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DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
001. list	Contact list re: meeting January 19, 1995 (partial) (1 page)	01/19/1995	P6/b(6)

COLLECTION:

Clinton Presidential Records
Domestic Policy Council
Gaynor McCown (Subject Files)
OA/Box Number: 7330

FOLDER TITLE:

[Regulatory Policy Review] [Binder]

2011-0255-S
rc219

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P1 National Security Classified Information [(a)(1) of the PRA]
P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P3 Release would violate a Federal statute [(a)(3) of the PRA]
P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [a)(5) of the PRA]
P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.
PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).
RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

b(1) National security classified information [(b)(1) of the FOIA]
b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

REGULATORY
POLICY
REVIEW

Withdrawal/Redaction Marker
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Meeting Jan. 19, 1995 - Reg Review

[001]

NAME	PHONE #	FAX	ADDRESS	D.O.B.
Steve Schatken	401-8300	401-5391	600 Ind. Ave S.W.	P6/(b)(6) ✓
DAN CHENOK	395-7316	395-5974	NEOB 10235	✓
Jean Logan	6320334	6320390	750 17th St / NPR	✓
KENNETH TOLO	205-0706	401-3095	DEPT. OF EDUC. RM 5164 600 INDEP. AVE, SW	P6/(b)(6) ✓
Bob Davidson	401-0615	"	"	✓
Jamie Studley	401-6000 401-5982	401-5391	600 indep Ave SW DC 20202	✓
Maureen McLaughlin	708-5547	708-9817	7th & D Streets SW Rm 4082	P6/(b)(6) ✓
David ~~Levine~~	5-4597	5-6853	cea	
LISA FAIRHALL	5 7766	5 4875	OMB	
Paul Dimond	456-5368	456-2223	NEC	

John Norvell

IDEAS

REGULATORY POLICY REVIEW

- Contents -

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Divider Title: **A**

December 19, 1994

MEMORANDUM FOR THE REGULATORY POLICY ADVISORS TO THE PRESIDENT

SUBJECT: ATTACHED MATERIALS TO ASSIST IN PLANNING FOR THE REGULATORY REVIEW SESSIONS

To assist you in preparing for the twice-weekly sessions with the Vice President on regulatory issues, my NPR staff has assembled this notebook of materials.

- A set of guiding principles that I believe sets an appropriate framework for the effort.
- A memorandum to stimulate your thinking as you seek bold new ideas.
- A worksheet (with accompanying explanation) that sets out various alternative regulatory approaches (ranging from most to least intrusive). The purpose of the worksheet is to allow you to compare the regulatory programs under your purview according to the spectrum of alternative approaches.
- A brief description of an exciting new NPR initiative (REGnet) which is designed to build a comprehensive and user-friendly on-line regulatory information system.
- The indices and tables of contents for *Regulation* magazine, from 1977 to 1994.

It is my hope and expectation that as the meetings are scheduled, we will be able to provide you with helpful, relevant ideas in your respective areas.

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Divider Title: **B**

Mtg w/ VP Monday, Nov. 28 [illegible]
OEOB - ceremonial office -

[illegible] staff:
is related to the virtual dept of business, state/ et al.
B.

OFFICE OF THE VICE PRESIDENT
WASHINGTON

November 17, 1994

MEMORANDUM FOR THE REGULATORY POLICY ADVISORS TO THE PRESIDENT

FROM: THE VICE PRESIDENT

SUBJECT: REGULATORY REFORM

In the months since the President charged us with implementing his Executive Order on regulatory planning and review, we have made great progress in bringing a new sense of accountability and order to the regulatory review process. It is now time to take the next steps and develop for the President options for further reforms in the regulatory area.

Set forth below is a process by which I suggest we undertake to develop these various options. The process will focus on a series of "regulatory policy reviews" in which we can explore innovative approaches to achieve regulatory objectives in cost-effective and reasonable manners. These reviews will examine -- with the help of innovative and interesting thinkers and experts -- a variety of sectoral and cross-cutting issues so to enable us to make well-considered recommendations to the President early next year.

In addition, there are several issues closely related to the regulatory issues noted below which, as you know, have already been the object of excellent work by several White House offices. I refer to risk, takings and unfunded mandates. These issues should be considered in a coordinated, but expedited, manner by the same group that will look at the broader regulatory agenda. To that end, I propose that the Regulatory Policy Advisors also coordinate (through an inter-office process) the development of options to address these issues. Specifically, I propose that, over the next three weeks, the DPC and OEP lead a review of the takings issue, OIRA and OSTP take the lead on risk, and the DPC coordinate the development of a proposed response to the unfunded mandates issue. Ideally, these offices would prepare recommendations to be considered by the Regulatory Advisors on or before December 12, 1994. We would then forward a decision memorandum to the President.

For the remaining regulatory-related issues, I suggest the following schedule:

November - December 1994

During this period, we will discuss with affected agency heads and each other the format and process for regulatory policy reviews. We will also finalize a schedule for the policy review sessions.

December 1994 - February 1995

During this period, we will conduct the review sessions. Each review session will be organized by the relevant White House office. I will co-chair the sessions with the head of the office that organizes the session. My office will coordinate the overall schedule of the sessions and provide additional assistance as necessary.

Subject to our further discussion, suggested topics and leaders for the review sessions would include:

- General regulatory and cross-cutting regulatory issues -- OIRA
- Environment, energy and other natural resources -- OEP
- Financial institutions -- NEC and CEA
- Small business regulation -- CEA
- Information technology -- OSTP
- Customer service in the regulatory environment -- OVP
- Food and drug -- DPC
- Health industry regulation -- DPC
- Transportation -- NEC
- Equal opportunity -- White House Counsel
- Workplace safety and labor issues -- DPC
- Agriculture -- NEC

February - March 1995

At the end of the review process, the Regulatory Advisors will hold a series of meetings to determine (after appropriate consultation with affected agency heads) which of the options developed during the first phase should be presented to the President. The proposals chosen will then be drafted by the relevant policy office. These drafts will form the basis of the options memorandum to the President.

March 1995

Present options memorandum to the President.

* * *

Please review these proposed assignments (which I assume we will need to modify) and schedule and be prepared to discuss it at a meeting on the Regulatory Policy Advisors, which we will convene shortly.

Please feel free to contact Jack Quinn if you have any questions regarding the process outlined above or the meeting itself.

Distribution:
The Director of the Office of Management and Budget Alice
The Chair of the Council of Economic Advisors Laura Tyson
The Assistant to the President for Science and Technology Jack Gibb.
✓The Assistant to the President and Chief of Staff to the Vice President Jack Q
The Assistant to the President and Counsel Ab Mikva
The Assistant to the President for Domestic Policy Carol
The Assistant to the President for Intergovernmental Affairs Marsha Hale
The Assistant to the President for Economic Policy Bob R
The Assistant to the President for National Security Tony Lake
The Assistant to the President and Staff Secretary John Podesta
The Deputy Assistant to the President and Director of the Office of Environmental Policy Katie McGinty
The Administrator of the Office of Information and Regulatory Affairs Sally Katzen

Phone & E-mail

OFFICE OF THE VICE PRESIDENT
WASHINGTON

January 4, 1995

MEMORANDUM FOR THE REGULATORY POLICY ADVISORS TO THE PRESIDENT

DIRECTOR OF THE OFFICE OF MANAGEMENT AND BUDGET
CHAIR OF THE COUNCIL OF ECONOMIC ADVISORS
ASSISTANT TO THE PRESIDENT FOR SCIENCE AND TECHNOLOGY
ASSISTANT TO THE PRESIDENT AND CHIEF OF STAFF TO THE VICE PRESIDENT
ASSISTANT TO THE PRESIDENT AND COUNSEL
ASSISTANT TO THE PRESIDENT FOR DOMESTIC POLICY
ASSISTANT TO THE PRESIDENT FOR INTERGOVERNMENTAL AFFAIRS
ASSISTANT TO THE PRESIDENT FOR ECONOMIC POLICY
ASSISTANT TO THE PRESIDENT FOR NATIONAL SECURITY
ASSISTANT TO THE PRESIDENT AND STAFF SECRETARY
DEPUTY ASSISTANT TO THE PRESIDENT AND DIRECTOR OF THE OFFICE OF ENVIRONMENTAL POLICY
ADMINISTRATOR OF THE OFFICE OF INFORMATION AND REGULATORY AFFAIRS

FROM: ELAINE KAMARCK

SUBJECT: REGULATORY REFORM

The Vice President will hold the next regulatory review session on Thursday, January 5 in the Ceremonial Office from 4 pm - 6 pm.

At the January 5th meeting we will address the remaining cross-cutting issues and the takings strategy. As time allows, we will take up the issues of customer service and the use of information technology in the regulatory arena.

A tentative schedule for the rest of the meetings was distributed with the last meeting announcement -- however, due to the complexity of these issues and the large number of individuals and offices involved, this schedule will need to be modified.

It is important that we address important aspects of regulation which might not have been indicated on our earlier listings (ADA, for example). I need your help in ensuring that we're as comprehensive as possible, and that we all know who the lead will be on each subtopic. So, looking at the old schedule, please identify more specifically what subtopics you think fall under the sector headings, as well as who you think should be taking the lead. Please send your suggestions to Jean Logan at NPR. Her fax number is 632-0390.

In seeking bold ideas, we need to speak to experts outside of the federal government. As you know, the Vice President has spoken publicly on several occasions about revamping the regulatory process. In preparing for these meetings, you should feel free to contact people outside this process to seek advice and input. However, the discussions with the Vice President and the ideas presented to him should remain in confidence.

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Divider Title: **C**

PROPOSED MEETING SCHEDULE

1/5/95 (version 2)

*	December 21 (Wed.)	Cross-cutting issues & general approaches	OIRA
[1.]	January 3 (Tues.)	No meeting	[ ]
2.	January 5 (Thurs.)	Takings, remaining cross-cutting issues, and, as time allows, customer service & use of information technology in regulation	OIRA; OVP
[3.]	January 10 (Tues.)	No meeting	[ ]
4.	January 12 (Thurs.)	Customer service & use of info. tech. in regulation	OVP
5.	January 17 (Tues.)	Financial institutions	NEC & CEA
6.	January 19 (Thurs.)	Environment, energy, and other natural resources	OEP
7.	January 24 (Tues.)	Small business	OIRA
[8.]	January 26 (Thurs.)	TBA	[ ]
9.	January 31 (Tues.)	Food and drugs, and consumer product safety	DPC/CEA (?)
10.	February 2 (Thurs.)	Health industry regulation	DPC
11.	February 7 (Tues.)	Workplace safety, education, and labor issues	DPC
12.	February 9 (Thurs.)	Equal employment opportunity	WH Counsel
13.	February 14 (Tues.)	Regulation of science, technology, and info.tech.	OSTP
[14.]	February 16 (Thurs.)	TBA	[ ]
15.	February 21 (Tues.)	Customer and info.tech. issues summary	OVP
[16.]	February 23 (Thurs.)	TBA	[ ]
[17.]	February 28 (Tues.)	TBA	[ ]
18.	March 1 (Wed.)	Reprise	[ ]

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Divider Title: **D**

GUIDING PRINCIPLES

WE WILL MOVE FROM GOOD INTENTIONS, TO GOOD REGULATIONS, by encouraging participation, by simplifying the process and the resulting regulations, and by adopting a new strategy to ensure that national interests are protected.

We will:

1. adopt a customer service orientation
2. seek input and involvement from all interested parties
3. fairly balance competing interests
4. consider whether direct federal involvement is necessary
5. use innovative approaches such as market mechanisms
6. use consensual decision making where possible
7. write regulations that are simple, clear and understandable
8. coordinate to avoid duplication and inconsistency
9. interpret and enforce regulations in a reasonable way
10. measure results to check our effectiveness

And we will take advantage of information technology everywhere we can to meet these goals.

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Divider Title: E

Guidance for Regulatory Policy Reviews

The Focus of the Policy Reviews. The Regulatory Policy Reviews will focus on alternative forms of regulation and alternatives to regulation. We are not trying to change the goals of regulation, such as increased worker safety, improved markets, or environmental restoration.

As guiding principles, we should consider (1) how our present goals can be furthered, using (2) regulatory or other actions that are less intrusive in the day-to-day activities of the public and private sectors. We should also (3) bring a customer service perspective* to regulatory activities.

Background and Scope of the Reviews. The term "regulation" covers a broad range of governmental activity, from the regulatory structure that evolved to create and protect the American aviation industry to the Consumer Product Safety Commission's mandate to put the striker surface on the back of matchbooks. Most laws are implemented through regulation, and most of these are not solely the province of the independent regulatory agencies, such as FTC, CFTC, SEC, FCC, etc. In fact, the term "regulation" is no more descriptive than the term "program" today.

Regulations are only one way government attempts to change behavior -- largely the behavior of organizations, especially businesses; individual behavior is more often channeled by civil and criminal law. Violators of regulations may incur civil penalties, however, just like defendants in civil law suits. Regulations may be used to mandate desired behavior based upon a variety of rationales, including (1) science, as in EPA's Clean Air Act Amendments; (2) good practice, as in OSHA's rules to minimize workplace accidents; (3) perceived market imperfections (the need for a "level playing field," hence the SEC's disclosure requirements for corporations).

Much regulation, however, is aimed not at business, but at state and local governments and third party service providers as part of creating systems through which all parties will act in concert to achieve mutual goals, often in the social services arena. While these regulations do impose costs on the intermediary parties, they are not the primary subject of the Regulatory Policy Reviews. The Reviews will be focused on regulations as they affect industry and commerce in America. Regulation that affects the private sector is often thought of as economic regulation on the one hand, and health and safety regulation on the other. The Policy Review will consider both economic and health and safety regulation.

---

* A customer perspective will require us to look at how we might increase the involvement of industries and individual plants with the Federal government, in both the development and enforcement of regulations. We must also look at how government and industry can create partnerships that lead to safer workplaces, a cleaner environment, etc. See "Customer Service in Regulation," below.

Outside the Box but On the Table. Bold new ideas on how better to achieve our goals are welcome from any source. As we look for alternatives to existing regulatory structures, however, it is highly probable that the new approaches will be found among known governmental interventions. These are the interventions that are "on the table." Proposing to change approaches to a constant goal is thinking "outside the box."

Worker safety example: For most of us, replacing a command and control approach to worker safety (OSHA) with an insurance approach now would be as unthinkable as supplementing an administrative law approach (workmans compensation) with a command and control approach when OSHA was created, or supplementing the civil law of negligence with workmans compensation when that was tried. Yet any of these four approaches (command and control, insurance, administrative law, or civil tort) may be the appropriate choice for reaching our goals today.

The Government's Tools. Government's means of changing societal outcomes include the police powers, the criminal law, the civil law, government ownership, command and control regulation (i. e., process requirements), insurance-based regulation, market-based incentives, regulation of market conditions, information dissemination, education, and the bully pulpit. Those that are relevant to the Regulatory Policy Review are arrayed in more detail in the Regulatory Options Outline (ROO) in this binder.

Look first at the ROO and its accompanying worksheet. The approaches are arrayed in decreasing order of intrusiveness. Try to fit a less intrusive approach to the regulatory goals and systems you are reviewing. Obviously, if the same goals can be achieved through a less intrusive approach, the goals and the approach will be greeted more warmly by all concerned. Similarly, an enforcement approach that does not require large numbers of Federal employees is more than welcome.

Four other factors are important to our regulatory review. Any new solutions must be constitutional, they must be politically acceptable, they must be administratively feasible, and they must be reliable. Confiscating a chemical plant for impermissible emissions is neither legally nor politically acceptable today, although confiscating a car used in a drug offense is. Inspecting each workplace only once in every 20 years is neither a feasible nor a reliable way to protect workers. These four factors change and evolve over time. The political climate, our experience with existing programs, and our basic knowledge are all different in 1994 from what they were in 1964, or in 1934.

A Closer Look (I). One way of analyzing a regulatory structure is to examine (1) the <u>science</u> used to determine the action required, (2) the <u>standard</u> developed to meet the goal established by the science, (3) the <u>approach</u> taken to achieve the standard, and (4) the <u>enforcement practices</u> used to monitor compliance with the approach, and trigger further action if needed. Obviously, standards can be developed using good practice or the goal of more perfect markets as well as science.

- **Example: Asbestos**. For example, science has shown that asbestos causes lung damage and cancer (mesothelioma) in humans. Asbestos was banned except where no substitute was available, and standards of exposure were developed for its use and for its removal from buildings and ships. Detailed rules on the use, capture, and removal of asbestos were developed, and are enforced via workplace inspection as a part of a command and control regulatory approach.

  Most of the debate about regulations centers on the approach taken and the resulting enforcement actions. Less attention is paid to the standards, and still less to the underlying science. Asbestos exposure could have been controlled by a set of voluntary industry standards or the creation of a specific civil action -- a tort -- to be enforced in the courts upon petition by an injured party. The underlying science remains unchallenged: Hippocrates noted that asbestos miners died young over 2000 years ago, and Dr. Kenneth Lynch linked asbestos to mesothelioma in 1938.

A Closer Look (II). A further level of analysis can aid the development of new solutions. Take the creation of a tort as an example of an intervention or approach. A tort assumes a standard of behavior. A tort also contains a price for a violation, a pricing system for risk (risk of being caught, risk of being found guilty), and a bounty system for enforcement -- the plaintiff's right of action and potential judgment.

Every viable approach must have (1) a clear standard that potential violators have access to, (2) a way of complying, (3) a reward or penalty structure, and (4) a means of enforcing the reward or penalty.

- **Example: Control Trading**. During the 1970's EPA created "control trading." If one firm can decrease a controlled emission from a plant to a level below a set standard, that firm can sell the "right to pollute" with that emission to another plant within a defined geographic territory. This regulatory concept offers an enormous advantage over a simple "command and control" structure. Under control trading, firms have an economic incentive to innovate, to finding newer, better, cheaper ways to reduce emissions. Simple command and control structures "freeze" whole industries into compliance with a static standard. Control trading offers a way of complying that includes incentives to innovate.

- **Example: Public Disclosure**. Several years ago EPA put out a regulation that distinguishes between a penalty for non-compliance with the regulation and a penalty for non-compliance with good environmental practice. Firms are required to publish a list of chemicals they release into the environment, by location. There is a penalty for non-compliance, of course, but the real penalty will be imposed by the neighbors or customers of the plant and firm in response to the published list.

Information Exchange. Of all the government approaches to effecting behavior change, command and control regulation is by far the most information intensive. Once having chosen to enforce detailed regulations directly, the government must provide great quantities of information about what is required, and must in turn inspect and report in detail the results of the inspections. A great deal of the friction between the government regulators and the industries that are regulated is exactly that: friction. Activity that is peripheral to the goals of regulation. Filling out forms does not provide clean air or a safe workplace. Filling out forms is just filling out forms, and it is expensive.

One overarching objective of the Regulatory Policy Review should be to gain recognition of the high costs of information exchange inherent in command and control regulation. Then, as in so many other areas, we need to bring the power of information technology to bear on minimizing the costs of the information exchange where it cannot be reduced. There are a number of efforts underway, both within government and without, to automate parts of this information exchange. They have been brought together for discussion by the National Performance Review's REGnet project. If properly integrated and implemented, they offer the potential for a "virtual department of regulation," or indeed a "virtual department of DuPont," parallel to the virtual departments of social services and of Mary Washington envisioned by the Vice President during the National Performance Review.

Consensual Development, Compliance, & Enforcement. We need to explore more consensual development, compliance, & enforcement of regulations. At the front end, we need to find ways to encourage collaboration between industry and government in the development of most regulatory schemas. These should include, but not be limited to, regulatory negotiation, or "reg-neg."

At the compliance and enforcement end, we must learn from the experience of other nations having a less confrontational relationship between government and industry; we should consider changing the models of compliance and enforcement. As James Q. Wilson says in Bureaucracy, "There was no clear relationship between how each nation [Great Britain, Germany, France, Japan, and America] managed its regulatory process and the laws it enforced or the results it achieved; the consensual European [and Japanese] administrative practices essentially served the same goals and produced the same outcomes as the adversarial American practices." (p. 297) Wilson also quotes the results of a study by Steven Kelman of America's OSHA and Sweden's Arbetarskyddsverket (Worker Protection Board): "As far as Kelman could tell, the informal and cooperative Swedish system produced a level of compliance with safety and health rules that was as high or higher than that achieved by the formal and punitive American system." (p. 296)

The distinction between the two models is best captured in the distinction between a management consultant and an inspector general. It is much easier to be an inspector general: there are defined rules to be obeyed, and if we catch you violating them there will be hell to pay. A management consultant has far fewer defined rules: the job is to increase the organization's efficiency and effectiveness, the health and safety of its employees, neighbors, and customers. A far different set of skills and a more extensive knowledge base are required for the management consultant role. We need to explore this model.

The Other Path. The alternative to a less confrontational model is the development of a more confrontational model, eventually absorbing all the trappings of the criminal justice system, and involving an ever-increasing number of lawyers. The courts adjudicating cases involving regulation are already pushing the regulatory system in this direction, and the "Citizens' Bill of Rights" in the Job Creation and Wage Enhancement Act (in the Contract with America) shows where this approach leads.

Customer Service in Regulation. The concept of "customers" in the regulatory environment may seem foreign. Information exchange and consensual development and enforcement, as outlined above, are examples of the customer service perspective. This orientation does not mean asking industry what needs to be regulated. It does, however, mean looking at the entire regulatory structure from the viewpoint of the "user" -- the regulated firm. It also means seeking input and involvement, ensuring consistency, using consensual decision making where possible, providing ready access to information, and measuring all effects of regulating. There are, of course, many customers to consider, including the affected industries, their employees and customers, and members of the public.

Regulation and Complex Systems. Lastly, we must be aware that whatever the past governmental approach to changing industry behavior, industry and other behavior will have been changed by it. Often the changes elicited have not been the changes anticipated. We do not regularly send out "regulation evaluators" to see what the unanticipated consequences of our actions are. We do know that regulation -- any government intervention -- changes the way "the system" works: not least in terms of generating opposition to what should be commonly held goals, such as safer workplaces, healthier Americans, and more perfect markets.

Be bold. Our task during the next few weeks is to propose and discuss many changes -- including radical changes -- in the ways America seeks to achieve our economic and health and safety goals. We have been challenged to look "outside the box" and "off the table" for the best alternatives. Later there will be time to weigh their relative advantages and disadvantages, their possible unintended consequences. We will need to consider what changes our new approaches might bring to the system.

Coda. Government is an artifact; it is designed by human beings. In the Regulatory Policy Reviews we are attempting to redesign government. The challenge and the responsibility are great, as is the need.

"We are as gods, and might as well get good at it." -- Stewart Brand (1968)

December 20, 1994

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WORKSHEET

ALTERNATIVE APPROACHES	CONSIDERATIONS			
(From most to least intrusive)	Advantages	Disadvantages	Resource needs	Compliance methods
1. Gov't ownership/mgmt.				
2. Command & Control				
3. Market-based incentives				
a. allocation of non-salable rights				
i. right-of-way authorizations				
ii. export restrictions				
iii. input requirements				
b. allocation of marketable rights				
i. controlled trading				
c. performance standards				
i. some flexibility in methods				
ii. full flexibility in methods				
d. negative economic incentives				
i. externality taxes (green fees)				
4. Insurance-based				
a. insurance requirements				
i. require particip. in gov't-run				
ii. require private insurance				
b. indemnity requirements				
i. bonding, escrow, rest. funds				
5. Voluntary self-regulation				
a. licensure boards				
b. non-governmental standards				
i. adopted & enforced by gov't				
ii. self-enforced by industry				
6. Common-law				
a. strict liability				
b. product liability				
c. negligence				
d. nuisance				
e. trespass				
7. Deregulation				
a. creating perfect competition				
i. antitrust regulations				
ii. disclosure reqs (education)				
b. devolution to states & locals				
c. total deregulation				
8. Positive incentives				
a. tax credits				
b. procurement				
c. loans & grants				
9. Privatization				

12/18/94

WORKSHEET INSTRUCTIONS

> "Intelligent coordination between policy-making and enforcement is, of course, essential in the business of regulating industrial enterprise"
>
> -- James M. Landis (adviser to President Kennedy on administrative reform, and Dean of Harvard Law School), *The Administrative Process* (1938).

Alternative approaches to regulation are arrayed in the worksheet in decreasing order of intrusiveness. The advantages and disadvantages of the different approaches will vary from sector to sector. Consider the relative merits of the various alternatives, and try to fit a less intrusive approach to the regulatory goals and systems that you are reviewing. Obviously, if the same goals can be achieved through a less intrusive approach, the goals and the approach will be treated more warmly by all concerned.

Similarly, an approach that does not require large numbers of Federal employees is more than welcome. For example, consider the differences between direct federal regulation, regulation though an intermediary (e.g., the stock exchange) and other forms of audited self-regulation. Identify the resource needs that various options might entail, including, for example, the question of whether the approach would require personnel with special training or professional skills (such as environmental auditors).

Also consider the compliance methods appropriate for various options. Historically, methods of ensuring compliance have included a range of civil penalties (e.g., license revocation, product seizure, injunctions, tripling damage claims), as well as criminal penalties. However, these penalties do not represent the full scope of possibilities -- in 1938, James Landis wrote of the "usefulness of mere publicity" as a means of directing behavior. Publicity is a tool that can serve as both a "carrot" or a "stick" (contrast the "Good Housekeeping Seal of Approval" with Nathaniel Hawthorne's "Scarlet Letter"). List new ideas in this column.

We do not claim that the spectrum of alternatives is all-inclusive; all ideas are encouraged and welcomed. The worksheet is only intended as a tool for organizing and ordering our thoughts as we fashion new and bold approaches.

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REGULATORY OPTIONS OUTLINE

I. Stephen Breyer, "Analyzing Regulatory Failure," ***Harvard Law Review*** **(1979)**

1. Regulated markets policed by antitrust
2. Disclosure regulation
   like antitrust, helps achieve a more competitive market (e.g., print alcohol content on alcoholic beverage containers; might also require printing info. on environmental damage incurred in the production, disposal processes, in order to help inform consumer choice)
3. Taxes (e.g. -- excise taxes, or pollution taxes)
4. Market-based incentives or allocation
   e.g. -- establish a limited number of rights to engaging in a particular activity (like airport landing slots), then allow these rights to be bought and sold on the free market ("though the system originated to deal with pollution, it might be used whenever it is desired to limit artificially the amount of a certain activity" -- Stephen Breyer, p. 582)
5. Bargaining (this is a process issue, relating to how a regulation is decided upon -- not the form of the final regulation; e.g. -- bargaining in the process of writing the regulation, tailoring rules to special needs in order to make the regulation sensible, voluntary compliance more likely
6. Changes in liability rules
   change tort laws in order to increase the risk of liability
7. Nationalization
   eliminates the adversary relationship between regulator and firm (or so intended, e.g., as in old-style Eastern Europe)

II. Michael S. Baram, ***Alternatives to Regulation*** **(1982)**

1. Common-Law Alternatives
   - A. Negligence
   - B. Product Liability
   - C. Strict Liability
   - D. Nuisance
   - E. Trespass
2. Private, Voluntary Self-Regulation
   - A. Industrial Self-Regulation
   - B. Licensure and Certification
3. Insurance and other Compensatory Plans
   - A. Workers' Compensation
   - B. Government-subsidized Insurance
   - C. Bonding, Escrow, and Restoration Funds
4. Government Influence
   - A. Government Procurement
   - B. Government Information & Publicity
   - C. Advance Notice of Intent to Regulate

III. James M. Landis, Dean of Harvard Law School, *The Administrative Process* (1938)

1. Approaches
    - A. Torts
    - B. Licensing power; permits
    - C. Standards
    - D. "Government as a source of credit, as a source of supply, as a consumer" (e.g., procurement, other positive incentives)
    - E. Taxation
    - F. Government ownership, management
2. Enforcement mechanisms
    - A. Criminal penalty
    - B. Civil penalty
    - C. Resort to injunctive side of equity
    - D. Tripling of damage claims
    - E. Informer's share
    - F. Publicity as a means of coercing action
    - G. License as a condition of pursuing certain conduct
    - H. Confiscation of offending property

IV. David Koplow, *Federal Energy Subsidies* (1993)

1. Tax Subsidies
    - A. tax credits (allows proportion of expenditures to be deducted from taxes owed)
    - B. reductions in the tax rate
        - i. activities exempt from taxation
        - ii. entities exempt from taxation
    - C. reductions in the tax basis
        - i. timing
        - ii. amount
    - D. altering the taxable entity
        - i. exceptions to general rules of taxation
        - ii. shifting profits in a vertically-integrated corporation
2. Federal agency activities
    - A. federal grants
    - B. loans, loan guarantees, and premium-financed insurance programs
    - C. federal R&D
    - D. federal market planning (strategic petrol. reserve)
    - E. direct federal ownership of assets or of service operations (PMA's)
    - F. administration and regulatory costs
3. Other interventions
    - A. assumption of legal risks, indemnifications (Price-Anderson Act) -- as applied to regulations, includes implicit absorption of legal risks by allowing private operators to underaccrue for expected future events (underaccrual for nuclear decommissioning costs; cap on nuclear accident liability)

- B. changes in market. rules via price regulation, or restrictions on supply- or demand-side alternatives
    - i. price (old petrol. price controls)
    - ii. supply-side
        - (mkt intervention affecting the type, amount or timing of supplies via direct ownership of resources or production capacity, licensing and right-of-way authorizations, export restrictions, and requirements to use (or not use) certain production inputs [transmission and highway rights-of-way, Jones Act restrictions on foreign shipping vessels)
    - iii. demand-side
        - (import restrictions; required purchase of particular energy services import restrictions on oil and uranium)
- C. federal procurement of energy services for internal use
    - i. fed. procurement preference for alternative-fueled vehicles

V. Kenneth Meier, *Regulation: Politics, Bureaucracy & Economics* (1985)

1. Antitrust action
2. Command & Control mechanisms
3. Incentive systems
    - A. tax system
    - B. smokestack emission tax (A.C. Pigou, 1930s)
    - C. injury tax as alternative to OSHA safety regulation (Rob't Smith, 1974)
    - D. taxes on water pollutants (Dales, 1968)
    - E. EPA's bubble, offset, and bankable emissions policies (Hahn & Noll, 1982)
4. Nontax incentive systems
    - A. bargaining
    - B. information
        - i. product information
        - ii. insurance
        - iii. bonds
    - C. liability law
        - i. can work in worker safety cases, hazardous product cases, defective goods, environmental damage, etc.
    - D. private insurance
        - i. strict liability

VI. Domestic Council Group on Regulatory Reform, *The Challenge of Regulatory Reform: A Report to the President* (January 1977)

1. Government-run operations (direct services, e.g. hospitals to care for disabled veterans)
2. Positive incentives
    - A. direct financial assistance
    - B. tax credits and exemptions

    - C. special credit treatment
    - D. allocation of federal procurement
- 3. Assorted means
    - A. setting or approving prices, fares, profits, interest rates, or wages
    - B. awarding licenses, franchises, certificates or permits
    - C. establishing and enforcing standards of behavior such as worker safety rules, requirements for disclosure of financial information, and prohibitions of discrimination
    - D. control of market behavior
    - E. standards imposed on production processes
    - F. quality control standards
- 4. In some areas, gov't relies on private action (lawsuits) to enforce federal law (e.g. Robinson-Patnam Act -- antitrust)

VII. Lawrence White, *Reforming Regulation: Processes and Problems* (1981)

- 1. Gov't-run
- 2. Common law (regs. enforced by private action)
    - e.g. clearly define property rights in air and water to create openings for private litigation
- 3. Approaches that rely more on economic incentives
    - A. performance standards, not design standards
    - B. alternatives to direct controls and standards
    - C. charge effluent fees to polluters
    - D. auction off rights to produce pollutants
    - E. the fee (or taxation) approach "could be extended to other kinds of social regulation. Fee schedules could be used to encourage firms to achieve safer workplaces and safer products" (p. 42)

VIII. OECD, PUMA Public Management Occasional Papers, "Market-Type Mechanisms Series," No. 1 (Paris, 1992)

- 1. Traditional public delivery
- 2. Market-type mechanisms
    - A. voucher-like instruments in social policy fields
    - B. contracting out in information technology
    - C. non-price competition in and between hospitals
    - D. property rights modifications in the fisheries
    - E. internal markets in the provision of services to central administrations
    - F. tradeable rights in pollution control
- 3. Market-based Instruments
    - A. user charges
    - B. contracting out
    - C. vouchers and their equivalents
    - D. creation or modification of property rights

        (e.g. -- in fisheries, environmental protection, and telecommunications)
    E. internal pricing
    F. inter-governmental contracts
    G. intra-governmental and non-price competition
4. Levels of government involvement
    A. government service
    B. government vending
    C. intra-governmental agreement
    D. contract
    E. franchise
    F. grant
    G. voucher
    H. market
    I. voluntary
    J. self-service
5. Complete privatization

IX. Michael Kellogg, *Regulation* article (1994)

1. Free market
2. Market-based
3. Command & Control

X. Pres. Carter's U.S. Reg. Council's "Inventory of Innovative Techniques" (1980)

1. Enhance Competition
    achieve regulatory goal through increasing its sensitivity to market forces (e.g. removing barriers to competition)
2. Marketable Rights
    A. in place of detailed government controls, agency limits private-sector rights to engage in a specific activity or to use scarce resources, and allows private parties to exchange, trade, or sell these rights (agency maintains overall control while allowing affected parties to arrange the allocation of rights in the free market); in the case of radio spectrum allocation, options might include: (p. 11)
        i. free sale and transfer of allocations
        ii. auction of spectrum assignments
        iii. imposition of spectrum fees
    B. marketable permits for CFC production (total permits based on total acceptable amount, based on atmospheric concentration calculations), in which producers receive permits initially either by allocation or by auction; *continuous incentive* to reduce emissions since they could sell any such reduction to other firms for profit (or, could produce more widgets) (p. 12)
    C. if a geographic area does not meet air quality standards, do not disallow new plants; rather, allow new sources of air pollution to locate there *if* they pay or persuade existing sources of pollution to reduce their emissions -- a process of "controlled trading" (p. 14)

    - D. urban demonstration grants to foster "controlled trading", other innovative approaches; such as Boston's "offset banking and trading" and Minneapolis' "emission-density zoning"; also, "redesigned industrial siting policies, emission offset information clearinghouses, unified permit systems" (p. 14)

3. Economic Incentives

    the agency provides economic incentives that are supplements or alternatives to government standards and regulations by structuring fees or subsidies to encourage the private sector to achieve regulatory goals. Incentives replace rigidly enforced regulatory standards.

    - A. "essential air service subsidy" concentrates on commuter carriers, as opposed to major carriers, since these planes are smaller and better suited (p. 13)
    - B. simplify requirements and procedures for licensing applications of energy production methods that are environmentally "clean" (p. 13)
    - C. "Offset Banking Permits, Controlled Trades Over Time"

        companies which reduce emissions below the level required by law can "bank" such reductions for their own future expansion, or for selling to new sources in "offset transactions," or for cost-saving internal changes in pollution control under the "Bubble policy" (p. 16)
    - D. incentives for companies to reduce oil and gas consumption: a trust fund, funded and administered primarily by industry, would be the source of grants and loans for companies to install energy-saving techniques, do energy audits with the fed. gov't sharing half the cost, and undertake R&D activities (p. 17)
    - E. "Buy Quiet" program encourages gov't purchasing agencies to buy quieter products as such, create a market for these products w/out mandating the production of these products by law (p. 18)
    - F. set fines for noncompliance equal to the amount saved by not complying, including capital, interest, operation and maintenance savings (pp. 19, 40)
    - G. pricing -- Fed. Energy Regulatory Commission [FERC] programs aimed at achieving efficient allocation of natural gas when demand exceeds supply:
        - i. incremental price curtailment program which specifies that the high costs of new gas supplies be allocated to industrial users up to the price of alternative and more abundant fuels. (p. 20)

4. Performance Standards

    the agency replaces design standards which specify strict means of compliance with more general standards based on overall performance levels. Firms or businesses are free to find the most efficient way of complying with the standards.

    - A. Concepts
        - i. controlled trading
        - ii. bubble concept
    - B. Examples
        - i. EPA's consideration of flexibility for auto manufacturers to meet emissions standards
            - a) one requirement: all heavy-duty emissions for manufacturers remain at or below a specified fleet-wide average

        - b) allow some heavy-duty vehicle engines to exceed mandated fleet averages, so long as the overall average is not exceeded for the entire heavy-duty fleet (gives manufacturers flexibility to adopt least-cost control strategies by reducing emissions more on engines where control is cheapest) (p. 23)
      - ii. OSHA -- used to require fire extinguishers at specific heights and placements; now requires them to be accessible, but gives firms several ways of providing this accessibility (p. 23)
      - iii. DOT -- permit manufacturers to accrue fuel-economy "credits" for a three-year period (either retroactively or in future models), permitting manufacturers to make engineering changes more efficiently without sacrificing ultimate gains in fuel economy -- gives the manufacturer the discretion to fall below the average if improvement would be excessively costly -- as long as other models exceed the required standards (p.24)
      - iv. EPA application of "bubble concept" (one of a series of "controlled trading" steps designed to reduce pollution control costs while simulating technological innovation. allows existing sources of air pollution to propose alternative mixes of controls that would achieve the required emissions reductions at lower cost; firms have the flexibility to relax controls at emission points with high control costs, in exchange for extra controls on emission points with low control costs, so long as the overall impact on air quality remains the same (p. 24)

5. Information Disclosure

   agency requires that users or consumers be provided with information necessary to help them make informed choices among competing goods and services and be free to choose on the basis of that information. The agency may provide information directly to the public

   - A. Federal Trade Commission requires eye doctors to provide consumers with copies of their prescriptions, so that they may shop comparatively for glasses (p. 26)
   - B. prohibitions against advertising by doctors (p. 26)
   - C. requirements that doctors disclose financial interests in laboratories
   - D. Truth-in-Lending program (Federal Reserve Board) which requires financial institutions to provide clear disclosure of credit terms to consumers
   - E. Commodities Futures Trading Commission operates a toll-free consumer hotline with information on registration status and enforcement record of commodity professionals (p. 29)
   - F. regulation by Bureau of Alcohol, Tobacco and Firearms requiring label on alcoholic beverage containers alerting the public to the risks of alcohol consumption by pregnant women (p. 30)

6. Voluntary Standard Setting

   agency supplements or substitutes direct federal regulation with voluntary standards developed and enforced by the regulated sectors

   - A. Examples

- i. NRC accepted voluntary standards in regulating medical use of radio isotopes (p. 32)
- ii. EPA encourages voluntary labeling of products emitting noise capable of adversely affecting public health (p. 33)
- iii. FDA involved in the development, support, endorsement, and use of voluntary performance standards for medical devices, while reserving the right to issue mandatory standards when necessary. Policy encourages manufacturers, voluntary standards organizations, and others to develop performance standards, which FDA then evaluates, and endorses those which are found to be adequate. (p. 33)
- iv. Consumer Product Safety Commission implemented voluntary approach to reduce furniture fires -- considered imposing a mandatory flammability standard, but industry pretested that it would add substantially to manufacturing costs; industry groups proposed a voluntary standard, which CPSC accepted, for one year, and monitored the less burdensome voluntary practice to ensure that the furniture met the safety standards.

7. Compliance Reform

agency replaces or supplements government compliance monitoring and enforcement with other mechanisms, such as third-party monitoring, supervised self-certification, and economically-based penalties.

A. Examples

- i. consistency in imposition of money penalties (27 federal departments and agencies can assess some 348 civil money penalties) (p. 36)
- ii. labor-management committees as alternative to on-site compliance inspections (OSHA examined) (p. 37)
- iii. self-inspections (FAA eliminated annual recertification requirement for exhibition, racing and amateur-built aircraft; certificates valid for 3 years, allows builders to perform their own "condition inspections" to determine whether they meet FAA certification standards (p. 37)
- iv. train employers and workers to identify safety and health hazards (OSHA) (p. 37)
- v. certification by third parties -- US Coast Guard permits inspection of pressure vessels by the American Society of Mechanical Engineers in place of USCG. (p. 38)
- vi. certification by local governments -- HUD certifies a local government's standards for residential subdivision construction; if the environmental criteria and construction standards are acceptable, HUD certifies the local jurisdiction so that subdivisions need not obtain environmental assessments or impact statements.

8. Tiering

The agency takes into account the size and nature of regulated organizations when it develops or revises its regulations

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Visions

Today, in Miami, importers are able to have their cargoes clear customs while their ships are still at sea, incoming passengers take less than five minutes to clear customs, customer satisfaction is high--and compliance levels are up. The Miami Customs team was able to do this by focusing on customer service, by exploiting information technology and by coordinating the activities of related agencies and departments.

Tomorrow, small businesses will be able to access and search on-line regulatory information to determine what current and proposed federal, state, local and multi-national regulations will affect their decisions to enter new markets or change their current operations.

The day after tomorrow, information technology and multi-agency management teams will permit the ultimate in customer service--**The Virtual Department of [*your name here*].** Intelligent interfaces will permit businesses and individuals to have point-and-click access to "their" government team--the regulators, benefit providers and information sources who are the assigned or appropriate points of contact for the myriad of government activities affecting them.

Mission

REGnet, a multi-agency reinvention lab, has been working to improve customer service in the regulatory arena through the use of new and emerging information and communication technologies. If supported as an administration initiative, REGnet can make government work better and cost less in the regulatory arena by:

1. Assisting agencies to exploit information technology to provide better customer service and easy access to regulatory information to all regulatory stakeholders--including businesses, local governments, federal regulators and the people.
2. Guiding the development of an "intelligent interface" to help locate, interpret and identify duplication and conflicts existing in current and proposed regulations.
3. Sponsoring or supporting inter-agency team-based efforts to streamline regulatory processes, reduce regulatory burdens and improve regulatory outcomes.
4. Facilitating communication among and between stakeholders in regulatory processes to assist in rule development, diffusion of innovation, and clarification of costs, requirements and opportunities.

There are many complementary initiatives in the fields of IT, regulatory reform, customer service and collaborative work technologies. REGnet will help link, integrate and accelerate the implementation of existing efforts and it will provide a platform and capability for expediting the diffusion of successful regulatory innovations on a nation-wide scale.

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Please note that September/December 1984 was a double issue.

SPECIAL FEATURE

Correction
In "Readings," September/December 1984, the title of J. R. S. Prichard's anthology was misstated. The correct title is as listed above.

(Continued on next page)


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Thinking Ahead

Getting smarter about regulation

William Drayton

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Thinking Ahead

If you don't like an EPA regulation,
make a counterproposal;
if it meets the same standards,
the EPA will probably accept it

Getting smarter about regulation

William Drayton

Any manager who has had to deal with regulations—whether from the EPA, the FCC, or the FDA—knows that any one regulation will not exactly fit his or her situation. Inevitably, the rule is too inflexible to allow managers to meet the requirements in ways that make sense for their operations.

Recognizing that managers and engineers probably know better than rules writers how to meet emission requirements in specific situations, the EPA has proposed three "controlled trading" reforms to the Clean Air Act that allow managers to batch sources and mix controls. In this article, the author describes how controlled trading works and enjoins managers to take the initiative in proposing new ways to meet pollution standards. He also suggests that this counterproposal process could be adapted to many other kinds of regulation as well, not only saving industry billions of dollars but also providing the same benefits intended by the regulations.

William Drayton was assistant administrator for planning and management of the U.S. Environmental Protection Agency. He has taught regulatory and management reform at both Stanford Law School and Harvard's Kennedy School of Government. Before that he worked for six years as a consultant with McKinsey & Co.

Over the last four years, the Environmental Protection Agency has been putting in place a new, smarter approach to regulating air pollution. If a company can find a more efficient, less costly way of getting the regulatory job done than the EPA's rules require—which in almost every case it can—the government will let the company do the job its way.

Companies that have tried this new approach have achieved substantial savings, chiefly by "trading" expensive controls for cheaper, often innovative alternatives. For example, the 3M Company plans to save $5 million at its Bristol, Pennsylvania plant next year by using water-based coatings and a new solventless "hot melt" process to reduce emissions more than required on three production lines in return for reduced controls on seven other lines.

Managers should be looking to see how they can benefit from this proven new approach. They can do so confident that it has the new administration's strong support. One of President Reagan's first environmental acts was to make it easier for certain large urban plants to make these kinds of trades.

The idea behind controlled trading is very simple. Rules, even the best possible rules, can't do what the manager on the spot can: find the most efficient way of getting the job done. Rules writers can only produce a series of generalizations that apply regardless of each situation's particular facts (and that usually also ignore other regulations affecting that case). The more a rules writer tries to adapt a rule to particular circumstances, the more detailed and inflexible it becomes.

Controlled trading gives the manager back the flexibility to find the best way of getting the job done that traditional regulation took away. Instead of simply writing rules and then enforcing them ("command and control" regulation), controlled trading encourages business to propose smarter alternatives before government moves on to enforcement ("command, *counterproposal,* and control"). This simple change promises to be the most significant innovation since the 1930s in how this country regulates.

Managers can either counterpropose changes within one plant, as 3M has

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Author's note: **A great many people worked very hard to make these reforms a reality. However, Henry Beal, Barbara Blum, Michele Corash, Doug Costle, Roy Gamse, Dave Hawkins, John Hoffman, Jim Kamihachi, Bob Kerr, Frans Kok, Mike Levin, John Palmisano, Steve Seidel, Deborah Taylor, and, most particularly, Jodie Bernstein were all key colleagues.**

done at Bristol, or they can negotiate trades with other plants in the same area—e.g., by paying another company to reduce pollution more than it is required to do as a means of avoiding a more expensive equal reduction at their own facilities. They can also "bank" any such excess reductions for future use or sale. Government, as trustee for the public's interest, makes sure that such counterproposals are both environmentally equivalent to and as enforceable as the rules they replace.

Business can save a great deal by using these new tools. A Du Pont study of roughly 50 of its plants, for instance, suggested that the company could cut its costs for controlling hydrocarbon pollution by more than 60%, or $80 million annually, if it were allowed to make a simple switch in the mix of its controls. Because its calculations assume no innovation and no trading across plant lines, Du Pont's eventual savings will probably be much greater.

For example, at its Deepwater, New Jersey chemical complex, Du Pont will save $12 million by reducing emissions from five large hydrocarbon stacks more than 97% in exchange for not having to meet 85% reduction requirements at 200 small, difficult-to-control process sources. The air will be cleaner after this switch than before. Further, since Du Pont will now have to control and the state environmental agency monitor only five point sources, the trade will result in faster compliance and better enforcement.

It is easy to understand how Du Pont could achieve such results in view of the extraordinary range of control costs that industry after industry now experiences. Companies commonly incur vastly different costs for removing a pound of the same pollutant from different parts of a plant. In 1977 the EPA looked at a number of plants to get a quick sense of the range of costs. At the first plant it found that the cost of removing one pound of dust from the emissions of different processes, each subject to its own regulation, ranged from less than 25 cents to $100.

Even a rule setting a performance standard for one process (e.g., paint spray booths) is likely to prove crude and wasteful. A plant engineer who is responsible for 20 such booths knows that some are big and new while others are old and small; that they have different engineering qualities; that some are used all the time and others only for special jobs or at peak load capacity; that several will be scrapped soon. If only the rule that all paint spray booths must meet a fixed standard were not in the way, the plant engineer could accomplish the same result much more efficiently by controlling big, new, easily controlled, heavily used machines more and small, old, peak-load booths less. Or he or she could ignore some of these small booths by controlling more tightly another process emitting the same pollutant elsewhere in the plant.

Swaps across plant lines and industries make even more sense than those within a regulated process or among different processes within a plant. The average cost of removing a pound of a pollutant in industries with high abatement costs is a hundred times greater than the average cost in industries with less expensive options. Taking such huge variations in cost both within and among industries into account, managers can achieve truly dramatic savings by trading increased controls on low-cost processes in a low-cost industry such as chemicals for less stringent requirements for high-cost processes in a high-cost industry such as nonferrous metals.

This reform will eventually save billions of dollars a year. With air and water pollution clean-up costs alone running at roughly $40 billion per year, even a 10% savings would be worth $4 billion annually. Actual savings are likely to prove much greater than 10%, especially once trading across plant boundaries becomes common. The EPA is working to create new market institutions to facilitate this trading. Applying the counterproposal idea to other areas of regulation will, of course, further multiply the savings.

This reform has passed the initiative back to business. These very substantial savings, which go to the businesses innovating better controls and trading in this new market, should provide them with ample incentive to take the initiative.

Investing management time here will help the public as well as profits. Society urgently needs a markedly increased flow of new pollution-control techniques. Controlled trading provides business the same powerful, bottom-line incentive to find new, more efficient pollution-control methods to cut production costs. In the absence of such innovation we cannot solve the environment's core strategic dilemma: how to fit a volume of pollution that grows with the economy at a compound rate year after year into the forever fixed carrying capacity of our air, land, and water (see the ruled insert on p. 40).

Controlled trading should also help solve the environment's second-generation enforcement dilemma—industry's dismal failure to operate or maintain efficiently its control equipment. Recent EPA studies show that the average "complying" source of air pollution currently emits in excess of 25% more pollution than it legally should, even netting out periods when it emits less. This problem, already critical, will get steadily worse as equipment ages unless we give plant managers and engineers new incentives. Now they commonly neither understand nor care much about their control equipment. However, once they design their own controls, they will have both the understanding and the psychological investment that are critical to keeping them working.

Finally, regardless of how Congress may modify the Clean Air Act's environmental standards, these benefits will stand. Whatever standards and rules (inevitably wasteful) the EPA sets, managers can always make counterproposals. (See the ruled insert on p. 52 for a summary of steps a business can take to find better, cheaper methods for cleaning up.)

Trading a pound of pollution

Controlled trading is a new reform strategy. Most regulatory reforms have worked to regulate the rules writers—to force them to do a better job. Rules writers must consider everyone's opinion. They must follow detailed legal procedures; routinely consider environmental, economic, consumer, energy, urban, rural, equal opportunity, and a steadily expanding host of other concerns; and, increasingly, calculate cost-benefit ratios.

Escaping an environmental dead end

The environment is caught in a very dangerous cycle. Every year there are more people in the world, and every year the amount of economic activity per person increases. Consequently, the volume of pollution grows at a compound rate, and every year the absolute increase in our pollution problem grows bigger and harder to manage than the year before. Unfortunately, the amount of air, land, and water never grows.

The resulting accelerating imbalance between pollution and our natural resources is the chief reason our environmental problem is so difficult. Several decades ago people hardly worried about pollution. But by Earth Day in 1970 many felt conditions had become intolerable. Since then, because of strong regulatory interventions, as a nation we've reduced the levels of most traditional pollutants. For example, the air contains 17% less sulfur now than in 1970. Had we not acted, however, sulfur levels would have become dramatically worse, not better. If our country does nothing more for even a few years, sulfur levels will again rise rapidly.

This annual compound growth in the volume of pollution is driving the United States toward a very painful dead end. Just to maintain current, often unhealthful air levels – let alone to make any progress – the EPA and state environmental agencies must move down two very expensive, politically painful, and increasingly resistance-prone paths.

First, growing pressure forces the EPA and state agencies to require those they regulate to remove progressively larger proportions of the pollution they generate. To reduce pollution 85% typically costs much more per additional pound removed than it does to remove 60% – and 98% costs much, much more. As we move up this cost curve, resistance increases. Understandably, people want to know whether it makes sense to remove the next few tons of pollution if it costs as much to do so as removing the last several hundred tons.

The second path is at least as unattractive. Environmental managers are being forced to regulate larger and larger numbers of smaller and smaller people. Whereas the EPA and the states originally regulated only major polluters, they are now struggling to force car owners in some 20 cities to submit to annual inspections of their pollution control equipment. Although this program costs relatively little per ton of pollution removed, few car owners (or the affected local governments) are enthusiastic. Similarly, environmental agencies have been compelled to reach out to small industries like dry cleaners and local printers. Visualize the reaction your local printer had when an environmental officer informed him that some of his presses emitted invisible pollutants and needed expensive controls. With each step down this path, the hassle factor per pound of pollution removed increases geometrically – as do the administrative costs incurred by the environmental agencies.

In other words, as the volume of pollution continues to compound, the real price of maintaining any given level of air quality increases sharply. And as this trend continues, society may eventually be tempted to compromise its public health standards In either case, it is impoverished.

Finding a third path that leads away from this dead end is the most important strategic objective of thoughtful environmental managers, public or private. The only serious possibility lies in greatly accelerating the rate at which society discovers new, improved means of environmental control. If the country can increase this innovation rate sharply, it may be able to cut control costs as fast as compounding pollution pushes them up.

The EPA's research staff can't possibly do all or even a significant portion of this job. Society will succeed only if it releases the creative energy and focuses the technical ability and specialized knowledge of thousands of managers and plant engineers all across the country on this problem. That is what controlled trading is designed to do and why it is environmentally essential.

Until now almost all controls have been end-of-the-pipe black boxes (scrubbers, bag houses, and so forth). Probably because of the noninvolvement of plant engineers to date, relatively little control has occurred through modification of the underlying production processes. Process change is one of the most obvious areas where the innovation stimulated by the positive incentives of controlled trading should take hold.

We're getting better rules today as a result of these efforts. However, a rule is still a rule–unavoidably overgeneralized and rigid.

Controlled trading doesn't try to regulate the regulators further; rather, it frees managers to find better solutions.

Managers, plant engineers, and corporate environmental officers, unlike rules writers, can identify and install the most sensible mix of controls for each facility, innovating where necessary and taking into account all its unique circumstances as well as those of nearby plants and of the area's air quality conditions. They can do this by negotiating case-by-case trades–if government lets them–in exactly the same ways companies deal with one another in every other aspect of commerce. The essence of EPA's controlled trading reforms is to make such trading possible. They are designed to free management ingenuity and initiative through three key, closely interrelated tools: the bubble, offset trading, and banking.

The bubble: Managers can use this reform to escape the narrow scope of existing process-by-process regulation and to look at their facilities as a whole. In planning their counterproposals, they can imagine that their facilities are covered by an enormous plastic bubble or dome. Managers may control the several sources of pollution under the bubble in whatever way they think makes sense, as long as no more pollution escapes than would have under the former process regulations: As long as air quality is protected, the bubble can stretch well beyond one plant's boundaries. It applies to all existing processes that emit the same pollutant.

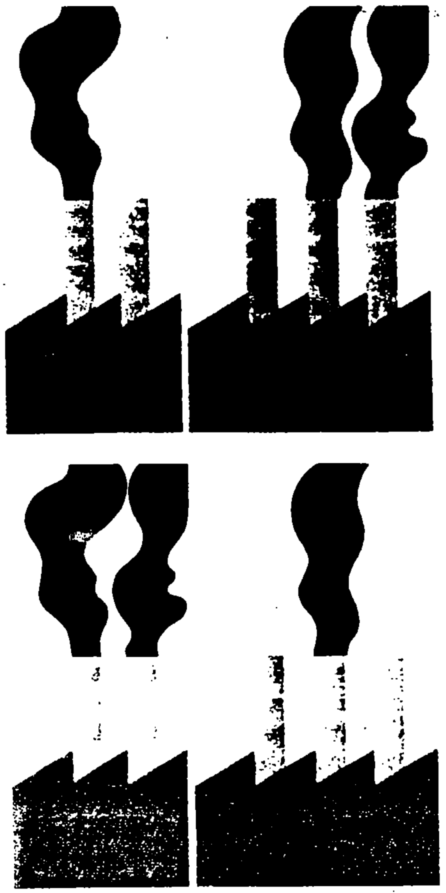
Within nine months of the EPA's announcement of the bubble policy in December 1979, industry had started to develop more than 70 bubble trades. The average trade promises to save more than $2 million. The trades are as varied as the companies' circumstances:

☐ With a multiplant bubble covering two of its generating stations in Providence, Rhode Island, Narragansett Electric is saving its customers upward of $3 million and the country 600,000 barrels of imported oil per year while cutting sulfur dioxide emissions by 30%. Both stations now burn imported low-sulfur oils; in exchange for use of domestic natural gas at one plant, the company will switch to higher-sulfur oil at the other.

☐ Through an analogous fuel switch, Kodak's Eastman Gelatin subsidiary in Peabody, Massachusetts, where unemployment is high, avoided laying off 350 workers. And a small Pennsylvania nursery company proposes similar trades at three of its greenhouses.

☐ At its printing and packaging facility in Boulder, Colorado, Coors Beer expects to save between $300,000 and $2.5 million per year. Emissions on one printing line can exceed regulatory limits as long as that excess is offset by another line emitting less than it is allowed that day.

☐ U.S. Steel's bubble at its Fairless Works will save it $15 million by substituting the use of low-sulfur fuel in six production processes for the installation of very expensive coke oven gas desulfurization equipment.



The 3M and Du Pont cases discussed previously illustrate two other types of bubble trades.

As business and the EPA continue to gain more experience with this central innovation, they will work out its remaining bugs and make it steadily easier to use. For example, one change New Jersey made in January affecting one industry in that state alone produced 50 new bubble proposals by April. As the volume of bubble trading increases, it will become increasingly easy to use—to the benefit of both the environment and the country's need to modernize its plants and generate new jobs.

Offset trading: It is illegal to build a new facility or expand an existing plant in an area where the air is too contaminated to meet basic health standards if doing so will aggravate the area's air quality problem. To prevent an intolerable conflict between the need for local economic growth and modernization on the one hand and this statutory public health requirement on the other, the EPA developed the offset policy: the new source of pollution can move in as long as it (1) controls its emissions as tightly as possible and (2) offsets whatever it can't control with reductions not already required by law of the same pollutants from other facilities elsewhere in the community.

☐ When Pennsylvania successfully attracted Volkswagen to a site in the western part of the state, one element in its package of inducements was the provision of sufficient offsetting reductions of the area's smog-causing hydrocarbon pollutants to meet this requirement. The state provided these offsets itself in large part by shifting to water-based rather than petroleum-based asphalt in its road building and repair work in 16 nearby counties. The VW plant now needs additional offsets, and it and the state are exploring several prospects at nearby steel facilities.

☐ The chambers of commerce in Shreveport and Oklahoma City made room for new General Motors plants in their communities by inducing local oil companies to close marginal facilities and reduce storage tank emissions.

☐ Management of General Portland Cement paid Parker Brothers $520,000 to install dust collectors on its facility in New Braunfels, Texas so that General Portland could add a new coal-fired preheater to its plant there without pushing the area over the health standards for particulates.

During the start-up years of 1978 and 1979, business completed nearly 700 documented offset trades. The third and newest element of controlled trading, banking, will make such trading much easier and should increase its volume substantially.

Banking: Swapping clean-up requirements among pollution sources is the essence of controlled trading. Where one source can provide the same pollution reduction far more cheaply than another, everyone gains. When the sources lie beyond a company's boundaries, however, trading becomes more difficult. Companies, especially those opening a facility in an unfamiliar community, have inadequate information regarding both what reductions are available elsewhere and what their price tags are. Consequently, despite the opportunities offered by huge variations in the costs of removing a pound of the same pollutant both among companies and industries, 95% of all completed offset trades have involved different parts of the same company.

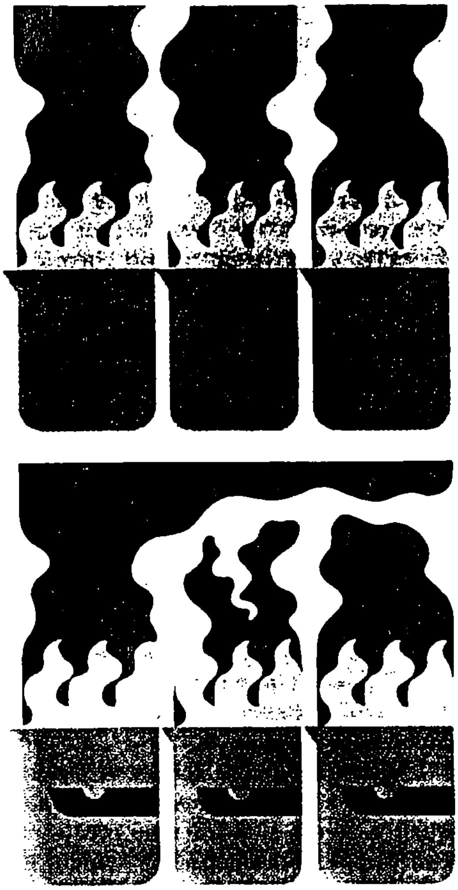
Trading is difficult for another reason: most clean-up decisions involve capital investments that are implemented at one moment in time. Even if two planned investments are obvious trades, a switch may nonetheless prove impossible if the investments are timed differently. This is especially likely if each decision is driven by independent regulatory deadlines.

Banking solves these problems. A pollution reduction bank works simply: it (1) purchases or takes emission reduction credits (for abatement beyond what the law requires) on consignment from pollution sources in its service area, (2) stores them, or (3) acts as a clearinghouse to facilitate subsequent trading. For example, a company may decide to install a larger, more efficient piece of control equipment than it legally must and sell the additional reductions to the bank if the price is attractive. Or a plant may switch to natural gas and sell or consign the resulting pollution reduction to the bank.

Some local governments have been working actively to help their banks build up their emission reduction accounts. Boston, for instance, is considering providing free technical assistance to private building owners seeking to cut their fuel bills in return for control over the offset credits that will flow from the accompanying pollution reductions. By August 1980, San Francisco, Seattle, and Louisville had full-scale banks in operation, and another 20 communities or states were developing them. (Even without such institutions, many companies have stockpiled reductions or potential reductions both to safeguard future growth and, with the help of the bubble, to phase in control investments more economically than existing regulatory deadlines allow.)

A pollution control bank can be a for-profit or not-for-profit organization; in the latter case, local environmental control or economic development agencies or perhaps chambers of commerce are most likely to manage them.

Once it has established such a bank, a community will have a competitive



advantage in attracting industry. As soon as a company expresses interest, the community can immediately offer at a known (perhaps subsidized) price a supply of emission reduction credits that the company can use to satisfy pollution standards. Management saves not only money but also a good deal of regulatory uncertainty, delay, and frustration. A working bank will also benefit established companies. Before investing in expensive controls, a manager can quickly and efficiently determine whether it might be simpler or cheaper to buy a reduction from the bank.

Banks may also provide brokerage services to help extend the efficiencies of controlled trading to smaller companies and make the market more liquid. In this role, a bank can further stimulate the market by providing free audits to help companies evaluate the potential for creating extra reductions. Brokers providing some or all of these services may, of course, operate independently of a bank.

A formal banking system creates a continuing incentive for companies to do more than required when replacing control equipment or meeting new control standards. The banking reform helps make these cheap extra reductions valuable commodities that management can use to satisfy future control obligations, to offset planned expansions, or to sell to other companies locating or expanding in the area. The bank charter's legal guarantees can encourage investment in pollution reductions by protecting the credits against confiscation and by specifying what will happen if, for example, the EPA demands further reductions.

Safeguards: This new market approach to regulation could not survive laissez-faire. If the EPA or the states allow these reforms to become loopholes, controlled trading will collapse instantly. The environmental community and the public would, quite sensibly, reject it. Consequently, the EPA has taken great care to design this new approach to be loophole resistant. The bubble policy incorporates a number of safeguards, for example:

☐ Hazardous elements (e.g., benzene) of a class of pollutants (e.g., hydrocarbons) can be traded only if the volume of that element declines. The presence of trace elements cannot, however, be used to block a trade.

☐ The EPA discourages trades of road and storage pile dust for production process emissions, chiefly because the former may be less harmful and harder to measure or model. However, the EPA has approved a bubble involving just this sort of trade at Armco's Middletown, Ohio steel plant because Armco actually demonstrated that its counterproposal removed more than six times the pollution—4,000 tons a year instead of only 650 tons. (This bubble saves Armco from $14 million to $16 million in capital costs and $2.5 million to $3 million a year in operating costs.)

In addition to these substantive safeguards, the EPA has, at least initially, limited both those who can use bubbles and where they can do so. The EPA will only consider bubble applications from companies that have complied with current emission limits or are keeping to an agreed compliance schedule. Frankly, this provision was written to keep cheaters out of the new marketplace, especially during its sensitive start-up years. There are very few such companies. Of Connecticut's 12,000 registered sources of air pollution, for example, only 20 to 30 required serious enforcement action during the first four years of environmental regulation in that state. And only 3 or 4 of these were hard-core scofflaws. However, every regulatory agency knows which companies in its jurisdiction these few are. (The staff has suffered at their hands before.) To let one of these companies be an early applicant would be to ensure a worst-case response, setting a precedent that could limit needlessly the bubble's applicability.

The policy's chief geographic limitation is in areas that have not met minimum national air quality standards. Companies in such areas must demonstrate that their bubbles will not interfere with the area's making satisfactory progress toward achieving compliance.

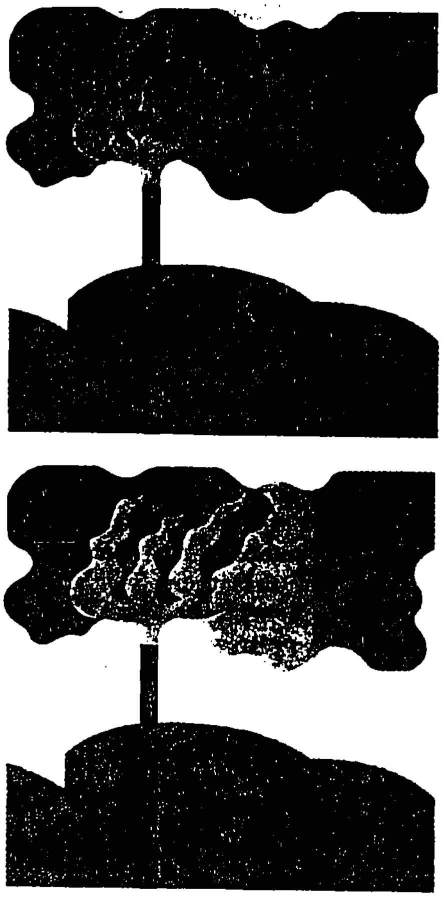
The ultimate safeguard of everyone's interest is, of course, the environmental agencies' final reviews of each counterproposal. Acting in the public interest, these agencies will approve a trade (or bank transaction) only if it respects their policies and, most important, passes the cornerstone tests of environmental equivalency and equal enforceability.

Now let's look at the U.S. experience with controlled trading to date, point up what the problems have been, and summarize the major outstanding policy issues.

Making a regulatory market work

Turning the idea of a regulatory market that supports extensive controlled trading into reality is an ambitious undertaking. Literally thousands of people—business managers and engineers, state and local officials, EPA staff, legislators, environmental activists, and the press—must learn to use regulation and to work with one another in fundamentally new ways. Although controlled trading is now a proven, widely used approach producing very substantial benefits, it will still take years before it is fully institutionalized where it is most crucial —in these people's heads. (It took 15 years for American farmers to accept hybrid corn.)

Over the next several years the Congress, the EPA, the states, and both



the business and environmental communities will continue to develop and refine the reform's basic legal structure. They will close the odd loophole. More important, they will extend the market's coverage and continue to loosen restrictions that prove unnecessary. Business must also organize to take advantage of this new opportunity; it must provide the chief case-by-case initiative.

The experience so far: The simple common sense of the counterproposal idea quickly won full support. Although initially some environmentalists feared that the reform might become an enforcement loophole or take too much staff time, much of this initial concern has abated with actual experience and as the reform's environmental advantages have become more apparent. Recently, one environmental leader commented that this approach is probably the wave of the future. A number of line managers quickly saw the practical implications for their companies. John Barker, Armco's director of environmental engineering, described his first bubble as follows: "We can control six times as much [pollution] for one-third the cost in half the time and at a tiny fraction of the energy consumption."

After several years and more than a thousand completed trades, offset trading is reasonably well established. Because so little cross-company trading occurs, however, much of the possible benefit remains untapped. The new banking and brokerage reforms should help.

The bubble is now beginning to gain considerable momentum. Its start-up year was much slower, in large part because the EPA was very cautious when it launched the bubble policy in December 1979. It took great care to avoid either falling on its face administratively or creating an enforcement loophole (which it felt might well prove politically fatal to the whole policy).

The agency was probably too cautious, however. It imposed a series of restraints on the policy that—in fact or as a matter of perception—frustrated many of the state environmental agencies and companies seeking to use it and that, with 20-20 hindsight, were not necessary. Irving Shapiro of Du Pont, one of the bubble policy's early supporters, expressed this common frustration in an April 1980 letter to the EPA: "I am quite concerned that procedural problems may prevent its [the bubble's] effective implementation."

Midcourse correction: In September 1980, the EPA convened a conference of businessmen, congressional and White House staffs, environmentalists, and state and local environmental agency managers to help it design a midcourse correction for the bubble policy. Since then it has removed a number of unnecessary barriers:

☐ The EPA will now approve classes of trades proposed by the states rather than insist on reviewing each case itself. This change responds to the most loudly voiced complaint of both industry and the states. They have found the added delay and second-guessing of a formal federal review of each counterproposal, on top of a formal state review, maddening. The EPA responded first by offering to do its review simultaneously with the state whenever the state and company were willing.

Then, in November 1980 the EPA agreed to allow New Jersey to approve hydrocarbon bubbles by direct permit changes as long as the procedure met a few simple criteria. The EPA would have 20 days to object to such bubbles, but federal approval would no longer be required. (New Jersey believes that this one small change will in 1981 permit that state alone to approve up to 300 chemical companies' bubbles, worth several hundred million dollars in savings.) The EPA has urged other states to develop similar generic regulations governing bubble approvals, and a growing number are doing so. State and industry initiative is what's needed now.

☐ The EPA no longer routinely requires detailed mathematical modeling—the time-consuming, expensive, and unavoidably judgment-filled black art of air pollution regulation. For 90% of the applications, where much easier tests of environmental equivalence will suffice, that's all the government now requires.

☐ The EPA no longer restricts trades in areas with unacceptable air quality across the different processes emitting hydrocarbons for which it has developed technical guidelines.

☐ The agency now allows the can-coating industry to exceed its emission limits with some batches of cans as long as it offsets those excesses. This change will be worth $135 million to this small industry in 1981 alone—another precedent other industries can follow.

☐ In March 1981, the Reagan administration changed the definition of *source* in the EPA's nonattainment regulations. This change allows companies locating large new facilities at existing sites to trade control requirements between new and old parts of the plant. Two refineries and two GM plants in California will be immediate beneficiaries.

These and a number of other simple recent changes have made it much easier to use the bubble.

Four major, difficult issues are still outstanding, however. How they are resolved will importantly influence the speed and degree to which our country benefits from controlled trading:

1. *Should government limit the use of the bubble in areas that have not met national air quality standards for health—that is, most of our cities?* During the year after it announced

the bubble policy, the EPA in effect prohibited its use in nonattainment areas with two limited exceptions—if a company could demonstrate that, taking all sources of pollution into account, either its part of the city did meet air quality standards or had an adequate plan for doing so or, alternatively, that certain limited types of hydrocarbon trading (exempted for historical purposes) were involved.

This sweeping restriction is not what the EPA intended. The original policy approved trading once an area had a fully accepted plan for coming into compliance. The agency then expected to approve plans for most areas within months after the bubble policy was promulgated. Good intentions notwithstanding, however, although the agency has partially or conditionally approved a great many state plans, it has given final permission to very few even now. Consequently, urban bubbles proved to be available to only those few companies that could fit into one of the two exceptions.

Now the EPA allows bubbles in nonattainment areas regardless of the finality of the state/local compliance plan. It has, however, imposed a new condition: companies proposing bubbles in such areas must meet a higher standard of control, "reasonably available control technology," than previously applied to them. The rationale for this added requirement is that, once the area gets a finally approved control plan in place, the company will probably have to meet a higher standard. If the government lets the company go ahead with capital investments that fall short of this future need, it will, a year or so later, either have to force the company to go through expensive retrofits or accept inadequate levels of controls.

This new condition will clearly discourage some, perhaps many, companies from proposing bubbles. A higher standard is a more expensive standard, and only the more profitable trades are likely to make accepting these extra costs worthwhile. However, if managers believe that in a few years they will face a higher standard in any case, they will probably give only limited weight to this temporarily increased expense. They may even prefer to get an early, firm reading of what will eventually be required.

Delay and uncertainty are likely to be a more serious barrier. Definitions of reasonably available control technology do not exist for a great many processes. Must a plant manager seeking to develop a bubble under this provision first get his or her state agency to define standards for those processes the plant wishes to put under a bubble and for which no standard has yet been set? If so, given the difficulty of setting such standards and the press of many other demands on state air pollution agencies' staffs, the manager may have to wait some time to get an answer.

Fortunately, in most cases governments that allowed companies to use the bubble without this added requirement would not be confronted with a retrofit-or-nothing Hobson's choice. As long as a company or its community has a number of ways of reducing pollution, there will be no need to force sources that have just executed a trade to retrofit. If the government revises a community abatement plan and asks companies in the area to reduce their emissions, they can comply by controlling any source of the same pollutant within the area using controlled trading techniques.

Most cities are not suffering extreme levels of pollution and could meet clean air standards in a number of different ways. At least these cities could approve bubbles within the limits of existing requirements without risking the inability to meet standards. Such a liberalization would go a long way toward realizing the full potential of the bubble.

2. *Should the companies that must be in compliance with air quality standards by 1982 (or face financial penalties) have to install unduly expensive control equipment because they cannot get their bubble proposals approved in time?* The EPA has taken a step toward solving this problem by informing companies that are interested in using the bubble and that are proceeding satisfactorily toward compliance that it won't use its limited enforcement resources to investigate their cases, thus de facto removing the penalty deterrent to using the bubble.

3. *How can managers be assured that the reduced control requirements they purchase in exchange for a greater abatement effort elsewhere won't be expropriated?* Some managers have expressed concern that these relaxed requirements will prove an all too easy and visible target for environmental agencies looking for new ways to offset the compounding growth of pollution. Many business people need strong guarantees against such capital expropriations before they enter the controlled trading market. Policy and the law must safeguard against seizures either of a banked or otherwise stored pollution reduction credit or of a relaxed permit requirement purchased with offsetting reductions elsewhere.

Finding a better way

Each plant's managers should try to find better, less expensive ways of cleaning up their processes than are required by the several rules that apply to their plant. The procedure is simple:

○ Calculate the marginal cost of cleanup for every process emitting the same pollutant.

○ See if it is feasible and still economical to cut more emissions from the least expensive sources (or from any easy-to-control unregulated sources of the same pollutant).

○ Check to see if any nearby sources of the same pollutant might be willing to sell a reduction inexpensively (which is easy if a bank serving the plant's community already exists).

○ Make a counterproposal to the state environmental agency and let the EPA know.

Ultimately, business's chief protection is the fact that both legislatures and the courts understand how counterproductive expropriation is. If allowed, expropriation would wreck the market. The EPA will certainly oppose any threat of expropriation as strongly as it can. It is now working on a regulation designed to settle this and a number of other controlled trading issues permanently.

4. *Should new plants be prohibited from trading emissions reductions with existing facilities?* At present, new plants must meet very specific, tight standards. They cannot lower the often steep marginal costs of these controls by purchasing reductions from existing nearby facilities. Supporters of this policy argue that new sources should be controlled as tightly as possible: they will be with us for a long time and should be built to perform at a high standard. Whereas it may never be politically possible to

clean up existing plants efficiently, it is much easier to regulate new sources. Some environmentalists consequently believe that the gradual replacement of dirty existing facilities by tightly controlled new plants is the only hope for cleaning the air.

Those who hope to allow new plants to trade respond that it doesn't make sense to force a company to pay up to 10 times more to remove a pound of pollutant than it could by trading the undiminished cleanup responsibility with another facility. They ask, Why should the EPA care how companies discharge their responsibilities as long as they do? They also point out that the "new" control equipment installed in the early 1970s is already old and in growing need of replacement. The vision of solving the country's air quality problem without existing sources bearing much of the load is a chimera.

Cleaning up

Encouraging industry to counterpropose better ways of getting the public's job done is as basic and broadly applicable an idea as it is simple. Many different kinds of regulation—such as those controlling noise in factories, allocating airport landing rights, or even governing children's supervision in our schools—could be revised to allow industry to propose cheaper, but still effective, control methods.

The United States needs this smarter form of regulation. Over the last few years, business and the EPA have demonstrated that it works. Public and business managers must now finish the job both of implementing the reform in the air pollution area and of extending it to new areas. ▽

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The Business Roundtable

Toward Smarter Regulation

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Executive Summary

America is experiencing a dramatic increase in government regulation, with the most significant growth in the environmental, health, and safety areas. While the goals of many of these regulations may be laudable, there is a growing realization that we are wasting resources: Legislatures and agencies simply are not allocating limited resources in a cost-effective manner. We could achieve as good or better protection of human health and the environment at far less cost by regulating smarter.

Regulations are like "hidden taxes" that impose costs that are not readily apparent, yet are enormous. Just as the public must pay for government spending programs through higher taxes, they must also pay a high price for regulations – as customers, employees, and stockholders. The soaring costs of regulation stifle productivity, wages, and economic growth. Regulations also undermine jobs and international competitiveness. The increasing strain on our nation's resources brings into sharp focus the challenge for the '90s and beyond: The nation must not only reduce regulation, but when we choose to regulate, we must regulate smarter.

Regulators cannot regulate smarter unless their leaders allow it and demand it. Strong leadership must change the current incentives that drive agencies to create new regulations with little restraint, but offer virtually no reward for reforming or eliminating existing regulations or obviating the need for new ones.

Business is not alone in calling for regulatory reform; taxpayers, state and local governments, academics, members of Congress, the President and the Vice President have all expressed concern about the rising tide of regulations. To provide a framework for smarter regulation, The Business Roundtable recommends that federal, state, and local governments implement the following twelve tenets of rational regulation:

1. **Risk-Based Priorities and Public Education: To provide more cost-effective protection to human health and the environment, regulatory priorities should be based upon realistic considerations of risk. Agencies must educate the public about the level of risks proposed for regulation compared to risks familiar to the public, as well as the cost of reducing that risk.** The government should estimate the relative risks posed by different substances, products, or activities and decide whether, and

how, to regulate based on those risks. Resources should be committed where the greatest risks can be reduced at the least cost. The government should ensure that the public understands the magnitude of each risk compared to more familiar risks, as well as the costs of reducing that risk.

2. Risk Assessment and Risk Management: Risk assessment methodologies should be continuously improved, and agencies should establish a clear distinction between assessing risks and deciding how to manage them. The scientific process of risk assessment should be made as objective as possible, and uniform standards should be applied. Any necessary policy or scientific judgments should be disclosed. Cost-effective approaches to managing risks should be promoted.

3. Sound Science: Agency decision making should be grounded on the most advanced scientific knowledge currently available. New regulations should be based on the most advanced and credible scientific knowledge, and existing regulations and methods should be regularly updated to incorporate scientific advances. In making decisions and setting priorities based on risk, agencies should use "best estimates," not worst-case estimates of risk.

4. Benefit-Cost Analysis: Benefit-cost analysis should be utilized by agencies when developing regulations, with preference given the least costly regulatory alternative that accomplishes program objectives. First, agencies should use benefit-cost analysis to determine whether or not a proposal should be considered for adoption. Second, agencies should use cost-effectiveness analysis to select the regulatory option that achieves regulatory objectives in the least costly way.

5. Market Incentives and Performance Standards: Market-oriented solutions and performance standards should be favored over command-and-control regulation. Market-based regulatory approaches reproduce the efficiency of a free market by internalizing the cost of a regulated activity or substance. They allow regulated parties to meet or exceed regulatory goals in the least costly way. Moreover, market incentives and performance standards adapt to changed circumstances more quickly than government command-and-control regulation.

6. Productivity, Wages, and Economic Growth: Methodologies should be implemented and continuously improved to assess the impact of major regulations on productivity, wages, and economic growth, as well as the adverse impact on jobs and international competitiveness in industries that bear the burden of regulation. For our economy to grow, regulatory and economic goals must become complementary, not conflicting. Government must be more sensitive to the impact of regulation on wages, prices, jobs, and international competitiveness.

7. Coordination Among and Within Agencies: Coordination of regulatory activities among and within agencies should be improved to eliminate inconsistencies, duplication, and unnecessary regulatory burdens. To address problems within the jurisdiction of multiple agencies, a strong interagency committee should engage in strategic planning and develop a coordinated response before regulations are proposed. Each agency should also coordinate its programs that address different aspects of the same problem.

8. Openness: The entire regulatory process, including centralized Executive review and management of agency rule making, should be open to public scrutiny, to promote the quality, integrity, and responsiveness of agency decisions. Secrecy should be removed from the regulatory development and review process. More rules should be developed through regulatory negotiation, which involves open negotiations between regulators and interested parties.

9. Periodic Review: Programs and regulations should be periodically reviewed for purposes of determining whether they should be reformed, discontinued, or consolidated. Periodic review allows for government-wide priority setting through reforming or eliminating regulations, updating scientific methodologies, reorganizing an agency, or reallocating responsibility among agencies. Where appropriate, legislatures can ensure a stricter review process by setting firm deadlines by which they will be compelled to evaluate and vote for continuation of a program, or the program will terminate.

10. Federalism: Regulatory authority should be more rationally allocated among the federal, state, and local governments, and federal regulatory programs should avoid unfunded mandates. Many activities and substances are controlled by a mix of federal and state regulation. Modern commercial realities demand a more cost-effective balance of federal and state regulation. The federal government is primarily responsible for achieving this balance and should carefully consider whether to preempt and regulate a field or leave the field to the states. The federal government should also refrain from directing state and local governments to administer or comply with federal programs without providing the necessary funds.

11. Paperwork Burdens: Paperwork burdens caused by regulatory programs should be expressly assessed and substantially reduced. The massive paperwork burdens imposed on business, the public, and governments themselves must be reduced. The Paperwork Reduction Act and OIRA's paperwork control responsibilities should be strengthened. Moreover, administrative process costs – the inflexibility, unresponsiveness, and delay that characterize many regulatory programs – should be examined and reduced.

12. Regulatory Budget: A framework should be developed to account for expenditures required by regulations and to promote greater fiscal restraint on regulatory programs. There is a pressing need for government to be more sensitive to the cumulative costs of regulations. Under a regulatory budget, agencies would have a powerful incentive to regulate in a more cost-effective manner; each agency could be limited in the amount of regulatory costs imposed on the economy each year.

* * *

A unique opportunity for meaningful regulatory reform presents itself. There is a growing consensus not only on the need for regulatory reform, but also on how to achieve it: Government must assess the seriousness of risks proposed for regulation, compare risks to be regulated to risks familiar to the public, disclose the costs of regulation, regulate only if the benefits outweigh the costs, and select the most cost-effective, market-driven method possible. This is smarter regulation. And smarter regulation is better regulation, for consumers, governments, and business alike. President Clinton's Executive Order on Regulatory Planning and Review espouses many of these principles for improving both regulations and the regulatory process itself.

However, the White House, Congress, agencies, and the states must all commit themselves to smarter regulation. The Business Roundtable recommends that governments at all levels implement these twelve tenets. *Our nation cannot afford to ignore the challenge to regulate smarter.*

I. Introduction

Since the 1970s, our nation has implemented far-reaching regulatory programs to protect human health and the environment. Congress created new agencies – such as the Environmental Protection Agency, the Occupational Safety and Health Administration, and the Consumer Product Safety Commission – with broad responsibilities to reduce risks to public health, safety, and the environment. Older agencies, such as the Food and Drug Administration, have been given expanded regulatory authority. Sweeping legislative mandates have directed agencies to reduce risk to the environment, health, and safety, almost without compromise.

Some government intervention in the economy may be necessary to achieve desirable goals such as a cleaner environment, safer working conditions, and safer products. In many instances, specific regulations have been well-conceived and reasonably implemented. These efforts have produced substantial benefits for the country and its people.

And yet, even with the best of intentions, government simply is not allocating limited resources in a cost-effective manner. Despite a dramatic increase in environmental, health, and safety regulation, experience has taught us that often our regulatory efforts have been more costly and less effective than they could have been. Moreover, the enormous costs of federal and state regulations exert a heavy drag on the economy. They depress wages, stifle productivity and economic growth, drive up prices, and impede innovation. They also burden federal, state, and local governments. In our increasingly global economy, excessive regulation seriously undermines the competitiveness of U.S. businesses. Ultimately, the American public suffers.

The costs of regulation are undeniably high, and the costs of many regulations plainly outweigh their benefits. The annual cost of federal regulation was conservatively estimated at $581 billion for 1993; it is projected to rise to $662 billion by the year 2000.[1] Almost 75% of that cost increase is expected from additional environmental, health, and safety regulation.[2] According to EPA projections, by the year 2000 the United States will spend $160 billion annually on pollution control alone – almost 90 percent more than was spent in 1987.[3] Although economic regulation in areas such as transportation and energy has declined, cost reductions from earlier reforms have been dwarfed by new regulation in the environmental, health, and safety areas.[4]

Beyond the problems caused by the rising costs of government regulation, the regulatory process itself has become unduly rigid, unresponsive, and inconsistent. These problems have sparked increasing concern about the rationality of the regulatory process and a growing determination to do something about it.

The Need For Priorities and Reform

Consumers, business, and governments all have a stake in regulatory reform. Federal, state, and local governments, like business, are part of the regulated community. The enormous liability of federal facilities and municipalities for Superfund cleanups is but one growing regulatory crisis faced by governments at all levels. To absorb the costs of regulation, businesses may be forced to raise prices, reduce production, eliminate jobs, cut research and development, or even go out of business entirely. Likewise, federal, state, and local governments may raise taxes or reduce services; some local governments may even face the prospect of bankruptcy.

Although the direct costs of regulation typically are imposed on businesses and governments, they ultimately are passed on to the American consumer through higher prices, diminished wages, reduced quality or availability of products and services, as well as through increased taxes. Per household, these costs total about $5,900 per year.[5]

These soaring costs of government regulation come at a challenging time. The national debt now exceeds $4 trillion – $16,600 for every man, woman, and child in America.[6] This expanding deficit makes it painfully obvious that our resources are limited. Many government priorities – including crime prevention, education, and defense – must compete for these limited resources. Any increase in regulation must be weighed against other legitimate priorities, as well as against its adverse impact on wages, productivity, and economic growth.

Too many regulations and regulatory programs have suffered from inadequate analysis and discipline. Both the Legislative and Executive Branches must share responsibility – first, to address this problem, and second, to cure it. The Business Roundtable believes that existing and proposed regulatory programs should ensure that:

- Stated goals are in fact attainable.
- Each program or regulation is worth the added cost to the nation (in increased prices and lower wages and productivity, for example).
- Each regulation is the most efficient means to achieve its objective and minimizes adverse economic impacts.

Toward "Smarter" Regulation

The regulatory process must be reformed. Governmental resources at all levels must be allocated more rationally. And business must devote its resources to becoming more innovative and productive. The question is not only how the nation can reduce regulation, but also how we can regulate smarter. This question is crucial in both good and bad economic times.

The concept of smarter regulation is not novel. The increasing regulatory burden has led to a growing demand for reform across a spectrum of American society – from leaders of all business sizes, academics, public interest groups, government officials, and the general public. This demand has already sparked some important steps toward reform; indeed, Vice President Gore's recent National Performance Review report expressed alarm at the cost of regulation and concluded:

> We must clear the thicket of regulation by undertaking a thorough review of the regulations already in place and redesigning regulatory processes to end the proliferation of unnecessary and unproductive rules.[7]

To this end, President Clinton signed Executive Order 12866 on Regulatory Planning and Review on September 30, 1993. This Order carries forward the concern of the last three Administrations by calling for a vigorous regulatory planning and review process and embracing many principles that would improve both the regulatory process and regulations themselves.

However, the hard work necessary to "reinvent" regulation still lies ahead. To further this worthy goal, The Business Roundtable recommends that governments at all levels implement the following twelve tenets of rational regulation:

1. *Risk-Based Priorities and Public Education:* To provide more cost-effective protection to human health and the environment, regulatory priorities should be based upon realistic considerations of risk. Agencies must educate the public about the level of risks proposed for regulation compared to risks familiar to the public, as well as the cost of reducing that risk.

2. *Risk Assessment and Risk Management:* Risk assessment methodologies should be continuously improved, and agencies should establish a clear distinction between assessing risks and deciding how to manage them.

3. *Sound Science:* Agency decision making should be grounded on the most advanced scientific knowledge currently available.

4. *Benefit-Cost Analysis:* Benefit-cost analysis should be utilized by agencies when developing regulations, with preference given the least costly regulatory alternative that accomplishes program objectives.

5. *Market Incentives and Performance Standards:* Market-oriented solutions and performance standards should be favored over command-and-control regulation. They allow regulated parties to meet or exceed regulatory goals in the least costly way.

6. *Productivity, Wages, and Economic Growth:* Methodologies should be implemented and continuously improved to assess the impact of major regulations on wages, productivity, and economic growth, as well as the adverse impact on jobs and international competitiveness in industries that bear the burden of regulation.

7. *Coordination Among and Within Agencies:* Coordination of regulatory activities among and within agencies should be improved to eliminate inconsistencies, duplication, and unnecessary regulatory burdens.

8. *Openness:* The entire regulatory process, including centralized Executive review and management of agency rulemaking, should be open to public scrutiny to promote the quality, integrity, and responsiveness of agency decisions.

9. *Periodic Review:* Programs and regulations should be periodically reviewed for purposes of determining whether they should be reformed, discontinued, or consolidated.

10. *Federalism:* Regulatory authority should be more rationally allocated among the federal, state, and local governments, and federal regulatory programs should avoid unfunded mandates.

11. *Paperwork Burdens:* Paperwork burdens caused by regulatory programs should be expressly assessed and substantially reduced.

12. *Regulatory Budget:* A framework should be developed to account for expenditures required by regulations and to promote greater fiscal restraint on regulatory programs.

Each of these tenets is explored in greater detail below.

II. *Twelve Tenets of Rational Regulation*

1. Risk-Based Priorities and Public Education: To provide more cost-effective protection to human health and the environment, regulatory priorities should be based upon realistic considerations of risk. Agencies must educate the public about the level of risks proposed for regulation compared to risks familiar to the public, as well as the cost of reducing that risk. The escalating costs of regulation and limited resources available make it imperative to establish priorities in environmental, health, and safety regulation. Despite the vast and expanding investment in programs to protect public health and the environment, there is a growing realization that we are not spending our money in the most cost-effective manner to achieve the greatest possible advances. All too often, regulatory priorities are based on misguided public perceptions of risk instead of valid scientific knowledge and reasoned analysis. Accordingly, there is a pressing need to establish a risk-based approach to environmental, health, and safety regulation and to provide the public with better information for evaluating and comparing risks that are candidates for regulation. The goal is not to put economic values before human values, but to achieve effective risk reduction at a lower cost.

Risk-Based Priorities

The problem of protecting human health and the environment may best be defined as the management of risk. The failure to manage risk effectively and to establish priorities rationally translates ultimately into a failure to protect health, safety, and the environment. Through the use of *comparative risk assessment*, the government can estimate the relative levels of risk posed by different substances, products, and activities and can establish priorities in determining whether, and how, to regulate. The government, with public input, should use comparative risk assessment to compare the magnitude of various risks and set priorities where we can achieve greater protection of human health, safety and the environment in the most cost-effective manner.

- The Environmental Protection Agency has recognized the urgent need for a risk-based regulatory approach employing comparative risk assessment. In its landmark report, *Reducing Risk*, EPA warned: "There are heavy costs involved if society fails to set environmental priorities based on risk. If finite resources are expended on lower-priority problems at the expense of higher-priority risks, then society will face needlessly high risks. If the priorities are established based on the greatest opportunities to reduce risk, total risk will be reduced in a more efficient way, lessening threats to both public health and local and global ecosystems."[8]

Unfortunately, public fears and political expediency – not scientific analysis – often dictate the priorities set by legislatures and agencies. As a result, government risk-reduction efforts have been unplanned, uncoordinated, and inconsistent. Many risk-reduction programs simply have not been effective:

- Some very costly programs and regulations do not address the more serious risks.
  - Congress originally estimated that the Superfund program would cost $5 billion when it was enacted in 1980. Independent estimates now project the program will cost between $106 and $302 billion for Superfund and between $372 and $744 billion for related remedial programs[9] (in total, up to 25% of the national debt). Notwithstanding these enormous costs, a group of EPA professionals have ranked risks associated with hazardous waste sites well below other problems receiving far less resources."[10]
- Regulations based on uncertain or unsound scientific information are not revised when more reliable data is produced.
  - In January 1991, EPA's Office of Drinking Water eliminated the primary standard for silver because it determined that there were no adverse human health effects of silver in drinking water; yet the Office of Solid Waste continues to maintain silver on RCRA's toxicity characteristic list, even though the RCRA silver standard was based on the obsolete drinking water standard.[11]
- Some regulatory actions actually increase risk.
  - Early in the 1980s, government scientists argued that asbestos exposure could cause thousands of deaths. Congress responded by passing a sweeping law that led cities and states to spend between $15 and $20 billion to remove asbestos from public buildings. But three years ago, EPA officials acknowledged after further research that ripping out the asbestos had been an expensive mistake; it raised the exposure of the public because asbestos fibers had become airborne during

removal.[12] It also delayed the opening of many schools and other buildings.

Executive Order 12866 (Sec. 1(b)(4)) states:

> In setting regulatory priorities, each agency shall consider, to the extent reasonable, the degree and nature of the risks posed by various substances or activities within its jurisdiction.

The White House, the Office of Information and Regulatory Affairs, Congress, each agency, and the states should vigorously promote this policy. The Executive Branch should develop a current inventory of known risks, rank them, and periodically update the inventory every two to four years in light of new information. It should seek extensive public involvement in the process. EPA started towards this goal by creating and implementing two seminal reports, *Unfinished Business* and *Reducing Risks*. These reports were prepared by environmental experts who assessed, compared, and ranked the various environmental risks regulated by EPA

- *Unfinished Business* (1987) found that EPA and Congress in most instances had directed resources to problems based on misguided public fears, instead of objective scientific evidence.
- *Reducing Risks* (1990), produced by an independent committee of the Science Advisory Board, revised the risk rankings set forth in *Unfinished Business* and encouraged EPA to base its programs on the severity of risks and the availability of cost-effective options that would reduce the risks and not violate the Agency's statutory mandates.

The other health and safety agencies – including FDA, OSHA, USDA, and CPSC – would benefit from similar projects. Agencies should address highest priority risks first, rank new risks as they are identified in the future, and routinely communicate this information to the public. A coordinating group should be used to facilitate communication and long-term planning among agency leaders; Executive Order 12866 (Sec. 4(d)) provides such a mechanism by establishing the Regulatory Working Group.

Many other efforts could further the establishment of risk-based priorities. For example, President Clinton might issue guidance to agencies to require the use of risk analysis as a tool for making pollution prevention decisions. This would complement the President's recent Executive Order 12856, which was designed to make pollution prevention central to government operation and procurement. Moreover, a task force composed of scientific experts from the environmental, health, and safety agencies should create a government-wide manual on the regulation of risk. The manual would provide guidance to regulators on how to manage risks.

In the end, the responsibility lies with Congress and state legislatures to promote a risk-based approach to environmental, health, and safety regulation. The most effective legislation for controlling risk will promote risk assessment while providing the agencies with sufficient flexibility to incorporate state-of-the-art scientific knowledge. In the short term, Congress and state legislatures should require the risk-reduction agencies, such as EPA, to conduct comparative risk assessments to set priorities. An Office of Risk Analysis should be created in EPA and other agencies that need increased expertise in analyzing and ranking risks. As statutes are reauthorized, reformed, and created, Congress and state legislatures should require – not inhibit – the consideration of risk, costs, and benefits in designing regulatory policy. Legislatures should set clear goals for regulatory programs, and these goals should be understandable to the regulated community and the public.

Public Education: Improved Risk Communication

Risk communication is critical to establishing risk-based priorities that are acceptable to the public. The government must educate the public about the level of risks proposed for regulation compared with familiar risks, as well as the costs of regulating them. Agencies often fail to regulate in a cost-effective manner because priorities are based on misguided public fears. All too commonly, agencies fail to inform the public adequately about risks proposed for regulation or misinform the public by making biased or exaggerated risk estimates. This distorts the public's perception of risk, which in turn influences the legislature's agenda and leads to irrational and costly regulatory mandates.

Government has the responsibility to accurately inform the public about the level of risks and to minimize distortion and exaggeration of risks. *Risk communication* is an interactive process in which government, the public, business, media, and the environmental and scientific communities exchange information and opinions about risk and related concerns. In the past, risk communication has been viewed as a one-way channel from experts to the public, but risk communication should be a two-way street. Effective risk communication should satisfy the public that they are informed about the relevant issues within the limits of available knowledge. It should also generate information on which decision makers base their choices. This framework for effective risk communication should extend to all levels of the regulatory process.

To allow public involvement in the important decisions about whether, and how, to regulate various risks, government must educate the public about the risks to be regulated – in terms nonexperts can understand. This can be achieved through the process of *risk comparison*. Risks proposed for regulation that are unfamiliar to the public should be compared to familiar risks to convey the magnitude of the risk involved.

Risk comparison is critical to permitting the public to engage in the regulatory decision-making process. Moreover, risk comparison techniques are improving. One technique, risk ladders, improves the validity of risk comparisons by providing a range of probabilities for a single class of risk. Risk comparisons are most useful when they involve risks that occur in the same decision context, exhibit similar risk-perception attributes (such as whether they are voluntary or involuntary), and have similar outcomes. Multiple comparisons often will be more helpful than single comparisons. While the nature of different risks often varies in some respects, there should not be inflexible rules for comparing risks. The goal of risk comparison should be to enable the public to make informed choices about the risks they incur and the costs of reducing those risks. Government should inform the public about the relative magnitude of regulated risks, as well as those proposed for regulation, compared to risks commonly encountered and understood by the public. The government must also disclose to the public the potential cost of regulating those risks.

Environmental, health, and safety agencies should develop public risk communication programs. As part of their risk communication programs, agencies should summarize relevant qualitative and quantitative information on the nature of each risk, the nature of the benefits that might be achieved if the risk were reduced, the available alternatives, and uncertainty about risks, costs, and benefits. Agency risk messages should include an estimate of the magnitude of the risk as well as a characterization of the current or potential efforts to reduce it. This includes the cost and adverse consequences of regulating the risk, who must pay the cost, the effectiveness of various regulatory options, and whether regulation of the risk creates additional risks of its own. Agencies should use risk communication to educate the public so they can be involved in formulating policies and establishing priorities – not to generate support for predetermined conclusions.

Effective risk communication also requires that when agencies assess the size of risks and decide how to manage those risks, decision making should be open to the public. To improve the quality of risk communication with the public, agencies should: distinguish policy or judgmental considerations from scientific considerations when estimating the size of risks and deciding how to manage them; instead of using single-value or worst-case risk estimates, identify a range of credible risk estimates and their corresponding probabilities of occurrence; and disclose and explain any uncertainties in data or scientific knowledge. The important value judgments that must be made in deciding how to manage risks should be disclosed.

Risk communication should be based on a written record that is available to the public. A record facilitates understanding and improvement of the agency's decision. It also prevents surprise when information on a particular risk is disseminated and enhances the consistency and accuracy of that information.

Comparative risk assessment and risk communication provide the means for implementing a more effective and efficient approach to environmental, health, and safety regulation. Comparative risk assessment allows agencies to estimate the size of various risks so that rational priorities can be established and risk can be reduced in the most cost-effective manner. Risk communication enables the public to understand the magnitude of a risk proposed for regulation compared to familiar risks, as well as the costs of reducing that risk. If elected officials and regulators fail to implement this risk-based paradigm, we will lose the opportunity to better protect human health and the environment at less cost and to increase public confidence in the regulatory process itself.

2. Risk Assessment and Risk Management: Risk assessment methodologies should be continuously improved, and agencies should establish a clear distinction between assessing risks and deciding how to manage them. Recent scientific and technical advances have made it possible to improve the core of the regulatory process, risk assessment and risk management.

Risk assessment is the technical process for estimating the level of risk posed by a product or process – that is, the probability that a given harm will occur. Risk assessment, as applied to a substance, proceeds in four major steps: (1) hazard identification, determining what kinds of adverse health effects a substance, product, or activity can cause; (2) dose-response assessment, predicting the degree of adverse effects at a given exposure level; (3) exposure assessment, estimating the amount of exposure; and (4) risk characterization, combining the foregoing into a numerical range of predicted deaths or injuries.[11]

Once risk assessment estimates the risk, *risk management* – the policy-oriented or political determination of what to do about the risk – should be employed. Unfortunately, agencies often merge the primarily scientific process of risk assessment with the primarily political process of risk management. This undermines both the validity and quality of agency decision making.

Separate Risk Assessment and Risk Management

Risk assessment and risk management should be separated as much as possible – both by agencies when conducting risk analyses and by legislatures when designing statutes.

The risk assessment should constitute an agency's best effort to employ the most advanced scientific and technical methods to predict accurately the size of the risk. Because risk assessments often require assumptions to fill information gaps, however, the intrusion of subjectivity into science cannot be totally eliminated. This subjectivity has two components: scientific (or professional) judgment and policy judgment. Nevertheless, most intrusions of scientific and policy judgments can be identified, and these value judgments made in the risk assessment process should be clearly and fully disclosed to the public.[11]

Once the agency makes the most accurate and objective estimate of the relevant risks in the risk assessment process, it can then make an open decision on how best to address that risk in the risk management phase.

Improve Risk Assessment and Risk Management Methodologies

A number of steps can be taken to improve the risk assessment and risk management processes. First, risk assessment methodologies and guidelines should be reviewed and updated to reflect the state of the art. In the short-term, agencies should review their risk assessment guidelines and methodologies and make improvements where appropriate.

- The Clean Air Act Amendments of 1990 created a Risk Assessment and Management Commission and directed the National Academy of Sciences to prepare a report on EPA's risk assessment methodology. This helped motivate EPA to reconsider and update its risk assessment guidelines.

The White House and Congress should strengthen the expertise of the Office of Science and Technology Policy in risk analysis. OSTP could be assigned the responsibility to develop detailed guidance for agencies on how best to use science in the evolving risk assessment process and to develop government-wide risk assessment guidelines. Uniform risk assessment guidelines could also be developed by an interagency committee or by experts outside of government. Those guidelines would:

- bolster the credibility of agency risk assessments;
- prevent duplication and foster joint risk assessment efforts among agencies regulating the same substance;
- define the types of data and interpretations relevant to agency testing procedures and help the regulated community to understand agency decisions; and
- promote uniform risk assessment procedures among the states.

Greater efforts are also needed to develop a more complete and current database of relevant scientific data to be used in the risk assessment process. The lack of scientific data and the uncertainty about various risks significantly hinder measuring and comparing risks accurately. The growing volume and reliability of scientific data, however, have greatly improved the risk assessment field. The data decrease the need to rely on inference and informed judgments to bridge gaps in scientific knowledge.

The government should establish a mechanism that would allow new scientific information to be easily and quickly incorporated into the risk assessment process. This mechanism should allow for information to be provided by the agencies, academia, business, and the general public. Agencies also should establish procedures to reevaluate risk assessments and risk management decisions in light of scientific advances.

In addition to improving risk assessment methodologies, agencies should favor cost-effective approaches in the risk management phase as a matter of policy. Once the risk assessment process identifies the level of risk posed by a substance, product or process, policymakers should consider the full range of options for reducing or eliminating the risk. The principle for choosing among options should be reducing risk in the most cost-effective manner. Regulatory options should be analyzed in light of the full spectrum of costs and benefits (including risks of alternatives and the economic consequences of the regulation).

Risk assessment and risk management are promising tools for helping regulators achieve the ultimate goal of our environmental, health, and safety programs – greater reduction of risk to health and the ecology with our limited resources.

3. Sound Science: Agency decision making should be grounded on the most advanced scientific knowledge currently available. The difficulty of allocating limited resources for maximizing risk reduction is compounded by the common failure of agencies to base their analyses on the most advanced scientific principles. Without sound science, risks cannot be accurately assessed and effectively compared.

Science and technology are constantly evolving and improving; often they outpace the life cycle of regulations. Indeed, some regulations may become obsolete before they are adopted. This makes it all the more imperative that agencies use the most advanced and precise scientific methods to calculate risk estimates that form the basis for agency decisions. Moreover, agencies should regularly update their regulations and programs to incorporate advances in scientific knowledge.

To establish priorities and make regulatory decisions, agencies often must compare the size of various risks by using risk assessments. Unfortunately, agencies often lack complete data, leading to scientific uncertainty. To compensate for scientific uncertainty, agencies must rely on default assumptions, which are sometimes codified in infere guidelines. To increase the reliability and credibility of their risk assessments, agencies should strive to structure their default assun tions and inference guidelines so that they will accurately reflect re. risks. In characterizing risks, agencies should consider the probabil that estimated risk values approximate the true size of the risks.

When faced with gaps in scientific data, agencies all too often have used a series of worst-case default assumptions and upper-bound probability estimates throughout the risk assessment process. The cumulative effect of these highly conservative assumptions may be to produce greatly exaggerated estimates of risk.

Agencies often base their decision on single-point estimates of risk, which assign a single value for a risk estimate. Typically, agencies incorporate policy judgments into single-point risk estimates by basing them upon highly conservative or worst-case estimates. Sing point estimates, however, do not reveal the degree to which risk estimates are both uncertain and highly conservative. Unrealistic r estimates, however, undermine the credibility of agencies' scientific methods, can cause undue public alarm, prevent cost-effective regu lations, and limit the public's ability to understand and respond to regulatory decisions.

Common agency practices contribute to biased risk estimates:

- Agencies often use highly conservative or worst-case assumptio for exposure estimates when more accurate data are available.'
    - ➤ OSHA bases occupational cancer risks on the assumption tha a hypothetical worker is exposed at the permissible exposur limit 8 hours per day, 5 days per week, and 50 weeks a year, for 45 years."
    - ➤ EPA sometimes assumes that an individual is exposed to emi sions at a distance of 200 meters from the factory, 24 hours a day, every day, for 70 years."
- Regulators often assume that there is a linear relation between the dose of a substance and its response or effect when there is scientific rationale for the assumption."
- Researchers sometimes base their research on reactions of anim that are most sensitive to the substance under review, instead o

> using animals that would best replicate a human reaction to the substance."

When regulators lack information for a value or parameter needed for a risk estimate, they should use uncertainty analysis techniques. Uncertainty analysis techniques identify a range of possible values and their probability of occurrence. To promote public accountability, agencies should explain assumptions, inferences, and value judgments made in the risk assessment and characterize their impact on the estimated value of the risk.

Although risk assessments should provide a range of risk values to indicate data limitations and scientific uncertainty, the "best estimate" of risk – the most credible estimate possible from available scientific information – should be provided for policymakers and the general public in the risk management phase.

The use of sound science is only one tool for improving regulation, and it does not relieve political leaders and regulators of the responsibility for making the inevitably difficult decisions required. But it will help prevent misallocating vast resources to reduce inconsequential risks, will promote open decision making, and will increase public confidence in the regulatory process. Ultimately, the public will benefit.

Executive Order 12866 (Sec. 1(b)(7)) emphasizes the importance of sound science:

> Each agency shall base its decisions on the best reasonably obtainable scientific, technical, economic, and other information concerning the need for, and consequences of, the intended regulation.

The White House should work with agencies to promote this goal and should hold them accountable for adhering to it throughout the regulatory review process, and state agencies should apply this same principle.

Moreover, agency scientific and technical expertise can be improved at the federal and state level. As EPA has proved, agencies can effectively use outside experts to analyze internal scientific capabilities and to recommend structural improvements. Federal agencies such as OSHA and state environmental agencies should emulate EPA and FDA and create scientific advisory panels to participate actively their strategic planning and internal reform processes.

Science should be institutionally represented in agency decisions that depend on scientific evidence. Scientists can validate analytical methods and procedures, even if the ultimate regulatory decision will be based partially on science and partially on policy. Periodic outside review procedures bolster the scientific credibility of agency decision making.

Emphasis on the scientific soundness of the regulatory process will make that process more credible and transparent. It should reduce the tension among the White House, Congress, the agencies, and the states and should increase public confidence in regulatory policy.

4. Benefit-Cost Analysis: Benefit-cost analysis should be utilized by agencies when developing regulations, with preference given the least costly regulatory alternative that accomplishes program objectives. Every regulatory program consumes financial resources – of the government that is regulating, of the regulated community that must comply with the regulations, and, ultimately, of the consumers of the product or activity that is regulated. Since resources are limited, the government should maximize the benefits and minimize the costs of regulation, so that resources are not squandered. To further this goal, agencies should make better use of benefit-cost analysis, in which the benefits are weighed against the costs of a regulatory proposal *before* decisions are made and regulations are implemented.

Benefit-cost analysis generally proceeds in the following four steps: (1) identifying relevant impacts, (2) calculating monetary values for impacts, (3) discounting for time and risk, and (4) choosing among policies. First, all relevant impacts of a proposed action must be identified and classified as either costs or benefits. Second, impacts must be valued. When there is no organized market to value an impact, innovative techniques are required. Third, values should be discounted for time and risk. Costs and benefits accruing in different time periods should be discounted to their present values. When costs and benefits involve uncertainties, analysts should attempt to assign probabilities to various contingencies so that expected net benefits can be calculated. Finally, when efficiency is the primary goal, the combination of policies that maximizes net benefits should be preferred.

Even when values other than efficiency are important, or major impacts cannot readily be estimated in monetary terms, benefit-cost analysis is still useful since its first step – identifying and categorizing impacts as benefits or costs – can provide a starting point for better decision making.

In the first instance, federal and state agencies should use benefit-cost analysis to decide whether or not a proposal should be a candidate for adoption – whether its benefits exceed its costs. Second, agencies should use cost-effectiveness analysis to select the regulatory option that achieves regulatory objectives in the least costly way. This analysis should be applied both to substantive regulations and to the administrative process established to implement them, including procedures for issuing permits and reviewing compliance. Benefit-cost analysis should be promoted by the Legislative and Executive Branches at the federal and state levels.

The White House and governors can and should play a central role in promoting the use of sophisticated benefit-cost analysis. Without tight constraints imposed by centralized Executive review under a benefit-cost standard, each agency has an incentive to pursue whatever goal has been set for it by the legislature without regard for other, equally important programs outside of its jurisdiction. This leads to inconsistent, duplicative, and burdensome regulatory requirements, as well as the misallocation of government resources.

To counter this tendency, the White House, through OIRA, as well as governors, can emphasize the importance of benefit-cost analysis and encourage all agencies to set priorities based upon this analysis. The potential gains to be realized by strong centralized review of proposed regulations under a benefit-cost standard, coupled with joint planning by an interagency group, are clear: better policy coordination; enhanced political accountability; and, ultimately, more balanced regulatory decisions.

Executive Order 12866 (Sec. 1(b)(6), (5)) directs agencies to use benefit-cost and cost-effectiveness analysis:

> Each agency shall assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.
>
> * * *
>
> When an agency determines that a regulation is the best available method of achieving the regulatory objective, it shall design its regulations in the most cost-effective manner to achieve the regulatory objective.

Agencies thus are required to conduct a full benefit-cost analysis of significant regulatory actions as part of the decision-making process. Sec. 6(a)(3)(C). The White House and governors should hold agencies accountable for vigorously implementing this basic principle.

Federal and state agencies themselves should promote improved benefit-cost analysis by developing and using standardized guidelines for analyzing the costs and benefits of their regulations. Agencies that already have such guidelines – such as EPA – should periodically review and improve their guidelines in cooperation with other agencies and with the White House or the governor.

Further, when agencies estimate costs, they should attempt to estimate the *full* costs of regulations, not just *compliance* costs. Regulators should carefully consider the potential impact of each regulatory option. Agencies also should consider as a cost the potential benefits foregone by regulation of an activity or substance. If some costs and benefits are nonquantifiable, they should at least be identified.

- Various regulatory options can have different impacts on behavior; behavior induced by some options can actually increase risk.
  - ➤ The National Highway Traffic Safety Administration was confronted with data suggesting that a refusal to relax its fuel efficiency standards for automobiles could increase fatalities from auto accidents. All other things being equal, a large car is safer than a smaller car. However, NHTSA failed to consider whether its "corporate average fuel economy" standards, which promoted smaller cars, could increase automobile fatalities. Accordingly, the D.C. Circuit remanded a CAFE rulemaking decision to NHTSA for further consideration of the potential safety costs of its fuel-efficiency regulations.[20]
- Regulatory costs include foregone benefits.
  - ➤ If a pesticide is banned, food may cost more because less could be produced.[21]

Finally, Congress and state legislatures should promote, not inhibit, benefit-cost analysis. In many instances, agencies are constrained by restrictive legislative requirements or oversight.

- The Clean Air Act prohibits EPA from considering costs of any kind, much less using benefit-cost analysis, in setting air quality criteria.[22]
- The Supreme Court has interpreted the Occupational Safety and Health Act to prohibit OSHA from basing certain regulations on a formal benefit-cost test.[23]

Accordingly, there is a pressing need for fundamental legislative reform to incorporate benefit-cost principles in statutes. Congress and state legislatures should design legislation to avoid an "at-any-cost" approach to achieving regulatory goals.

- Since EPA, OSHA, and CPSC were established in the early 1970s, many of the larger, more obvious risks have been reduced. As agencies continue to try to reduce smaller, more intractable risks, the cost and complexity of regulations are sharply rising.[24]
- Sometimes programs have standards so stringent that they impose unreasonably high costs without achieving significant additional safety benefits.
    - ➤ In environmental cleanups, for example, it can be extremely expensive to achieve cleanup levels beyond a certain point. At one Superfund site that was mostly cleaned up, an added $9.3 million was spent to meet the program's stringent cleanup standards. The benefits were miniscule: the extra expenditure theoretically meant that the children could safely eat dirt for 245 days per year instead of 70 days annually. But there were no children in the area because it was a swamp. And children were not likely to be there in the future because future development was improbable. Finally, half the volatile organic chemicals probably would have evaporated by the year 2000.[25]

Congress and state legislatures should encourage agencies to balance costs and benefits when designing regulatory programs. Otherwise, federal and state agency efforts to improve regulation may be frustrated by inflexible legislative mandates.

- The Toxic Substances Control Act is a well-designed risk-reduction law based on sound benefit-cost principles. Section 6 of TSCA authorizes EPA to impose a range of controls on a chemical substance or mixture if it poses an "unreasonable risk of injury to health or the environment." In applying the concept of "unreasonable risk," EPA must balance the health or environmental risk of a chemical against the economic or social disadvantages of eliminating or restricting the availability of the chemical.

Estimating benefits and costs can be difficult, especially in areas where many benefits are by their nature difficult to quantify. Nonetheless, because limited resources necessitate difficult trade-offs, agencies must make best estimates for benefits and costs – stating clearly and publicly the bases for those estimates – and regulate only where the benefits justify the costs. Once a regulatory goal is established, agencies should select the least costly option for meeting that goal.

5. Market Incentives and Performance Standards: Market-oriented solutions and performance standards should be favored over command-and-control regulation. When properly calibrated and used, market-based approaches and performance standards cost less and accomplish more than government commands and controls. The past three Administrations have advocated that regulators use market mechanisms as much as feasible. Most recently, Executive Order 12866 (Sec. 1(b)(3), (8)) states:

> Each agency shall identify and assess available alternatives to regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices may be made by the public.
>
> * * *
>
> Each agency shall identify and assess alternative forms of regulation and shall, to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt.

Market Incentives

Market-based regulatory schemes attempt to reproduce the efficiency of a free market by internalizing the costs of the regulated activity or substance, such as pollution, into private production or investment decisions. Market incentives allow regulated parties to achieve compliance in the least costly way, reward innovators who meet or exceed regulatory goals, and adapt to changed circumstances more quickly than government commands and controls.

Typically, regulations apply to a wide variety of activities and firms. Because compliance costs can differ dramatically among activities and firms, uniform standards often impose widely varying incremental costs for achieving a specific benefit. Economic incentives minimize regulatory costs; they allow firms unable to achieve compliance efficiently to buy permits or allowances from low-compliance-cost firms, while encouraging firms that can meet regulatory goals to do so most efficiently. In short, market incentives divert fewer public and private resources and reduce adverse economic consequences to obtain the same – or greater – benefits.

- The acid rain trading allowance program for sulfur dioxide emissions exemplifies the market-incentive approach to regulation. This program provides substantially reduced regulatory costs by providing an economic incentive for least-cost emissions sources to reduce their emissions first. The Clean Air Act Amendments of 1990 set a limit on yearly sulfur dioxide emissions that power plants must meet by the year 2010 (with lesser caps at intermediate deadlines). EPA will allocate annual allowances for emissions sources to meet their individual emissions limits, which are based on reducing their historical average emissions. The allowances can be banked for future use or sold to other emission sources that have higher compliance costs. EPA has estimated that the program could reduce compliance costs by nearly $1 billion per year – about one-fourth of the total cost of achieving its goal without emissions trading.[26]

Economic incentives also induce innovators not only to develop less costly means of meeting a regulatory standard, but also to find ways to exceed the minimum standard and to reap rewards for doing so through cost savings or revenues from credits sold to firms who do not meet the minimum requirements. In contrast, command-and-control regulations provide no incentive for regulated parties to exceed a regulatory goal;[27] they may actually punish firms that do so.

Finally, market incentives are flexible; they allow firms to adapt as their relative compliance costs change over time. Command-and-control regulations usually cannot adapt to changed circumstances without the burdensome costs and delays of new regulatory action. Accordingly, market incentive approaches should be favored over command-and-control regulation.

Performance Standards

To set a regulatory standard, agencies can choose between basing the standard on design or performance. Design standards specify how a product should be built, what technology should be used, or precisely how to reach a regulatory goal. Performance standards, on the other hand, establish the ultimate regulatory goal. They free regulated parties to achieve that goal in the best way they can find. Performance standards generally are superior to design standards: They allow the regulated community to meet or exceed the regulatory goal in the most cost-effective manner.

Design standards may be more attractive to the government because they sometimes are easier and cheaper for agencies to enforce than performance standards. For example, inspectors can verify compliance simply by determining whether a manufacturer is using mandated equipment. But typically, the "savings" from imposing design standards are illusory. Any administrative savings usually are far outweighed by the large costs imposed on the regulated community by design standards. These costs are passed on to the public through higher prices and diminished wages, productivity, and economic growth.

Design standards freeze technology and impede innovation that can produce better results at less cost. An innovative firm that invents a more cost-effective way to meet or exceed a regulatory goal must overcome the heavy burden of changing the agency's standard before it can implement its better method. Accordingly, performance standards should be used when performance can be measured or reasonably estimated. It simply makes no sense to impose the enormous costs and inefficiencies associated with design standards to reduce enforcement costs by a relatively small margin.

In contrast to design standards, performance standards promote innovation to increase safety and reduce costs. Because agencies must consider the comparative performance of different machines or products to write the regulatory standard in the first place, it can be as easy for the agency to base its standard on performance goals, such as fewer injuries or cleaner air.

In some instances, "performance" and "design" standards tend to converge. A standard should not be characterized as a performance standard if there is only one feasible way to meet it; such a standard is a design standard. Although agencies sometimes transpose performance and design standards, there is a fundamental tension between allowing innovation to improve safety and reduce costs and setting a rigid, easily identifiable standard merely to make the agency's enforcement job easier.

- Under the Resource Conservation and Recovery Act, firms must treat hazardous wastes under "best available technology" standards. Instead of setting a clear standard based on health and environmental risks, the BAT standard changes with each advance in waste treatment. This design standard imposes enormous costs without regard to the actual threat to human health or the environment.[27]

In light of the vital importance of encouraging continual improvements in safety at less cost, performance standards should be preferred over design standards.

Both statutes and regulations should favor market mechanisms and performance standards over commands and controls. Instead of trying to mandate what technologies business should use or how to meet a standard, legislatures and agencies should set standards and then allow the market to develop the most efficient ways to attain them. Mandating *ends*, not *means*, usually offers the most effective form of regulation.

6. Productivity, Wages, and Economic Growth: Methodologies should be implemented and continuously improved to assess the impact of major regulations on productivity, wages, and economic growth, as well as the adverse impact on jobs and international competitiveness in industries that bear the burden of regulation. American businesses of all types, large and small, face increasing competition from foreign competitors in a global economy. Today's global competition is heightened by significant world-wide industrial overcapacity – a factor many believe will be the defining characteristic for the 1990s.

- In key industries – steel, coal, chemicals, textiles, pulp and paper, automobiles, shipbuilding, aircraft, computers, home appliances, and defense – global overcapacity is resulting in a major restructuring.
- Those firms that cannot compete on price and quality will be driven out of business, which means that jobs will be lost, wages weakened, and tax bases eroded.
- Efficiency and productivity will determine who are the winners and losers; government policies can either advance or retard these objectives.

In response to these economic pressures, successful American corporations are significantly altering the way they conduct their business to become leaner, more flexible, and faster. In this new economic world, the slow-moving, pyramidal corporate structure of the past is facing extinction.

For our economy to grow, regulatory and economic goals must become complementary, not conflicting. Government must make greater efforts to promote productivity, economic growth, and innovation within the regulatory framework and must become more sensitive to the impact of regulation on wages, prices, jobs, and international competitiveness.

Executive Order 12866 (Sec. 6(a)(3)(C)(iii)) requires that benefit-cost analyses of significant regulatory actions include an assessment of their impact on employment, competitiveness, and productivity. The nation would benefit from greater consideration of the industry-wide and economy-wide impacts of regulation.

- A 1993 report by the National Commission for Employment Policy recommended the development of economic models to assess the effects of regulations on jobs and wages.[28]
- In Section 811 of the Clean Air Act Amendments of 1990, Congress directed the President to report on the economic impact of air pollution controls on the international competitiveness of U.S. manufacturers. The American Automobile Manufacturers Association has compiled a report documenting that their competitors operating in countries with more flexible and less prescriptive rules enjoy a significant cost/production advantage over U.S. automobile manufacturers that face onerous requirements on their manufacturing facilities. The new permit rules under Title V of the Clean Air Act can unnecessarily restrict production and operational flexibility without commensurate environmental benefit; this flexibility is critical to the ability of U.S. manufacturers to respond to dynamic market conditions and international competitive pressures.[29]

- A study recently conducted for the U.S. Census Bureau found a strong correlation between regulation and reduced productivity. The study found that significantly regulated plants have substantially lower productivity and slower productivity growth rates than less regulated plants. The magnitude of the impacts were found to be larger than expected: A $1 increase in pollution abatement costs reduced productivity by about $3 - $4.[9]

More information is becoming available on the negative effects of regulation on wages, productivity, and economic growth, as well as the differential economic impact on jobs and international competitiveness in many industries. Because these issues are vitally important to the American people, they should be directly considered when legislatures and agencies make regulatory decisions. The Legislative and Executive Branches at the federal and state levels should promote the use and improvement of state-of-the-art analytical tools to assess the economic impacts of regulations.

7. Coordination Among and Within Agencies: Coordination of regulatory activities among and within agencies should be improved to eliminate inconsistencies, duplication, and unnecessary regulatory burdens. Regulatory agencies have a variety of mandates that overlap – among agencies, including federal and state agencies, and even between different programs of a single agency. Consequently, there is a need for greater coordination of regulatory activities among and within agencies.

Interagency Coordination

To reduce duplication and inconsistency, a strong coordinating committee is needed to identify and address interagency problems. Executive Order 12866 (Sec. 4(d)) provides for the establishment of an interagency committee – the Regulatory Working Group – that can perform this function at the federal level.

Through the Regulatory Working Group or a similar interagency committee, agencies should engage in strategic planning to address problems before regulations are proposed. Where significant environmental, health, or safety problems demand action from multiple agencies, the interagency committee should coordinate common risk-reduction approaches for the agencies involved. The committee should rank the relative risks posed by particular problems in an effort to maximize risk-reduction in a cost-effective way. The relative risk rankings could be updated periodically. An interagency committee could also promote the exchange of information among agencies and make each agency more sensitive to existing regulations from other agencies. The committee also could identify common research needs and allocate responsibility for fulfilling those needs among agencies. Finally, to address overlap and inconsistency originating in statutory requirements, the interagency committee could develop a forward-looking, comprehensive legislative program.

The strategic planning process should be open, incorporating views from the general public, including business, academia, and public interest groups. This strategic planning process could be used to educate Congress and involve the public in the decision making. Agencies could exchange information, data, and feedback, which would facilitate improvements in regulations and laws. These tenets of rational regulation should guide this process.

Intraagency Coordination

In addition to interagency coordination, there is a need for greater coordination of programs within each agency as well. Individual program offices within an agency often are assigned responsibility for implementing a specific law or part of a law. This narrow approach, and the growing complexity of statutes and regulations, has fragmented many programs, even within the same agency. Different programs often attempt to control different aspects of the same problem. Without coordination of programs, inconsistencies, unproductive duplication, and outright conflicts may result.

- EPA's Office of Solid Waste and Emergency Response at one time designated trace levels of carbon tetrachloride and chloroform found in chlorofluorocarbons as hazardous waste, thus discouraging refrigerator recyclers by threatening them with Superfund liability. Meanwhile, EPA's Office of Air and Radiation was urging that refrigerators be recycled to preserve the ozone layer. At the same time, the FDA allowed CFCs to be used in asthma inhalers.[10]

Agency efforts to coordinate regulatory programs should focus on reducing risks in the most cost-effective way. When properly designed and implemented, regulatory programs that address multiple environmental media, such as air, water, and land, have great potential to reduce both risk and costs. Unfortunately, the emphasis on highly prescriptive media-specific regulation in current environmental laws often creates obstacles to cost-effective regulation.

- An ambitious joint pollution prevention study recently conducted by EPA and Amoco Corporation illustrates the cost of inflexible, media-specific regulation. The study found that if Amoco's Yorktown, Virginia refinery had been free to pursue a flexible, performance-oriented approach to pollution prevention, 90% of the emissions reductions required under applicable regulations could have been achieved for 20-25% of the cost of meeting the specific regulatory requirements. In particular, if a performance-oriented approach to emissions reduction had been followed, releases at the refinery could have been reduced at an average cost of $510 per ton, as opposed to the $2,400 per ton average cost of achieving reductions under EPA's prescriptive command and control regulations.[14]

The Executive Branch has the responsibility to ensure that its programs are coordinated and consistent. Fulfilling that responsibility should become a higher priority.

8. Openness: The entire regulatory process, including centralized Executive review and management of agency rulemaking, should be open to public scrutiny to promote the quality, integrity, and responsiveness of agency decisions. Openness is indispensable to the entire regulatory process, including regulatory planning and development, as well as centralized Executive review of agency rulemaking. Openness brings obvious benefits:

- The input of an informed public and the regulated community improves the quality of agency decisions.
- Openness will help ensure that the values and concerns of the public are addressed by regulators.
- A better informed public will have greater confidence in the regulatory process and the validity of decision making.
- With a better understanding of the regulatory requirements, the regulated community can more faithfully comply with them.
- Fewer legal challenges to final regulations are likely to ensue.

Removing Secrecy

The regulatory process should be open to maximum public involvement at the earliest stages. Executive Order 12866 (Sec. 6(b)(4)) recognizes the need for openness. This policy should be nurtured and expanded. For example, OIRA should disclose written communications from those outside of the government before a rule is published. The White House should also require agencies to publish their Regulatory Plans when they are submitted to OIRA for review. Regulatory analysis documents that detail the costs and benefits of regulations also should be available to Congress and the public, even if they include information or considerations that the agency may not actually use to create a rule. More generally, the public should have access to the identities and positions of participants in the regulatory process.

Regulatory Negotiation

Agencies also could make better use of negotiated rulemaking, or "reg neg." To draft a rule, an agency can bring together representatives of interested parties for face-to-face negotiations, with the goal of achieving consensus on the proposed language. The primary goal of "reg neg" is to produce better rules, but it also avoids protracted litigation and reduces enforcement costs.

President Clinton recognized the benefits of regulatory negotiation in a Directive that accompanied Executive Order 12866. The Directive requires each agency to identify at least one rulemaking to be developed through negotiated rulemaking.[15] Although not always feasible, agencies should consider using "reg neg" more often, on a wider basis, and earlier in the regulatory planning process. Typically, the short-term costs of regulatory negotiation are fully justified by its many benefits.

In sum, openness can improve the quality and integrity of agency decisions and increase public confidence in the regulatory process.

9. Periodic Review: Programs and regulations should be periodically reviewed for purposes of determining whether they should be reformed, discontinued, or consolidated. As circumstances and technology change, regulations can become outmoded, duplicative, or unnecessary. As an indispensable part of good regulatory management, Congress, the White House, agencies, and states should periodically review existing regulatory programs to determine whether they should be reformed, discontinued, or consolidated.

Legislatures ordinarily operate under the assumption that programs should continue unless there is an overwhelming reason to curtail them. By conducting periodic review, legislatures can ensure that government resources are allocated to best address the needs of the public. Periodic review should allow for government-wide coordination and priority setting through reforming or eliminating regulations, updating scientific methodologies, reorganizing an agency, or reallocating responsibility among agencies.

In appropriate instances, Congress and states legislatures can ensure a stricter review process by incorporating sunset provisions in regulatory programs. Sunset is a powerful tool for managing the proliferation of government programs: Within set deadlines, the legislature is compelled to evaluate and vote for the continuation of a program, or it will terminate. This forces a review of priorities. Programs that are not rational or justifiable – perhaps because they have simply outlived their usefulness – can more readily be eliminated or incorporated into other programs. Routine periodic review of duplicative or overlapping programs provides an opportunity for Congress to consolidate them, even if it decides the programs should be continued. If similar programs are reviewed at the same time, Congress can more readily compare their effectiveness and streamline and rationalize them.

Regulatory programs would also benefit from periodic review by the Executive Branch. Executive Order 12866 (Sec. 5(a)) requires each federal agency to develop a program for periodically reviewing its existing significant regulations to determine whether they should be modified or eliminated to make the agency's regulatory program more effective, less burdensome, and more consistent with the President's priorities and principles set forth in the Executive Order. However, the White House does not now have in place a formal process for timely oversight and execution of these important reviews; it should develop and implement such a process without delay. The President also should issue a Directive, like the Negotiated Rulemaking Directive, to require each agency to identify and review at least three significant regulations.

Finally, agencies – individually or through an interagency coordinating group – should themselves initiate periodic review of their programs to eliminate outdated, duplicative, and irrational regulations. Where legislative authority is required to terminate or modify unproductive, outdated programs, the Executive Branch should aggressively pursue legislative action.

10. Federalism: Regulatory authority should be more rationally allocated among the federal, state, and local governments, and federal regulatory programs should avoid unfunded mandates. The expansion of government regulation has raised concerns about the rational allocation of regulatory authority and costs among federal, state, and local governments.

Allocation of Regulatory Authority

The growth of government regulation in recent decades has taken place at both the federal and state levels. In some cases, such as pollution control and waste disposal, new and expanded federal programs have supplanted state and local regulation. In other cases, states have added new and costly regulations of their own – both in areas that were traditionally matters of state policy (such as automobile insurance) and in areas that were traditionally matters of national policy (product labeling). The growth of state regulation has been encouraged by Supreme Court decisions that take a more lenient approach toward state policies affecting and burdening interstate commerce.

The mix of centralized national regulation in some areas and an array of state regulations in other areas has not always been a good one for American consumers and businesses. The traditional virtues of federalism – decentralization and responsiveness to varying local circumstances – remain important today. At the same time, however, markets, production technology, and business organization have become increasingly national and international in scope. State regulation that made sense at a time of primarily local markets can produce highly costly and wasteful conflicts and duplication where national businesses are affected. This is often the case today. For businesses whose products are sold nationwide and abroad, inconsistent and duplicative state regulation increases prices and chills productivity, wages, economic growth, and innovation.

Modern commercial realities demand a more cost-effective balance of federal and state regulation; achieving this balance is primarily the responsibility of the federal government. In general, three factors should be considered in determining whether the federal government should preempt and regulate a field itself or leave the field to the states:

- Is the problem primarily a national one, with little variation in the nature of the problem among states and regions?

- Will state regulation lead to needless duplication of effort, costly conflicts among differing state rules applicable to national markets and national business firms, or opportunities for individual states to pursue local policies at the expense of citizens of other states?
- Does the policy in question present important controversies and uncertainties, so that state policy experimentation may produce new information to resolve the uncertainties?

These guidelines will not resolve every controversy over regulatory jurisdiction, but they do suggest several areas where large improvements could be made. For example, to the extent that regulation of the labeling of foods, beverages, and other products that are distributed nationally is appropriate, these regulations should be national rather than local: The costs of differing labels in different states is very large, while the benefits are small or nonexistent.

On the other hand, many pollution problems are primarily local or vary in severity from locality to locality; federal regulation to address these problems may still be justified (where a single item of commerce is involved, such as automobiles, or where necessary to overcome "NIMBY" – Not In My Backyard – problems), but should be resorted to with care. Transportation regulation presents states with numerous opportunities for imposing price and service controls that are paid for by citizens of other states, and the trend toward greater preemption in this area is appropriate and should be continued.

When Congress appropriately determines to preempt state regulation, it should not adopt a one-way approach that preempts only weaker, but permits more stringent, state regulation. This approach loses the benefits of preemption without gaining offsetting benefits from state experimentation.

Unfunded Mandates

The federal government also regulates state and local governments directly in the course of administering federal expenditures and federal programs. As the federal budget deficit has soared, Congress has increasingly used unfunded mandates. *Unfunded mandates* require state and local governments to administer or comply with federal programs, but do not include funding for the costs of administration or compliance. These unfunded mandates burden state and local governments in the same way that regulations burden business.

Unfunded mandates force state and local governments to raise taxes, cut services, or potentially to face bankruptcy. Likewise, regulations require businesses to raise prices, eliminate jobs or product lines, cut research and development, or even go out of business entirely.

Congress has imposed numerous obligations on the states to fund programs designed to achieve federal objectives. While this pattern has been familiar for some time, it has become even more significant in the 1990s. Unfunded programs do not appear in the federal budget deficit, yet they impose very real costs at the state and local levels. These programs threaten to overwhelm state and local governments who fear that raising taxes for businesses and consumers will stifle economic growth and jobs and hence erode the tax base.

- The City of Columbus, Ohio has had to comply with 67 new environmental mandates since 1988. Columbus is expected to spend $1.3 billion to $1.6 billion on environmental compliance from 1991 to 2001. In 1991, the average Columbus household paid $160 for environmental protection; by 2001 this cost is projected to rise to $856 per household, or more than the per-household cost of fire or police protection.[illegible]

The federal government should not burden state and local governments with unfunded mandates, especially where the benefits of a program do not fully accrue at the state or local level. Clearly, duplicative and inconsistent regulation must be prevented. Nonetheless, programs should be sufficiently flexible to facilitate innovation at the state and local level. In some instances, the federal government could define a program's objective (comparable to performance standards), but allow state and local governments to achieve those outcomes by the means they think best. When practical, agency leaders should grant waivers to allow state and local governments to experiment with innovative programs that may more efficiently achieve regulatory goals.

Executive Order 12866 (Sec. 1(b)(9)) recognizes the need to reduce unfunded mandates and to provide greater flexibility to state, local, and tribal governments:

> Whenever feasible, agencies shall seek views of appropriate State, local, and tribal officials before imposing regulatory requirements that might significantly or uniquely affect those governmental

> interests. Each agency shall assess the effects of federal regulations on State, local, and tribal governments, including specifically the availability of resources to carry out those mandates, and seek to minimize those burdens that uniquely affect such governmental entities, consistent with achieving regulatory objectives. In addition, as appropriate, agencies shall seek to harmonize Federal regulatory actions with related State, local, and tribal regulatory and other governmental functions.

This policy is supplemented by Executive Order 12875, which calls for reducing unfunded mandates; increasing waivers from federal requirements for state, local, and tribal governments; streamlining the process for applying for waivers; and providing greater consultation with those governments on federal matters that uniquely affect their interests. These concepts should be vigorously implemented and should be applied to regulated businesses as well.

11. Paperwork Burdens: Paperwork burdens caused by regulatory programs should be expressly assessed and substantially reduced. In our vast regulatory system, paperwork burdens impose huge costs. Federal paperwork burdens alone have been conservatively estimated to consume over 6.4 billion person-hours per year in the private sector – at a cost of at least $128 billion – merely to collect, report, and maintain information.[19] This does not include the massive person-hours federal employees spend on processing and evaluating the information.[20] Furthermore, paperwork burdens are a symptom of unreasonable administrative process requirements – complex, bureaucratic, and adversarial procedures for obtaining permits, reviewing compliance, and the like. These administrative processes impose massive and unnecessary costs by causing delay, frustrating innovation, and impeding process and facility changes that U.S. business must make to meet world competition.

Congress recognized the need to reduce the paperwork burden by passing the Paperwork Reduction Act of 1980, but this statute has not been effectively implemented.

- The Paperwork Reduction Act of 1980 was designed to minimize the federal paperwork burden for individuals, small businesses, state and local governments, and other persons; to minimize the cost of information collection to the federal government; and to maximize the usefulness of the information to the federal government. The Act established OIRA and delegated it responsibility for coordinating government information policies, including reviewing and controlling agency collections of information.

Despite the many benefits promised by the 1980 Act, it requires much stronger implementation, and further initiatives to reduce paperwork are imperative. Stringent goals for reducing paperwork requirements are needed at all levels of government. The anticipated paperwork requirements of future legislation should be thoroughly assessed prior to enactment, and these assessments should be disclosed to the public. Alternative information technologies that can reduce the paperwork burden should be adopted.

The Administration should strengthen OIRA's paperwork control responsibilities. Moreover, the Administration and Congress should strengthen and amend the Paperwork Reduction Act. Sound legislative proposals include a government-wide goal of at least a 5% annual reduction in paperwork. In the absence of a legislative mandate, the Executive Branch should nonetheless commit itself to this goal and should annually report its progress in achieving it.

The new legislation should also address the problem of "third party" disclosures of information. The Paperwork Reduction Act was intended to limit the ability of federal agencies to impose paperwork requirements on the public. However, in *Dole v. United Steelworkers of America*, the Supreme Court held that the protections of the Act do not apply where an agency requires that information be provided to a third party (and not the government).[21] An agency can circumvent OIRA's paperwork review simply by not requiring that the information be submitted to the federal government. In that event, OIRA cannot review the agency's information requirement and has no authority to stop it. To remedy this problem, Congress should legislatively overrule *Dole* when it amends the Paperwork Reduction Act.

Excessive paperwork burdens often are caused by unreasonable administrative process requirements. These administrative process costs – the inflexibility, unresponsiveness, and delay that characterize many regulatory programs – are an increasing threat to the competitiveness of U.S. businesses in global markets.

Many major EPA programs, for example, are based on a multi-layered administrative process for permitting, compliance review, and the like. Facilities otherwise ready, willing, and able to comply with the environmental controls can be rendered noncompetitive by the rigidity and delay of the administrative process. Many of the industries that hold the greatest promise for jobs and economic growth in the nation's manufacturing sector must be able to respond quickly to technological change at a pace dictated by international competition, not the regulatory process. Among these vital industries are electronics, advanced materials, aerospace, custom and specialty chemicals, pharmaceuticals, and automobile manufacturing. In these highly competitive industries, time is precious. They cannot wait for regulatory processes that take years when their products go through entire life cycles in less time. Despite the massive costs imposed by these complex administrative processes, the agencies do not have procedures for considering the costs and benefits of these administrative processes themselves or their potential for being streamlined.

Congress and the agencies should continually examine administrative processes. They should look beyond the direct costs of regulatory controls and take into account the incremental costs and benefits of each layer in the administrative process.

More generally, the adversarial, legalistic nature of the regulatory system must be reassessed. All too often, conflict – not consensus and compromise – characterizes decision making, enforcement, and the relationship among government, business, interest groups, and the public. And increasingly, legislatures and agencies are criminalizing regulatory violations that traditionally were addressed by civil and administrative remedies. In the environmental area, for example, errors in reporting, sampling, record keeping, and the like now are potentially subject to criminal sanctions. At the same time, the growing complexity of environmental regulation increases the likelihood that these errors will occur.

The antagonistic nature of the American regulatory system imposes enormous and unnecessary costs; these include exacerbating litigation and other transaction costs, prolonging delay, and chilling innovation. These costs, like paperwork and administrative process costs, ultimately are borne by customers, employees and stockholders of the regulated community.

The government should strive to achieve absolute paperwork reductions, streamline administrative processes, and reduce the adversarial nature of our regulatory system. Only where their benefits clearly exceed their costs should mandatory paperwork or complex and adversarial administrative process requirements be imposed.

12. Regulatory Budget: A framework should be developed to account for expenditures required by regulations and to promote greater fiscal restraint on regulatory programs. The costs of regulation affect us all. They are, in effect, "hidden taxes." American workers see their tax burden on their Form 1040 and state tax reporting forms, but they are told nothing about their regulatory burden. To compound the problem, the decisions to create and impose regulations, especially at the agency level, are remote from public view. Although the public may see that increased government spending will require that they or their children eventually pay the price in higher taxes, they plainly do not realize that collectively they also must pay for regulations – as customers, employees, and stockholders.

Regulatory programs create an illusion that business absorbs their costs. In contrast to taxing and spending programs, regulatory programs impose costs that do not appear in government budget figures, and therefore seem "free." In the end, however, the public pays the price just the same – through higher prices, fewer products, and diminished wages, productivity, and economic growth.

Despite the enormous cumulative burden of regulations, there is no process for setting priorities and forcing trade-offs among different programs or goals. Government spending programs face some discipline through the budgetary process because current spending limits create an incentive to establish rational priorities and to spend money in a more cost-effective way. However, there is no formal budgeting process for the statutory and regulatory programs that direct nonfederal resources to achieve public purposes. Regulations are created as their need is perceived, without budgetary constraints or forced trade-offs with other important regulations. Government must become more sensitive to the cumulative costs of regulations.

An accounting system for regulatory costs could measure the cumulative effect of regulations and promote a more efficient regulatory system. Under a regulatory budget, agencies would have a powerful incentive to regulate in a more cost-effective manner; each agency could be limited in the amount of regulatory costs imposed on the economy each year. If the budget limit had been reached, an agency wishing to add a new regulation would be required to repeal or modify an existing regulation to offset the cost increase from the new regulation. If the agency were unable to offset the cost of the new regulation from other regulations for which it is responsible, the government would have to produce an offsetting reduction from another agency.

In light of the similarities between fiscal and regulatory expenditures, the fiscal budgetary process has been proposed as a model for a similar budgetary process to discipline regulatory expenditures. There have been bipartisan efforts in the Executive Branch and Congress to develop an accounting framework to monitor expenditures directly required by regulation. This work should be encouraged.

The goal of regulatory accounting is worthwhile. Nonetheless, it should be recognized that measuring the private expenditures required by federal regulation raises its own set of problems. The regulated community should not be unduly burdened with extensive and costly record-keeping requirements to validate projected budget estimates. It is also difficult to distinguish expenditures due to regulation from those that would have occurred regardless of regulation. And special challenges arise in estimating the indirect costs of regulation, including lost opportunities for consumers to purchase goods due to higher prices, less desirable products, or complete bans of products or substances. Regulatory accounting must consider these indirect costs, but they can only be estimated with complicated statistical models. Moreover, combining estimates of indirect costs with direct cost estimates could be difficult. Yet, because bans primarily cause indirect costs, measuring only direct costs could encourage agencies to institute bans rather than regulatory controls.

These challenges make regulatory accounting more complex than fiscal accounting, but there are good reasons to persevere in the development of a regulatory budget:

- Although regulatory budgets would require forecasts of private spending on regulations, the forecasts need not be exact to constrain spending (like spending forecasts for fiscal budgets).
- The measurement problem concerning the proper baseline for direct regulatory costs diminishes if an incremental budget approach is used.
- The potential for agencies to use bans to avoid regulatory budget constraints is outweighed by their tendency to impose costs on the public absent a regulatory budget; rules for estimating indirect costs can be developed.[illegible]

While a regulatory budget has not yet been perfected, it holds promise for measuring and disciplining the cumulative burden of regulations and allocating resources more effectively. The starting point for a regulatory budget is to develop an accounting system that would use information available from both the fiscal budgetary process and the information-collection budget established by the Paperwork Reduction Act. The important work to develop a regulatory budget should continue.

III. Conclusion

Government regulation can and must be improved. Although some regulations have been beneficial, there is great need – and much room – for a smarter, more cost-effective approach to regulation. To ask how much regulation we should have or how we should best regulate in specific situations is not to put dollars before people. To the contrary: it is to make dollars work more effectively for people.

Regulations exact a heavy toll on wages, productivity, economic growth, prices, and innovation. They burden federal, state, and local governments. We do not see the factories never built, the products never made, the services never provided, or the entrepreneurial ideas drowned in the sea of regulatory process. But, in the end, all of these costs of regulation are borne by the public – as employees, consumers, stockholders, and taxpayers.

Regulatory reform must be a national priority. Because our nation has limited resources and many competing expectations, the soaring costs of regulation make it imperative to reform regulation and to reduce its burdens on the economy. There is growing consensus not only on the need for regulatory reform, but also on how to achieve it: Government must assess the seriousness of risks proposed for regulation, compare these risks to risks familiar to the public, disclose the costs of regulation, regulate only if the benefits outweigh the costs, and select the most cost-effective, market-driven method possible. This is smarter regulation. And smarter regulation is better regulation, for consumers, governments, and businesses alike.

The White House, Congress, agencies, and the states must all commit themselves to smarter regulation. The Business Roundtable recommends that governments at all levels vigorously implement these twelve tenets of rational regulation. Many promising ideas have been proposed to "reinvent" regulations and the regulatory system; President Clinton's Executive Order on Regulatory Planning and Review takes an important first step. However, the hard work necessary to achieve meaningful reform remains to be done.

It will take strong leadership to reform the culture of regulation that permeates government at all levels. Government leaders must remove incentives for regulators to impose burdensome new regulations and red tape, and reward innovators who reform or eliminate irrational regulations or who obviate the need for new ones. Government employees, like private-sector employees, must put the "customer" first and be more accountable for achieving results, not for developing or following Byzantine rules.

If we fail to regulate smarter, and if we fail to change the culture of regulation, then the American public – not just governments and businesses – will suffer. Regulating smarter is a challenge our nation cannot afford to ignore.

Endnotes

1. Thomas D. Hopkins, "Costs of Regulation: Filling the Gaps" (Rep. Prepared for Reg. Info. Service Center) Table 1 (Aug. 1992) (estimates in 1991 dollars).

2. *See* Thomas D. Hopkins, "Costs of Regulation: Filling the Gaps" (Rep. Prepared for Reg. Info. Service Center) Table 1 (Aug. 1992).

3. Environmental Protection Agency, *Environmental Investments: The Cost of a Clean Environment* (Nov. 1990); General Accounting Office, *Environmental Protection: Meeting Public Expectations With Limited Resources* 9 (June 1991).

4. Thomas D. Hopkins, "Cost of Federal Regulation" 4, *reprinted in* Reg. Pol'y in Canada and the United States (Rochester Inst. Tech. 1992).

5. Thomas D. Hopkins, "Costs of Regulations: Filling the Gaps" (Rep. Prepared for Reg. Info. Service Center) Table 2 (Aug. 1992) (estimate for 1993, in 1991 dollars).

6. National Performance Review, *Creating a Government that Works Better and Costs Less* 1 (Sept. 7, 1993).

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Summary of Recommendati

1. Risk-Based Priorities and Public Education:

Risk-Based Priorities

- The government should use comparative risk assessment to compare the magnitude of various risks and set priorities for achieving greater protection of human health, safety and the environment in the most cost-effective manner.
- Using comparative risk assessment, the Executive Branch should develop a current inventory of known risks, rank them, and periodically update the inventory every two to four years in light of new information.
- Federal and state health and safety agencies should utilize experts to assess, compare, and rank the risks regulated by each agency.
- An interagency coordinating group should be used to facilitate communication and long-term planning among agency leaders.
- The President should issue guidance to encourage the use of risk analysis as a tool for making pollution prevention decisions.
- In the short term, Congress and state legislatures should require the risk-reduction agencies, such as EPA, to conduct comparative risk assessments to set priorities.
- In the long term, as environmental, health, and safety statutes are reauthorized, reformed, and created, Congress and state legislatures should require – not inhibit – the consideration of risk, costs, and benefits in designing regulatory policy.
- Legislation for controlling risk should promote risk assessment while providing agencies with sufficient flexibility to incorporate state-of-the-art scientific knowledge.
- An Office of Risk Analysis should be created in EPA and other agencies that need increased expertise in analyzing and ranking risks.
- A task force composed of scientific experts from the environmental, health, and safety agencies should create a government-wide manual on the regulation of risks. The manual would instruct regulators on how to manage risks.
- Legislatures should set clear goals for regulatory programs, and these goals should be understandable to the regulated community and the public.

Public Education: Improved Risk Communication

- Agencies should improve the risk communication process, which includes educating the public on the nature of risks potentially subject to regulation; the costs and benefits of regulation; available alternatives; and uncertainty about risks, benefits, and costs.

- The government should educate the public about the level of risks proposed for regulation; risks unfamiliar to the public should be compared to familiar risks.
- Environmental, health, and safety agencies should create public risk communication programs to inform and respond to the public on relevant risks and the costs of managing those risks.
- Risk communication should be based on a written record that is available to the public.

2. Risk Assessment and Risk Management:

- The risk assessment and risk management phases of the regulatory process should be separated as much as possible – both by agencies in conducting risk analyses and by legislatures in designing statutes.
- Risk assessment methodologies and guidelines should be improved; they should be routinely reviewed and updated to reflect the state of the art.
- Professional and policy judgments made in the risk assessment process should be identified and disclosed to the public.
- The White House should issue an Executive Order on risk assessment and risk management policy.
- Congress and the White House should strengthen the expertise of the Office of Science and Technology Policy in risk analysis.
- Uniform risk assessment guidelines for the agencies should be developed by OSTP, an interagency committee, or by experts outside of government.
- Agencies should review their risk assessment guidelines and methodologies and make improvements where appropriate.
- A more complete and current government database of relevant scientific data should be developed for use in the risk assessment process.
- The government should establish a mechanism that would allow new scientific information to be easily and quickly incorporated into the risk assessment process.
- Procedures should be established to reevaluate risk assessments and risk management decisions in light of scientific advances.
- Agencies should favor cost-effective regulatory options in the risk management phase.

3. Sound Science:

- Agencies should use the most advanced and precise scientific methods when making decisions.
- Agencies should regularly update their regulations and programs to incorporate advances in scientific knowledge.
- Agencies that depend on scientific information and judgments but lack scientific advisory boards, such as OSHA, should emulate EPA and FDA and create scientific advisory boards to participate actively in their decision making.
- Periodic outside review procedures should be used to bolster the scientific credibility of agency decision making.
- To increase the reliability and credibility of their risk assessments, agencies should strive to make their default assumptions and inference guidelines accurately reflect real risks.
- When regulators lack information for a value or parameter needed for a risk estimate, they should use uncertainty analysis techniques to identify a range of possible values and their probability of occurrence.
- To promote public accountability, agencies should explain assumptions, inferences, and value judgments made in each risk assessment and should characterize their impact on the estimated value of the risk.
- Although risk assessments should provide a range of risk values to indicate data limitations and scientific uncertainty, the "best estimate" of risk should be provided for policymakers and the general public in the risk management phase.

4. Benefit-Cost Analysis:

- Federal and state agencies should use benefit-cost analysis to decide whether or not to adopt a regulation and should regulate only where the benefits justify the costs.
- Once a regulatory goal is established, agencies should use cost-effectiveness analysis to select the least costly option for meeting that goal.
- Congress and state legislatures should incorporate benefit-cost principles in statutes and avoid an "at-any-cost" approach to achieving regulatory goals.
- The White House and governors should hold agencies accountable for conducting a full benefit-cost analysis of significant regulatory actions.

- Agencies should apply benefit-cost and cost-effectiveness analysis not only to substantive regulations, but also to administrative process, including procedures for issuing permits and reviewing compliance.
- Agencies themselves should develop and use standardized guidelines for analyzing the costs and benefits of their regulations.
- Agencies that already have benefit-cost guidelines, such as EPA, should periodically review and improve their guidelines in cooperation with other agencies and the White House or the governor.
- When agencies estimate costs, they should attempt to estimate the *full* costs of regulations, not just *compliance* costs.
- Agencies also should consider the potential benefits of the activity or substance to be regulated.
- If some costs or benefits are nonquantifiable, they should at least be identified by the regulator.

5. Market Incentives and Performance Standards:

- Both statutes and regulations should favor market mechanisms over command-and-control regulation.
- Performance standards should be favored over design standards in federal and state regulations.

6. Productivity, Wages, and Economic Growth:

- Agencies should directly consider the impact of regulatory options on productivity, wages, economic growth, innovation, jobs, and the international competitiveness of American businesses.
- The Legislative and the Executive Branches at the federal and state levels should promote the improvement of state-of-the-art analytical tools to assess the industry-wide and economy-wide impact of regulations.

7. Coordination Among and Within Agencies:

- To address problems concerning multiple agencies, a strong interagency committee should engage in strategic planning and develop a coordinated response before regulations are proposed.
- Each agency should coordinate individual programs that address different aspect of the same problem.
- Cross-cutting, cost-effective regulatory approaches, such as multi-media environmental regulations, should be favored over piecemeal approaches.

8. Openness:

Removing Secrecy

- The regulatory process should be open to maximum public involvement at all stages.
- OIRA should disclose written communications from those outside of government before a rule is published.
- The White House should require agencies to publish their Regulatory Plans when they are submitted to OIRA for review.
- Regulatory analysis documents that detail the costs and benefits of regulations should be available to Congress and the public, even if they include information or considerations that the agency may not actually use to create a rule.
- The public should have access to the identities and positions of participants in the regulatory process.

Regulatory Negotiation

- Agencies should make better use of negotiated rulemaking.

9. Periodic Review:

- Programs and regulations should be periodically reviewed for purposes of determining whether they should be reformed, discontinued, or consolidated.
- The President should issue a Directive requiring each agency to identify and review at least three significant regulations.
- The White House should establish a formal process for reviewing existing regulations and programs.
- Legislatures should incorporate sunset provisions into regulatory programs to ensure a stricter review process, compelled by termination of the program absent a vote for continuation.

10. Federalism:

- When creating regulatory programs in a field implicating both federal and state interests, Congress should carefully consider whether to preempt and regulate the field itself or leave it to the states; the goal should be to achieve a more cost-effective balance of state and federal regulation.
- The federal government should refrain from burdening state and local governments with unfunded mandates – programs without funding – especially where the benefits do not accrue at the state or local level.
- When practical, agencies should grant waivers to allow state and

local governments to experiment with innovative programs that may more efficiently achieve regulatory goals.

11. Paperwork Burdens:

- Paperwork burdens imposed by all regulatory programs should be assessed and reduced.
- Administrative process costs – the inflexibility, unresponsiveness, and delay that characterize many regulatory programs – should be assessed and reduced.
- The adversarial, legalistic nature of the regulatory process should be reduced where possible.
- The Paperwork Reduction Act should be strengthened; clear and stringent goals for reducing paperwork burdens should be established by Congress and the White House.
- When it amends the Paperwork Reduction Act, Congress should legislatively overrule *Dole v. United Steelworkers of America* to address the problem of "third party" disclosures of information.
- The anticipated paperwork requirements of future legislation should be thoroughly assessed prior to enactment, and these assessments should be disclosed to the public.
- Alternative information technologies should be employed to reduce the paperwork burden.

12. Regulatory Budget:

- A framework should be developed to account for expenditures required by regulations and to promote greater fiscal restraint on regulatory programs.
- Congress should impose a cap on the costs imposed on the economy by regulations each year. If the regulatory budget limit is reached, the government should be required to repeal or modify existing regulations to offset the cost increase from any new regulation.

Interview with Bill Drayton (1980)

Making Innovation a Part of Regulation

Few agencies have had such a heavy impact on the American economy as the Environmental Protection Agency. But, as much of a burden as it has imposed in the past, there could be far more in the future. Poll after poll shows that the American people support environmental regulation and, indeed, think more should be done. Some students now believe we may be reaching the limits of what we can afford to spend on environmental controls. Will this mean we have to stop improving our environment? EPA is being pushed up against the wall.

Recognizing itself as the leading regulatory agency, EPA under Administrator Doug Costle has determined to take the lead in regulatory reform. Responsible for leading these efforts within the agency is Bill Drayton, the Assistant Administrator for Planning and Management. His views of regulation, the type of reforms necessary and the contributions that must be made by the regulatory agencies and the private sector are important guideposts for the future. Drayton summarizes his views on regulation in this interview with *REGULATORY EYE.*

...

Away From The Old Style. The compounding growth of the economy and, consequently, of pollution, will press ever harder against the world's unchanging quantity of air, land and water—forcing society to pay more and more just to maintain current levels of environmental quality. In the 1970's we had easy targets because for relatively little money we could remove large amounts of pollution. In the future, though, the costs per pound of pollution removed are sure to rise. And we will be asking ever-larger numbers of smaller and smaller firms to cut their pollution. Society may eventually decide the price is too high.

Increasing the rate of innovation in environmental control technology and techniques, thereby getting more environmental relief for less cost, is the only way we can avoid this dead end, this cost trap. We will need positive incentives to encourage innovation. We need to turn on the technical skill and creativity of thousands of plant engineers and private sector managers. To do this we need public creativity as well. Making innovation a part of the process is essential to the long-term health of the environmental movement.

We must change the way we regulate. We must avoid the dead-weight loss caused by the fact that rules, unavoidably, are rigid over-generalizations that often force suboptimal solutions in particular cases. The traditional "command and control" of an all-powerful regulator issuing such regulations and forcing their acceptance according to the book must give away.

We need to stimulate among Federal government regulators, officials at the local level and industry, a willingness to innovate with new technologies and more productive control mechanisms. In essence, we have to unleash both our and the States' staffs and industry from the over-rigid constraints of command and control, to encourage them to use their imagination in developing better and cheaper ways to meet our environmental goals.

Eighty-five percent of the environmental regulators in this country are at the State and local level. So is virtually all our industry. We have to find incentives that will allow people outside Washington to develop better ways of getting the job done. No central organization can ever know as much or do as good a job as the people on the spot. We need to develop a system that provides the priorities and an accountability system from Washington and encourages innovation and reform initia tive at the local level.

Finally, we must develop an alliance among industry an government based on a mutual desire to press for needed en vironmental improvements at the least possible cost. Withou the willingness to work together, specific facts only known a the local level will not contribute adequately to the attainment o our national policies and goals.

"Controlled trading" is the chief concept we are using EPA to provide incentives for innovation in controlling pollu tion. Under this concept industry is free within a geographic are to choose the most cost-effective methods for reducing pollu tion, so long as certain minimum reductions are attained. EP will set the rules and police adherence to national policies. Tha way, a new source of pollution may be allowed if anothe existing source in the area reduces its pollution to more tha "offset" the amount emanating from the new source. Fo example, Oklahoma City was able to get several local oil con panies to make room for a new $400 million GM assembly pla by reducing the amount of hydrocarbons they were releasing the air by an amount greater than the hydrocarbons expected be emitted from the new GM plant.

We now permit companies to reduce their emissions an "bank" the emissions reductions for sale or trade at a later tim to companies moving into the area. We are exploring the possi bility of establishing marketable permits to release pollutan which would allow us to control the total level of pollution in a area. Under the marketable permit system, companies coul determine the best possible location at a new plant, given th costs of the permits required to release pollutants.

Part of this controlled trading concept will involve the de velopment of brokers to facilitate the transfers of offsets o pollution permits. In Oklahoma City it was the Chamber o Commerce that performed this function. In other areas, Sta and local governments are picking up this responsibility.

Another use of the controlled trading concept is in the bubbl approach to pollution emanating from a single plant. Often the are multiple sources of pollution within the plant and some a more costly to control than others.

DuPont has estimated that it could reduce by 89 percent th total pollution of hydrocarbons from one of its plants for million. If it had to meet existing standards, it would have spend $20 million to get 84 percent control. (EPA hasn't r

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viewed this proposal yet, but we have a great deal of respect for DuPont's technical competency).

Controlled trading alternatives allow business and local authorities to reduce pollution at far lower costs than before. Even more important, it encourages innovation.

Other Reforms. We are exploring more than 40 other regulatory reforms at EPA. Let me quickly list a few examples.

Enforcement against the handful of hardcore scofflaws has been notoriously difficult. Our new economics-based delayed compliance penalties will charge noncompliers what they save by not complying.

We have not overlooked the problems of red tape in EPA programs. We are exploring ways to consolidate the many permits that would be required in the construction of any large industrial facility. We have cut by more than a year the time required to process rural water and sewer grant and loan applications.

A simple further example: We have begun to use Federal procurement to encourage environmentally superior products. We have already done so for relatively quiet trucks, air compressors and lawn mowers.

Finally, we are carefully exploring how we can improve the development and review of regulations. We are working to improve our strategic planning and priority setting mechanisms for future regulatory developments. We are actively coordinating our chemical regulations through the Interagency Regulatory Liaison Group, and through the Regulatory Council. We are looking at the cumulative impact of our air and water regulations on six major industries. We have initiated a major effort to improve the estimating of benefits to be achieved by new regulations. We have also tried to return to the use of English in our regulations.

I do not believe we can reform our regulatory process overnight. Important reforms take years to develop, refine, and implement. Putting the necessary analytical and management capabilities in place and developing broad public understanding and cooperation also takes time. But it cannot take too much time. Every year we are losing ground as the volume of pollution increases and our unchanging amount of environment must absorb more and more compounds. We must innovate in how we regulate in order to induce those we regulate to find new, more efficient ways of controlling pollution. □

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occur in tanks, containers, drip pads or builders meeting industry standards, not RCRA standards; and spill response is required, according to Tom Ovenden, project director for NEDA-RCRA.

In addition, those recycling wastes that were produced on-site would have to notify the regulatory agency and adequate records would be maintained to verify compliance with terms of the exemption and ensuring not too much waste is accumulated.

This approach would help build trust between the agency and industry by allowing the industry to operate under a reduced regulatory burden, and allow regulatory agencies to check on the industry through inspecting the facilities and examining records, Ovenden explained.

John Wittenborn, an attorney representing the steel industry for Collier, Shannon, Rill and Scott, said he is encouraged on the progress EPA is making, but is concerned that EPA may subject off-site recycling activities to more stringent controls than needed simply because of the location of the recycling activities.

The steel industry recycles both on-site and off-site. It is difficult to "see a significant difference in the way recycling activities are regulated just because of venue," Wittenborn told BNA.

If EPA is concerned with additional risks in the transportation or commingling of the materials to be recycled off-site, then those risks should be addressed in the conditions that industry must meet to be exempt from RCRA Subtitle C, he explained.

The EPA official told BNA the agency also will try to do a better job distinguishing between commodity-like wastes and materials that are inherently waste-like in deciding how they should be regulated.

In addition, the agency still is considering a version of the controversial toxics-along-for-ride-tests, which would require industry to test their wastes and recycled products for toxicity characteristics to ensure there is no sham recycling.

EPA Assistant Administrator Elliott Laws was briefed by OSW staff in November about the task force recommendations and gave the approval to proceed with the modified approach. The letter outlining the strategy could be released as early as the week of Dec. 26. The actual strategy may not be released until January or later, according to an EPA official. ☐

— *By Amy Porter*

Government Operations

CLINTON MOBILIZES TEAM TO IMPROVE FEDERAL REGULATORY PROCESS IN 1995

President Clinton has asked a White House team of regulatory advisers to propose ideas early next year to improve the federal regulatory process in a way that builds on "the principles and the philosophy" he described in his September 1993 executive order on regulatory policy, Sally Katzen, administrator of the Office of Information and Regulatory Affairs at the Office of Management and Budget, told BNA Dec. 20.

Any and all ideas that would promote "good government" are on the table, Katzen said, including actions Clinton can take under his own authority, as well as those that would require congressional action.

The president mobilized a team of White House advisers in November after he received a report from Katzen describing the progress made in the year since Clinton issued his executive order, EO 12866. The report, which Katzen sent to the president in November and OMB released to BNA on Dec. 20, states: "We continue to be pleased with the progress that has been made in achieving the objectives of the executive order, but at the same time, we are acutely conscious of the work that remains to be done to realize the full benefits that we had hoped to achieve."

The president's 1993 order described his regulatory philosophy, including the need to weigh costs and benefits of federal rules and information about risk. It described a regulatory review process designed to be more open and accessible to public scrutiny, and a system intended to reduce the number of regulations reviewed by the White House by targeting those deemed "significant" because of their estimated impact on the economy, or the novel issues they present.

White House Focus Sharpened In September

Clinton's recent instructions to his regulatory advisers were the result of discussions within the White House that had been taking place since Labor Day, which was the one-year anniversary of the president's regulatory order, Katzen said. In taking stock of the regulatory review process after 12 months under EO 12866, "I had a clear sense of where we were and where we wanted to go," she said.

According to Katzen, the president's focus on regulatory policy was sharpened long before the Nov. 8 elections that brought a Republican majority to the House and Senate. Nevertheless, Clinton's public statements about relieving the public of the intrusive burden of the federal government, including the regulatory process, sharpened after the elections. The White House is keenly aware that it faces a popular "regulatory relief" movement in Congress led by Republicans, but joined by many Democrats, that could — in its most extreme versions — shut federal regulatory agencies down through broad reform legislation, the appropriations process, or possibly through an amendment to the Constitution.

House and Senate lawmakers this month asked the president to impose a moratorium on federal regulations, much like the flexible freeze on rulemaking imposed by President Bush. Clinton, through Katzen, refused the invitation Dec. 14, calling it "blunderbuss" (239 DER A-13, 12/15/94).

Asked if the White House regulatory improvement team is considering ideas included in regulatory "reform" legislation and amendments proposed this year as additions to almost every bill that looked to be heading to the floor of the House or Senate, Katzen responded, "This is a focused effort on specific improvement to the regulatory system. We are looking at cross-cutting issues and are gathering information from all sources. ... A lot of ideas were floated [in Congress], some of which would be properly conceived as enhancements to 'good government.'"

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Clinton Asks For New Approaches To Regulation

The president has asked his regulatory advisers to provide him "some very real options" for "alternative, innovative approaches to regulation that can achieve the objective in a more cost-effective fashion," Katzen said. In asking for "real options," the president wants ideas that are "achievable, realistic, important improvements to the system," she added.

Katzen said she expected the options to build on the contents of the president's 1993 executive order, rather than seek to drastically change its focus.

Clinton wants the proposals by "early spring" 1995, Katzen told BNA. Vice President Al Gore, who heads the president's Regulatory Working Group, which was established under EO 12866, and his staff are coordinating the regulatory improvement project at the White House. Katzen, as chair of the Regulatory Working Group and administrator of the White House office in charge of reviewing significant federal regulations, is playing a key role in providing information and ideas.

Looking At Industry Sectors

The advisers are organizing their work under two tracks:

- First, examining general cross-cutting issues that relate to the regulatory process generally (which Katzen heads); and
- Second, a look at the needs of specific sectors of the economy, such as transportation, and food safety, Katzen told BNA.

She declined to list all the industry sectors currently identified by the group, or the members of the regulatory team in charge of looking at those sectors. Those involved are all from the White House and OMB, she said.

Clinton's Regulatory Working Group includes representatives from OMB, the Council of Economic Advisers, the National Economic Council, the Domestic Policy Council, the National Security Council, the Office of Science and Technology Policy, the office of White House Counsel, the office of environmental policy, and the office of intergovernmental affairs. The working group also includes representatives from at least 20 federal departments and agencies.

The Regulatory Working Group has had for almost a year four subgroups assigned to examine specific issues within the regulatory arena, two of which — risk analysis and cost-benefit analysis — are hot-button issues among Republicans on Capitol Hill. The other two teams are studying federal information dissemination, and "streamlining government."

Clinton Seeks To Reduce 'Interference'

"The president asked the vice president to spearhead the effort and to pull together all the regulatory advisers and establish a process of looking at alternative, innovative approaches to regulation that can achieve the objective in a more cost-effective fashion," Katzen said.

At a Dec. 19 White House event to focus on proposed spending cuts to pay for middle-class tax breaks, Clinton — joined by Gore — said the administration was beginning a second phase of reinventing government that included the regulatory process.

"I have called on the vice president to review every single government program and department for further possible reductions," Clinton said. "He's also going to review the federal regulatory process, and we have spent a good deal of time on that already, so that we can get better results for the public with less interference in their lives."

Gore echoed the president's comments, noting that phase two of his reinventing government efforts would target decisions about what the government "should stop doing."

"We will stop producing red tape and start paying more attention to results than we do to processes," Gore said. "And, as you have asked, Mr. President, we're going to also see about reinventing the government's approach to regulatory issues and to regulatory process. That's well under way also."

Katzen Concedes Limitations Of Regulators

The 43-page one-year status report on the implementation of EO 12866 sent by Katzen to the president in November praises the overall successes, but notes the difficulty in measuring the success of the president's instructions to agencies in terms of his regulatory philosophy and principles.

These are identified in the report as "development of alternatives, setting regulatory priorities, obtaining the best reasonably available information, assessing benefits and costs, considering federal, state, local, and tribal needs, [and] coordinating with other agencies."

Katzen told Clinton and other White House officials who received copies of the report that "the principles of the order are not a simple check list of tasks. Instead, they are a complex and interactive body of standards that require reasoned judgment, difficult decisions, and balances of competing priorities."

For many reasons, Katzen reported that she could not tell Clinton that "the philosophy and principles espoused in the order either have or have not always been met by the agencies in their regulatory programs," but she said the results indicate that agencies are "applying the principles in many and diverse rulemakings."

The president's regulatory principles, which Katzen said "appear simple and straightforward," are sometimes difficult for federal regulators to apply.

"Agencies are often faced with imperfect information and limited personnel and financial resources to devote to analysis," she wrote. "And they ultimately face what must be acknowledged as a daunting task: In a society composed of complex and changing webs of institutional and individual behavior, they must predict the future, attempting to control behavior harmful to the common good, without impeding or unwittingly restraining acceptable and beneficial activities."

Katzen took aim at Congress for increasing the amount of regulation and for making the task of regulating the public more difficult. In doing so, she suggested that the administration believes the situation may be worse in the GOP-controlled 104th Congress.

"Agencies today face unusual pressures to regulate," she wrote. "With budgetary constraints so tight, and with the difficulty of enacting new legislation in the highly partisan atmosphere that characterized the last Congress, the only means left for the agencies to implement their initiatives is through regulation. This puts inordinate pressure on any attempt to hold steady or reduce the amount of regulation in which they are engaged."

Katzen Says White House Reviews Fewer Rules

Because Clinton's executive order was designed, in part, to reduce the number of proposed and final rules that must undergo centralized review within the White House, Katzen's report includes a one-year statistical update.

Six months after the president issues his order, Katzen's office reviewed 755 rules, and the total for one year was 1,143 reviews. Katzen said the figure was half the average reviews per year for the previous decade, which was more than 2,200 reviews.

Between Jan. 1, 1994, and Sept. 30, 1994, OIRA reviewed 661 rules. At that rate, Katzen predicted that 1994 would close with a record of fewer than 900 rules reviewed by her office, which she said would be a 60 percent reduction from the annual average for the previous decade under Republican administrations.

"Thus, the number of rules OIRA reviews has been reduced substantially," she concluded.

Of the rules reviewed by OIRA, Katzen's office returned 58 percent to the agencies without changes, and sent back 35 percent with changes. The remaining 7 percent were withdrawn by the agencies, or were cleared on an expedited basis for other reasons, Katzen said.

Just looking at figures from April 1, 1994, and Sept. 30, 1994, — the second six-month period of the order — Katzen said six agencies accounted for 76 percent of OIRA's reviews: Health and Human Services (82), Department of Agriculture (65), Environmental Protection Agency (47), Education (35), Housing and Urban Development (34), and Transportation (31).

Of the 388 rules reviewed by OIRA during the second six months since issuance of EO 12866, 66, or 17 percent, were "economically significant," while 322, or 83 percent, were deemed significant for other reasons and were therefore subjected to review.

EPA and USDA were responsible for the majority of economically significant rules in the second six-month period of the order, similar to the statistics in the first six months of EO 12866.

Text of Katzen's one-year report appears in Section M.□

CORRECTION

A report on block grants to address employment and training and welfare programs, in 240 DER A-10, 12/16/94, should have stated that Sen. Nancy Kassebaum (R-Kan) does not have a formal position on giving states block grants for job training programs. The senator opposes block grants for welfare programs.□

End of Section

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