance in the process.³²

³⁰ See e.g., National Technology Transfer and Advancement Act of 1995, Pub. L. No. 104-113, § 12(d)(1)-(2), 110 Stat. 775, 783 (1996) (specifying that "all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments" and that "Federal agencies and departments shall consult with voluntary, private sector, consensus standards bodies and shall . . . participate with such bodies in the development of technical standards"); OMB Circular No. A-119; Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities, 63 Fed. Reg. 8546 (Feb. 19, 1998). Section 6 of the Circular specifies that "[a]ll federal agencies must use voluntary consensus standards in lieu of government-unique standards in their procurement and regulatory activities, except where inconsistent with law or otherwise impractical." Id. at 8554. Section 7 states that "[a]gencies must consult with voluntary consensus standards bodies, both domestic and international, and must participate with such bodies in the development of voluntary consensus standards when consultation and participation is in the public interest and is compatible with their missions, authorities, priorities, and budget resources." Id. at 8555-56.

³¹ See, e.g., OMB Circular No. A-119; Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities, 63 Fed. Reg. at 8555 ("This policy does not preempt or restrict agencies' authorities and responsibilities to make regulatory decisions authorized by statute. Such regulatory authorities and responsibilities include determining the level of acceptable risk; setting the level of protection; and balancing risk, cost, and availability of technology in establishing regulatory standards.").

³² At least some knowledgeable observers feel that governmental entities, such as the National Institute of Standards and Technology, should play a more active role in ANSI and, through it, ISO, at least with respect to standard-setting activities like the ISO 14000

B. Procedural Character and Substantive Limitations

ISO 14001, unlike a product standard such as film speed, is fundamentally procedural in nature. With the benefit of hindsight, it is perhaps easy to see why this is so. The process of drafting ISO 14001 involved the reconciliation of competing approaches, including in particular the European Eco-Management and Audit Scheme (EMAS),³³ some of which continue to exist as alternatives or supplements to ISO 14001. To that extent, the utility to industry may be maximized and the overlap with regulatory requirements adopted through governmental processes reduced. In particular, an ISO 14001-conforming EMS is designed to help a company achieve its own environmental goals through an iterative process of "continual improvement."34

Even so, ISO 14001 has been criticized for its failure to engage with substantive regulatory requirements. Consistent with ISO 14001's systems—as opposed to a substantive approach—a company may receive ISO 14001 certification even with outstanding regulatory violations.³⁵ Not surprisingly, this attribute of the ISO standards has been the subject of serious criticism. 36 The public, being unfamiliar with the nuances of the standard and the meaning of ISO certification, may very well be misled into thinking that certification is an indication of superior substantive environmental performance.

Another attribute of ISO 14001 that has been the subject of considerable criticism is the lack of transparency in the process. As they are under development, ISO standards are generally not publicly available. Even the standards themselves are copyrighted and proprietary, and at least in principle must be purchased for use.³⁷

series that have public policy implications. Telephone Interview with Ira R. Feldman, President and Senior Counsel, Greentrack Strategies (Feb. 8, 2008).

³³ See Council Regulation 761/2001, Allowing Voluntary Participation by Organisations in a Community Eco-Management and Audit Scheme (EMAS), 2001 O.J. (L 114) 1 (EC). See generally EMAS: The Community Eco-Management and Audit Scheme, http://ec.europa.eu/ environment/emas/index_en.htm (last visited Jan. 29, 2009).

³⁴ ISO 14001, supra note 6, § 3.2 (defining "continual improvement" as a "recurring process of enhancing the environmental management system in order to achieve improvements in overall environmental performance consistent with the organization's environmental policy").

³⁵ See, e.g., Feldman & Weinfield, supra note 2, § 6A.04[2].

³⁶ E.g., Naomi Roht-Arriaza, Shifting the Point of Regulation: The International Organization for Standardization and Global Lawmaking on Trade and the Environment, 22 Ecology L.Q. 479, 534-38 (1995).

³⁷ Int'l Org. for Standardization & Int'l Electrotechnical Comm'n, Copy-RIGHT, STANDARDS AND THE INTERNET, available at http://www.iso.org/iso/copyright_ information_brochure.pdf (last visited Jan. 29, 2009).

The process of preparing an ISO 14001-conforming EMS does not necessarily involve any public participation, and the standard specifies little if any provision of environmentally related information to the public. Standard specifies 18O 14001 calls for an enterprise to make its generic environmental policy available to the public. As to the EMS itself, It he organization shall decide whether to communicate externally about its significant environmental aspects. Otherwise, the only requirement is to Establish, implement and maintain a procedure (s) for . . . receiving, documenting and responding to relevant communication from external interested parties, Talpresumably including the public.

ISO certification is also somewhat less effective than might appear at first blush. The ISO 14001 auditing and certification process is similar in concept to a financial audit. As demonstrated by recent public accounting scandals, there may be good cause for concern about the existence of a multiplicity of auditing and certifying entities competing with each other for business.⁴³ The disclosure of substantive regulatory violations that might be identified during an audit is a particularly sensitive issue. Such a situation can trigger a race-to-the-bottom dynamic, in which companies seeking certification may engage in "forum shopping" by choosing registrars (certifying bodies or

³⁸ See generally ISO 14063, supra note 13. ISO 14063 addresses the transmittal of environmentally related information, including to the public. *Id.* at § 1. That standard, however, contains no substantive minimum standard for transparency, but instead describes good practice standards for environmental communication policies and approaches if an entity chooses to undertake such activities. *See generally id.*

³⁹ ISO 14001, *supra* note 6, § 4.2(g).

⁴⁰ Id. § 4.4.3.

⁴¹ *Id.* § 4.4.3, 4.4.3(b).

⁴² But see supra note 38 and accompanying text (ISO 14063 specifies form of, but not need for, environmental communication).

⁴³ In the United States, registrars are accredited to award ISO 14001 certification by the American National Standards Institute-American Society for Quality (ANSI-ASQ) National Accreditation Board (formerly the American National Standards Institute-Registrar Accreditation Board National Accreditation Program (ANSI-RAB NAP)). See ANAB, http://www.anab.org (last visited Jan. 29, 2009). As of this writing, the ANSI-ASQ National Accreditation Board has accredited about 25 registrars to perform ISO 14001 audits. Id. (follow "Directory" hyperlink; then search for standard "ISO 14001"). Some of those companies are headquartered abroad in countries such as Canada, the United Kingdom, Mexico, Korea and China. Id. The potential for registrars (certification bodies or auditors) to be accredited by counterparts of the ANSI-RAB NAP in foreign countries in turn can trigger "forum shopping" at the next rung up the institutional ladder. Id. (follow "MCAA" hyperlink).

auditors) that are perceived as likely to apply less rather than more rigorous approaches to the certification process.⁴⁴

The certification process itself may give little reason for confidence, at least to third parties who might rely upon it as an indication of quality control. To facilitate external evaluation, the standards themselves must be "auditable" —meaning capable of unbiased verification. While ostensibly facilitating objectivity, this feature can encourage a kind of checklist approach to the audit process based on items whose presence or absence can be impartially confirmed in a binary on/off mode. In the evaluation of training courses provided by registrars to auditors, for instance, this may translate into factors such as whether the instructor spent the required minimum amount of time with students. Tonsistent with the basic approach, qualitative criteria such as teaching effectiveness are not taken into account. The emphasis in the certification process consequently tends to be on rote satisfaction of objectively verifiable requirements rather than on exceeding or surpassing minimum standards.

IV. SWORDS, SHIELDS, AND TRADE AGREEMENTS

The motivation for the adoption of ISO standards, even those within the 14000 series, may be quite diverse. The newly released ISO standards on greenhouse gases do not require any particular substantive performance requirements. Instead, these standards address primarily the integrity of data reporting. Consequently, they would appear to be of limited application, primarily in settings such as the calculation of offsets and trading of emissions rights where a standard format for collecting and reporting data is required.

ISO standards on eco-labeling, by contrast, appear to have been motivated by a concern to rein in or discipline a proliferation of diver-

⁴⁴ See Briggs, supra note 17, at 67–68 (noting that "the underlying competitiveness of the certification industry can drive auditors to cut audit durations," and noting pressure on auditors to refrain from issuing nonconformances (NCRs)).

⁴⁵ See ISO 19011, supra note 15 ("Guidelines for Quality and/or Environmental Management Systems Auditing.").

⁴⁶ See Briggs, supra note 17, at 67 ("[U]sers want verification that an EMS results in improved performance, not just conformance to requirements during a certification audit. Because there is inconsistency in results, users are questioning the value of accredited certification.").

⁴⁷ See generally REGISTRAR ACCREDITATION BD. AND QUALITY SOC'Y OF AUSTRALASIA INT'L (RABSQA), TRAINING COURSE CERTIFICATION: TRAINING PROVIDER ADMINISTRATION REQUIREMENTS (2007), available at http://www.rabqsa.com/docs/downloads /TCD62.pdf (standards for certifying training providers).

gent approaches, which among other things could operate as trade barriers. While the biofuels initiative in TC 28 is at an early stage of development and little information is publicly available, the likely scope will include harmonization of standards and test methods.⁴⁸ This effort appears to have been commenced in response to a high current level of interest in public policy for biofuels and a variety of proposals for private voluntary certification and labeling schemes for them.

As demonstrated by these latter initiatives, ISO standards may well be intended to establish not only a floor, but also a ceiling. That is, part of the motivation for their adoption may be to encourage uniformity as a response to a proliferation of divergent approaches. From this point of view, the concern is that the effect of ISO standards may very well operate so as to impede the development of creative new approaches to environmental problems.

A. Transformative Effect of Trade Agreements

In the mid-1990s—probably not entirely by chance coinciding with the development of the ISO 14000 series—the public policy effect of ISO standards received considerable impetus in the form of the adoption of two new international trade agreements: the North American Free Trade Agreement (NAFTA),⁴⁹ and the Uruguay Round of Multilateral Negotiations in GATT,⁵⁰ which created the World Trade Organization (WTO). Chapter Nine of NAFTA addresses "technical barriers to trade," as does a new WTO Agreement on Technical Barriers to Trade (TBT Agreement).⁵¹ A wide variety of regulatory requirements that have environmental or public health implications, including specifications for consumer products and children's toys, appliance efficiency criteria, and vehicle fuel efficiency standards, are potentially covered by these requirements.⁵²

⁴⁸ See Results on the Proposal to Establish a New ISO/TC 28 Subcommittee on Liquid Biofuels, subrapote 19

⁴⁹ E.g., North American Free Trade Agreement, U.S.-Can.-Mex., Dec. 17, 1992, 32 I.L.M. 289 [hereinafter NAFTA].

⁵⁰ See Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Apr. 15, 1994, 1867 U.N.T.S. 14; Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154.

⁵¹ See NAFTA, supra note 49, ch. 9; Agreement on Technical Barriers to Trade, Apr. 15, 1994, 1868 U.N.T.S. 120 [hereinafter TBT Agreement].

⁵² The TBT Agreement applies to all products in international trade and governs a "technical regulation," which is defined as an instrument which "lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal

International obligations or "disciplines" on trade are almost exclusively "negative," in the sense that they establish constraints on governmental action. A partial analogy can be found in the Dormant Commerce Clause of the U.S. Constitution, 53 which places similar limitations on state-level regulation even in the absence of congressional legislation. Trade agreements encourage liberalized or free trade through requirements that limit governmental intrusion into what otherwise would be a free market. From an environmental point of view, this phenomenon is the equivalent of deregulation—in the sense of reducing the level of governmental intervention in the market in the form of tariffs or other prescriptive requirements—and trade agreements by virtue of their negative obligations are inherently deregulatory. This momentum largely explains the phenomenon of globalization, at least as it has been defined for the past decade or so: getting governments out of the business of impeding private interactions and transactions, thereby facilitating their global reach.

Environmental protection by contrast anticipates affirmative governmental intervention in the marketplace to offset market failures. That explains the clash between the two approaches: one operates to disable governmental action, while the other depends on invigorating government. Obligations in trade agreements *proscribe* certain governmental behaviors that impede trade, while environmental laws *prescribe* affirmative governmental actions to protect public health and ecosystems. In other words, free trade agreements do not contain any affirmative obligations to protect the environment or public health; rather, they establish constraints on the capacity of member states to implement domestic regulatory standards.⁵⁴ Like most international trade agreements, the WTO TBT Agreement is asymmetric, in that it contains no minimum standards of performance in the field of environment or in most other areas of social and regulatory policy.

Consistent with that approach, the WTO TBT Agreement defines "standards," as that term is used in that text, to include voluntary guidelines adopted by an "international standardizing body," 55 a term which

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exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method." TBT Agreement, supra note 51, Annex 1, ¶ 1 ("Terms and their Definitions for the Purpose of This Agreement.").

⁵⁸ See, e.g., City of Philadelphia v. New Jersey, 437 U.S. 617, 622–23 (1978) (applying Dormant Commerce Clause to interstate trade in waste).

⁵⁴ See, e.g., Douglas J. Caldwell & David A. Wirth, *Trade and the Environment: Equilibrium or Imbalance*?, 17 Mich. J. Int'l L. 563, 586 (1996) (book review).

⁵⁵ TBT Agreement, *supra* note 51, at Annex 1, ¶ 2 ("Terms and Their Definitions for the Purpose of This Agreement."). According to the TBT Agreement, a "standard" is a

was expressly intended to include ISO.⁵⁶ Although standards adopted by ISO are non-binding instruments addressed directly to private entities, the TBT Agreement then goes on to require the utilization of "relevant international standards" where they exist in promulgating governmentally mandated regulatory requirements.⁵⁷ Governmental regulations that conform to the standards adopted by such an international standardizing body are entitled to a rebuttable presumption of validity.⁵⁸ To justify a departure from international standards, presumably because they are insufficiently rigorous, a WTO member would have to demonstrate that a harmonized international standard "would be an ineffective or inappropriate means for the fulfilment of the legitimate objectives pursued."⁵⁹ The WTO jurisprudence interpreting this provision suggests that the threshold for justifying a departure from international standards is high.⁶⁰

Thanks to the structure of the TBT Agreement, those national regulatory requirements that are not based on the output, when it exists, of such a body are therefore particularly vulnerable to challenge as unnecessary obstacles to international trade. And the sorts of governmental requirements that are most likely to create impediments to international trade are those that are more rigorous than the international requirements, which may well be the product of a least-commondenominator consensus in an industry-dominated forum. The result is that, through a trade agreement, the expectations of what, at least from the point of view of the United States, is a *private* standardizing organi-

[d]ocument approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.

Id.

⁵⁶ See id. (expressly referencing "the sixth edition of the ISO/IEC Guide 2: 1991, General Terms and Their Definitions Concerning Standardization and Related Activities").

⁵⁷ *Id.* at art. 2.4.

⁵⁸ *Id.* at art. 2.5.

⁵⁹ *Id.* at art 2.4. The analogous passage in NAFTA sets out a similar approach. NAFTA, *supra* note 49, ch. 9, arts. 905 & 915 (defining "standard" as "a document, approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics . . . with which compliance is not mandatory").

⁶⁰ See, e.g., Appellate Body Report, European Communities—Trade Description of Sardines, WT/DS231/AB/R (Sept. 26, 2002) (requiring application of non-binding standard promulgated by Codex Alimentarius Commission) [hereinafter EC—Sardines].

zation are transformed into an outer limit of rigor—a ceiling—for *public* regulation to protect health and environment domestically.

Initially, the requirements of the Uruguay Round TBT Agreement and other trade agreements may appear to be similar to those in the United States, such as OMB Circular A-119, which counsel reliance on ISO standards to the extent consistent with statutory mandates.⁶¹ In actuality, however, the two situations are very different. While authorizing consistency where possible with ISO standards as non-binding advisory guidelines, the OMB Circular, as it must, reasserts the primacy of congressionally enacted legislative requirements.⁶² By contrast, NAFTA and the WTO TBT Agreement adopt the *private* standard as a reference point and require *public* authorities to justify departures, especially those tending in the direction of more rigorous requirements, from those privately agreed expectations. This situation in effect bootstraps a nongovernmental standard into one with binding significance for governmentally established regulatory requirements, at least as a matter of international law.

Departures from the benchmark standard by domestic regulatory authorities can then be challenged by foreign governments through the trade agreement dispute settlement process, among the more efficacious known in the international legal system.⁶³ In other words, operating through the TBT Agreement, non-binding ISO standards may acquire international legal significance, may be transformed from minimum standards of performance into regulatory ceilings from which governments must justify departure in terms of greater rigor, and, at least from the U.S. point of view, may metamorphose from strictly private, non-governmental instruments to standards with international legal significance.

On the domestic level, the results of WTO and NAFTA dispute settlement processes—the international equivalent of judicial opin-

⁶¹ See OMB Circular A–119; Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities, 63 Fed. Reg. 8546, 8554 (Feb. 19, 1998).

⁶² Id.

⁶³ See Understanding on Rules and Procedures Governing the Settlement of Disputes, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, supra note 50, at Annex 2, Legal Instruments—Results of Uruguay Round (containing the "Understanding on Rules and Procedures Governing the Settlement of Disputes"). See generally DAVID PALMETER & PETROS C. MAVROIDIS, DISPUTE SETTLEMENT IN THE WORLD TRADE ORGANIZATION: PRACTICE AND PROCEDURE (1999) (providing analysis of WTO dispute settlement procedures).

ions—do not have the force of law.⁶⁴ They do, however, create serious expectations on the international level, and are possibly binding as a matter of international law. 65 A finding by an international trade agreement dispute settlement panel or the WTO's Appellate Body that the United States is not complying with its international obligations also engages serious separation of powers considerations, and the courts may be reluctant to impede implementation by the Executive Branch, the "sole organ" of the Nation in foreign affairs. 66 The back-impact of international trade agreement dispute settlement proceedings within the United States consequently may be considerable. The limited jurisprudence on the subject suggests that, although WTO panel and Appellate Body reports do not have the force of law, reviewing courts are inclined to give them considerable deference,⁶⁷ presumably so as to avoid interference with the Executive's prerogative in foreign affairs and to avoid the appearance of judicial management of the foreign relations of the United States.

B. Eco-Labeling

ISO standards for "eco-labeling" illustrate this phenomenon well. Eco-labeling schemes, by communicating distinctions in similar products based on relative environmental impact, are designed to inform consumers of environmentally preferable product choices. Foreign eco-labels have been the subject of criticism from U.S. industry, which has asserted in particular that a governmentally sponsored, voluntary

⁶⁴ 19 U.S.C. § 3312 (2000) (relationship of NAFTA to federal and state law); 19 U.S.C. § 3512 (2000) (relationship of Uruguay Round agreements to federal and state law); cf. Medellin v. Texas, 128 S. Ct. 1346, 1360–61 (2008) (domestic effect of decisions of International Court of Justice).

⁶⁵ See, e.g., John H. Jackson, International Law Status of WTO Dispute Settlement Reports: Obligation to Comply or Option to "Buy Out"?, 98 Am. J. Int'l. L. 109, 117–23 (2004) (results of WTO dispute settlement proceedings binding under international law). But see Judith Hippler Bello, The WTO Dispute Settlement Understanding: Less Is More, 90 Am. J. Int'l. L. 416, 416–18 (1996) (results of WTO dispute settlement proceedings not binding under international law, but merely give rise to right to retaliate); Warren F. Schwartz & Alan O. Sykes, The Economic Structure of Renegotiation and Dispute Resolution in the World Trade Organization, 31 J. Legal Stud. S179, S181 (2002) (WTO dispute settlement system better understood as providing for "efficient breach").

⁶⁶ See United States v. Curtiss-Wright Exp. Corp., 299 U.S. 304, 319 (1936).

⁶⁷ E.g., George E. Warren Corp. v. EPA, 159 F.3d 616, 623–24 (D.C. Cir. 1998) (judicial review of reformulated gasoline rule promulgated under Clean Air Act after successful WTO challenge and adverse WTO Appellate Body report). See generally Patrick C. Reed, Relationship of WTO Obligations to U.S. International Trade Law: Internationalist Vision Meets Domestic Reality, 38 Geo. J. Int'l L. 209 (2006) (analyzing domestic effect of WTO dispute settlement proceedings in U.S. court proceedings).

program currently implemented by the European Union discriminates against U.S. exports.⁶⁸

Eco-labeling is a good example of the interaction between international trade agreements and private voluntary standards. Operating through the WTO TBT Agreement as standards adopted by an international standardizing body, eco-labeling criteria published by ISO may very well require governments to justify departures from those private, hortatory principles adopted primarily by industry.

ISO standards govern unilateral environmental claims made by manufacturers, known as "type II" labels.⁶⁹ They also address governmentally or privately established schemes that include a single mark, such as the U.S. Government-sponsored, voluntary Energy Star logo for identifying energy-efficient personal computers.⁷⁰ These are known as "type I" labels.⁷¹ "Type III" labels, also governed by an ISO standard,⁷² transmit quantified information in a manner similar to the identification of fat, carbohydrates, and protein on nutrition labels in the United States.⁷³ During the drafting process that led to the adoption of ISO's eco-labeling standards, there was express concern for constraining or "disciplining" the potential abuse of environmental labeling schemes as unjustified barriers to international trade.

As a consequence, according to ISO standards, eco-labels must be "accurate, verifiable, relevant, not misleading,"⁷⁴ and "based on scientific methodology that is sufficiently thorough and comprehensive to support the claim."⁷⁵ Those requirements all sound more than reasonable in the abstract, but each must be understood as a negative discipline. That is, if a label is *not* "relevant," then the label violates the standard and potentially the TBT Agreement as well. These negative tests can be adjudicated by international trade agreement dispute settlement

⁶⁸ See Council Regulation 1980/2000, Revised Community Eco-label Award Scheme, 2000 O.J. (L 237) 1 (EC). See generally European Union Eco-label Home Page, http://ec.europa.eu/environment/ecolabel/index_en.htm (last visited Jan. 29, 2009).

⁶⁹ ISO 14021, *supra* note 11, § 1. Among the claims potentially covered by this Standard are self-declared or self-certified conformance to ISO 14001. *See supra* text accompanying note 25.

⁷⁰ See History of Energy Star, http://www.energystar.gov/index.cfm?c=about.ab_history (last visited Jan. 29, 2009).

⁷¹ ISO 14024, *supra* note 11, § 3.1.

⁷² ISO 14025, *supra* note 11, § 1.

⁷³ See generally Ctr. for Food Safety and Applied Nutrition, Dep't of Health and Human Servs., How to Understand and Use the Nutrition Facts Label 1–3 (2004), http://www.cfsan.fda.gov/~acrobat/foodlab.pdf.

⁷⁴ ISO 14020, *supra* note 11, § 4.2.1.

⁷⁵ Id. § 4.4.1.

bodies.⁷⁶ When applied to a situation such as precautionary labeling, among the least intrusive of regulatory interventions, the situation becomes even more complex in areas such as the evaluation of policy-relevant science that by definition involve a measure of judgment.

C. Life Cycle Assessment

In contrast to the situation with eco-labeling, in which ISO standards act as a "sword" with which one state may challenge another's domestic regulation, this same structure may act as a "shield" in situations in which a state chooses to rely on international standards. A good example of this latter phenomenon is California's new Low-Carbon Fuel Standard (LCFS),⁷⁷ a requirement designed to reduce the carbon intensity—carbon emitted per unit of fuel consumed—of fuels in California by ten percent by the year 2020.⁷⁸

Similar to the approach employed with automobile fuel efficiency requirements on the federal level, the LCFS applies an averaging approach, which means that each provider must meet the reduction target as measured against the totality of the fuels it sells on the California market (as opposed to, say, in each gallon). The LCFS specifies application of a life cycle analysis (LCA) so as to take into account emissions not only from combustion, but also production and transport, of fuels. These factors include emissions associated with extraction, protection of sensitive lands and ecosystems, and a variety of other emissions which, in the case of imported fuels, are physically located in the country of export. Equation 1997.

One of the basic obligations found in international trade agreements is the "national treatment" discipline, specifying non-discrim-

 $^{^{76}}$ E.g. EC—Sardines, supra note 60. See generally Palmeter & Mavroidis, supra note 63 (detailing WTO dispute settlement procedures).

⁷⁷ California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007, Cal. Health & Safety Code §§ 44270–44274.5 (West Supp. 2008); see Cal. Air Resources Bd. & Cal. Energy Comm'n, State Alternative Fuels Plan 78–80 (2007), available at http://www.energy.ca.gov/2007publications/CEC-600-2007-011/CEC-600-2007-011-CMF.PDF.

⁷⁸ David Crane & Brian Prusnek, Office of the Governor of the State of Cal., The Role of a Low Carbon Fuel Standard in Reducing Greenhouse Gas Emissions and Protecting our Economy 1 (Jan. 8, 2007), available at http://gov.ca.gov/pdf/gov/alternativeFuels.pdf.

⁷⁹ See generally TIAX LLC, FULL FUEL CYCLE ASSESSMENT: WELL-TO-WHEELS ENERGY INPUTS, EMISSIONS, AND WATER IMPACTS (2007), available at http://www.energy.ca.gov/2007 publications/CEC-600-2007-004/CEC-600-2007-004-REV.PDF (providing a detailed life cycle analysis under various approaches).

⁸⁰ *Id.* at 73–76.

inatory treatment of imported products by comparison with their domestically produced counterparts.⁸¹ Similarly, the "most-favored nation" discipline requires states of import to refrain from discriminatory treatment among products on the basis of their national origin, as in preferential treatment for Mexican oil by comparison with Saudi oil.⁸² As demonstrated by a well-known dispute involving the U.S. embargo of shrimp harvested in a manner that harms endangered sea turtles,⁸³ so-called "process and production methods" (PPMs)—which regulate how an imported product is produced as opposed to its content—may be suspect from a trade point of view.

ISO standards for life cycle assessment, like those for eco-labeling, are undoubtedly intended to discipline or constrain the potential for abuse. At the same time, the ISO methodology for conducting an LCA is remarkably malleable. In particular, a life cycle assessment that conforms to ISO standards "assesses, in a systematic way, the environmental aspects and impacts of product systems, from raw material acquisition to final disposal, in accordance with the stated goal and scope."84 An ISO-conforming LCA is characterized by "flexibility," 85 "addresses potential environmental impacts,"86 and includes within its scope the "acquisition of raw materials; . . . distribution/transportation; [and] disposal of process wastes and products."87 If ISO standards meet California's regulatory needs, and California chooses to rely upon them in performing the LCA called for by the program, then the same WTO TBT Agreement that transforms ISO standards for eco-labeling into a "sword" could very likely tend to shield California's Low-Carbon Fuel Standard from a trade-based challenge.

Conclusion

By adopting the 14000 series of standards on environmental management, the International Organization for Standardization (ISO) has decisively moved into a major public policy arena, not just in the

⁸¹ General Agreement on Tariffs and Trade art. 3, Oct. 30, 1947, 61 Stat. 18, 55 U.N.T.S. 194, *as incorporated into* Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, *supra* note 50.

⁸² General Agreement on Tariffs and Trade art. I., supra note 81.

⁸³ Panel Report, United States—Sections 7.16 of the Import Prohibition of Certain Shrimp and Shrimp Products, WT/DS58/R (May 15, 1998).

⁸⁴ ISO 14040, *supra* note 12, § 4.3(a).

⁸⁵ Id. § 4.3(g).

⁸⁶ *Id.* § 4.3(i).

⁸⁷ Id. § 5.2.3.

United States but in other countries as well. ISO is an important forum for harmonizing private voluntary initiatives from around the world. The benefits of laying down international minimum standards through ISO are substantial, although there are also significant concerns about the potential impacts of non-binding standards of the ISO variety on public regulation.

Simultaneously with the adoption of ISO's standards on the environment, major new trade agreements that created the World Trade Organization and encouraged the liberalization of trade in North America also addressed measures such as food safety standards and eco-labeling with new international disciplines. By expressly referencing ISO standards, these international trade agreements have created a new category of legal and policy questions. ISO's private voluntary standards can act as ceilings on the rigor of governmentally established requirements, as in the case of eco-labeling, which can be used as swords by one state to challenge the national measures of another. Through the same process, as in the case of life cycle analysis, ISO standards may act as a floor, which in turn can shield national measures from attack by reference to trade-based tests.

Private voluntary standards, such as those published by ISO, do not necessarily fall neatly into the categories of "swords" or "shields," but, indeed, can simultaneously operate as both. For example, ISO standards for life cycle assessment, as they operate through the TBT Agreement, are undoubtedly intended to discipline or constrain the potential for abuse. To that extent, ISO standards operate as a regulatory ceiling, which can be used as "swords" by one state to challenge the national measures of another. But they can equally well insulate life cycle analyses that conform to international standards from trade-based challenges emanating from abroad.

This phenomenon, not to mention its consequences, is seriously underappreciated by many constituencies, including legislators, regulators, agency officials, and the environmental community. As ISO quietly proceeds to move forward with yet another series of standards on social responsibility, we the public may discover only too late that important public policies are affected in a forum that receives little public scrutiny, that is largely inaccessible except to the business community, and that does not necessarily reflect the public interest. There is no doubt but that efforts with significant public policy consequences will continue in ISO, and most likely will expand. What those undertakings mean for efforts to promote environmental sustainability is, however, indeterminate.

During the debate over NAFTA, George Will praised an agreement designed to "propel a free society into an exhilaratingly unknowable future." Rerhaps nowhere is the effect of international trade agreements more "unknowable" than in the effect of international, private, voluntary standards on domestic, mandatory, governmentally established regulation. Whether, a decade and a half after the entry into force of these agreements, this effect on balance is "exhilarating" or the opposite is still an open question.

 $^{^{88}}$ George Will, Judicial Activism Aims at an Impossible Task, Newsday, July 8, 1993, at 102.