ELECTRONIC REPORTING STREAMLINING ACT OF 1995

HEARING

BEFORE THE

SUBCOMMITTEE ON GOVERNMENT MANAGEMENT, INFORMATION, AND TECHNOLOGY

OF THE

COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT HOUSE OF REPRESENTATIVES

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ELECTRONIC REPORTING STREAMLINING ACT OF 1995

TUESDAY, OCTOBER 10, 1995

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON GOVERNMENT MANAGEMENT,
INFORMATION, AND TECHNOLOGY,
COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:07 p.m., in room 2154, Rayburn House Office Building, Hon. Stephen Horn (chairman of the subcommittee) presiding.

Present: Representatives Horn, Flanagan, and Davis.

Staff present: J. Russell George, staff director and counsel; Mark Brasher, professional staff member; Andrew G. Richardson, clerk; David McMillen and Matthew Pinkus, minority professional staff members; and Elisabeth Campbell, minority staff assistant.

Mr. HORN. The Subcommittee on Government Management, Information, and Technology will come to order. Good afternoon to the Members and the gentleman from Virginia. I am delighted to see you here, and ladies and gentlemen.

Let me just make a few comments opening this hearing. We hope this develops into substantial legislation, and we are looking forward to hearing from our witnesses today that have already experimented with the ideas that will be here, in the State of California, and the State Department of Environmental Protection.

During our hearings regarding the use of information technology by Federal agencies, it became apparent that agencies are not using information technology to re-engineer and make their operations more efficient. In particular, agencies have not redesigned their regulatory structures to exploit efficiencies. As a result, access to electronic information has lagged.

A new law allowing companies to report regulatory information in an electronic format would have several important effects. It would reduce the burden of compliance on the private sector, it would reduce the burden of administration for Federal agencies, it would make it easier to answer citizens' requests for information, and the public would be able to obtain a larger volume of information.

The California Environmental Protection Agency has initiated just such a project. Led by private high-technology firms with expertise in setting common technical standards, this programming project has shown promise for improving Government. Today, we will hear from some of those involved with the California effort, in-

cluding individuals from Government, industry, and various environmental groups.

In addition to the California initiative, we will also hear about the U.S. Environmental Protection Agency's efforts at improving electronic access to records. The EPA is to be commended for putting a great deal of information on the Internet. Currently, EPA rulings and regulations, publications, and other information are available in an electronic format. EPA is again to be commended for this. The increasing use of Internet will allow citizens increased access to information about their communities.

We will also be interested in EPA's reaction to the California project. I will be circulating to Members, the administration, witnesses, and others interested in the issue a draft bill to improve the public's access to electronic information. This bill will build on efforts advanced by the California and U.S. Environmental Protection Agencies in making Government accessible to the citizen.

Does the gentleman from Virginia have any comments?

Mr. DAVIS. No statement. I will enter one into the record.

Mr. HORN. Very good.

The subcommittee of the House Government Reform and Oversight Committee has a practice of swearing in all witnesses who come before it. If the first panel would come forward—Mr. Thomas E. Kelly and Dr. Stephen D. Hanna—and raise your right hand.

[Witnesses sworn].

Mr. HORN. Both witnesses affirmed. We'll start with Mr. Thomas Kelly, the Director of Regulatory Management and Information for the Office of Policy, Planning, and Evaluation, of the U.S. Environmental Protection Agency.

Welcome, Mr. Kelly.

STATEMENTS OF THOMAS E. KELLY, DIRECTOR, REGULATORY MANAGEMENT AND INFORMATION, OFFICE OF POLICY, PLANNING, AND EVALUATION, U.S. ENVIRONMENTAL PROTECTION AGENCY; AND STEPHEN D. HANNA, PH.D., ASSISTANT FOR INFORMATION TECHNOLOGY, CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Mr. KELLY. Thank you, Mr. Chairman, Mr. Davis, and committee staff. I am pleased to appear before you today to discuss our use of electronic data interchange and basically to provide you a lot of good news that is going on in the Environmental Protection Agency over the use of information and our whole approach to reducing unnecessary burden on the American people.

We are reinventing the relationship with our regulated community. We're promoting cheaper, cleaner, smarter environmental management that gets the essential job done, while eliminating unnecessary burden on the public.

Mr. Chairman, our agency is rapidly becoming a recognized leader in the field of information technology, and I was pleased to hear you cite that yourself. Our Internet home page was recently named one of the top 5 percent on the Worldwide Web, and four EPA information technology applications have been nominated for the prestigious 1995 Computer World Smithsonian Awards.

EPA is making information from all our programs available to homes, schools, and libraries through the Internet and other elec-

tronic means. We've established the very popular Earth 1 server on the Internet, which receives over 1.3 million queries per month. Earth 1 is an expanding repository for public information, including EPA's publications, Federal Register documents. These are the rulemaking documents that will encourage increased public awareness and participation in these very, very important and increasingly well known environmental rules.

EPA includes data from most of its major national programs on the Internet. Four of our national data systems are in a central data base called Envirofacts, which contains information on facilities and their pollutant discharges as well as other data elements such as compliance and permit information.

Mr. Chairman, opening access to environmental data will assist industry to better understand how our agency uses their reported information. It will also allow the public to better understand environmental protection programs, rules, and regulations that protect human health and the environment. These information strategies are of one piece with the Agency's commitment to reinvent its work processes to relieve the public of unnecessary burden.

For example, under the Common Sense Initiative, EPA is working with industry, States, and public interest groups to examine and revise the entire body of environmental regulation as it affects a single industry or industrial sector. Our regulatory reinvention efforts have already achieved a reduction of 1,500 pages in the Code of Federal Regulations, and in March Administrator Carol Browner sent to the President a list of 25 additional proposals to fundamentally change the way the EPA does business with the American public. Among them was the increasingly well-known Project XL, for excellence and leadership.

Project XL will allow EPA and a regulated party to enter an enforceable agreement to achieve documented environmental improvements in a way that makes better business and environmental sense at the operating facility. Our Administrator, Carol Browner, has also promised the President that EPA will reduce the information burden it imposes on the American public by 25 percent, which means 20 million hours.

As part of this effort to give back 20 million hours of valuable time to the American people, EPA is continuing to develop its capacity to support electronic reporting to reduce the effort required to store and report environmental information, and that's where electronic data interchange of EDI comes in. It's the leading form of electronic examiners in the private sector. EDI allows any two computer systems, no matter how different the hardware or software, to exchange data that with each other without having to be reprogrammed.

By focusing on a common language of standards and protocols, EDI is technology neutral. Because it uses off-the-shelf software without requiring special custom programming, the burden of system compatibility is eliminated, fostering a partnership for good data management among the participants and permitting complete automation in the exchange of data. This keeps the Government out of the software business and out of selecting market winners and losers.

For all these reasons, EPA has endorsed EDI by policy as the approach of choice for electronic reporting. EDI presents an opportunity for all of us involved with environmental information to revolutionize the way we do business. By moving from paper to electronic reporting, we can automate routine programmatic functions and lay the foundation for more radical restructuring by making possible the integration of data collections and data bases across programs, across States, and across Federal agencies.

For industry, EDI will help save millions of dollars in reporting costs, it will enable much greater control of data quality, and it will present new opportunities to improve internal management of environmental data.

EPA has sponsored a number of pilot projects that address major programs in hazardous waste, water, and air. Because States run these programs under delegation from EPA, we've conducted the pilots in collaboration with several States, working through the National Governors Association. We worked closely with industry as partners in the appropriate electronic standards committees.

We have several of these pilots, and I will identify just a couple of them, given the time remaining. One is reformulated gasoline, which is up and running as an EDI project. Under the Clean Air Act Amendments of 1990, manufacturers of reformulated gasoline are required to provide production and test results on refined products. Working with industry, EPA has formulated generic standards, and the program is now accepting electronic reports from anybody who chooses to send them. The first batch of EDI reports are in the data base and are already being used. It's gotten up and running that quickly.

Another one is our hazardous waste manifest. This is the cradle-to-grave tracking mechanism that is the very foundation of the RCRA hazardous waste management program. Well over 100,000 waste tracking forms are sent on paper each week to State agencies by handlers of hazardous waste. This pilot involves electronic transmission of these forms to States so they can be automatically loaded into State data bases without the costs and delays associated with manual processing. We have completed pilots in Pennsylvania and West Virginia, and we understand that Pennsylvania has ordered a translator, which will allow them to begin collecting this information electronically as their routine basis, in 1996.

One of our most complicated and instructive pilots has to do with trans-border hazardous waste, or TransHaz. This is a pilot, involving the United States Customs Service, the State of Texas, and affected Mexican regulatory agencies, to use EDI as a means of streamlining the process of compliance reporting for transboundary shipments of hazardous waste, particularly from Maquiladora facilities. Maquiladoras are American manufacturers that operate across the border and ship their product and their waste back to the United States. Maquiladoras shipping hazardous waste back to the United States must engage in approximately 50 separate transactions involving more than two dozen paper forms.

We didn't try to take that whole thing on at once, but we did take three of the most complex and representative forms to see whether or not we could do this electronically, and the answer is,

we can. We are very confident now that we can take even a 50-transfer transaction and reduce it to electronic language.

One other I'll mention is the Discharge Monitoring Report. The reason I want to mention that is because this is the reporting system for the Clean Water Act. It is the largest single source of paperwork burden that EPA imposes.

In collaboration with three States, EPA has completed an initial pilot test of EDI for clean water monitoring, and we're beginning a phased implementation of the full system, which will be ready to accept electronic submissions on a routine basis by early 1996.

We're also working on drinking water laboratory results, the RCRA biennial report, and air emissions data.

Mr. Chairman, EDI is not a magic bullet. It's not going to solve all the problems. Environmental information is the absolute core of environmental compliance, and it's going to take time and energy to monitor, to do lab work, to store information, and to report information. That's inescapable. But EDI does become the method of choice for getting that information stored and reported.

Many small firms and individuals will probably continue to choose paper, just as a matter of choice, as a matter of custom, so EDI is not going to sweep away all of the burden associated with paper. Nevertheless, when EPA's policy on electronic reporting was published in 1990, the application of EDI to environmental compliance reporting was little more than an untested concept. Since then, we've demonstrated that environmental EDI not only works, it provides opportunities to streamline and collapse seemingly disparate paper-based reporting processes.

In the case of reformulated gasoline, we solved the legal and technical problems needed to make electronic transmission legal and enforceable, and the program is up and running. We've equally promising approaches in the other areas we're testing.

EPA is committed to reinventing environmental protection and to eliminating unnecessary burden on the public, including the burden caused by paperwork. We look forward to continuing progress in this important area, and we welcome the committee's interest in our experience with EDI.

I'll be glad to answer any questions that you might have, and I'm glad to be here with Mr. Hanna from the State of California, because everything about EPA's approach to EDI has been a partnership with States and with the users of information.

[The prepared statement of Mr. Kelly follows:]

PREPARED STATEMENT OF THOMAS A. KELLY, DIRECTOR, REGULATORY MANAGEMENT AND INFORMATION, OFFICE OF POLICY, PLANNING, AND EVALUATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Good afternoon, Mr. Chairman and Subcommittee members. I am pleased to appear before you today to discuss our Electronic Data Interchange (EDI) initiative to promote standards-based electronic reporting of environmental data. I appreciate your interest in the exciting initiatives taking place among the federal government, States, non-governmental organizations, and industry to promote electronic reporting of environmental data. EDI is a key component in EPA's commitment to "reinvent" the relationship with the regulated community to promote cheaper, cleaner, smarter environmental management that gets the essential job done while eliminating unnecessary burdens on the public.

REINVENTING ENVIRONMENTAL INFORMATION

EPA is aggressively pursuing new information strategies that will make the best use of emerging technologies to make environmental data more timely, accurate, and publicly accessible, as well as less expensive to collect, store, report, and use. The blueprint for these new approaches is EPA's Strategic Plan for Information Resources Management.

EPA'S IRM STRATEGIC PLAN

Timely, accurate, relevant information is a crucial element in EPA's ability to plan and manage environmental programs and enforce regulations. In 1994 EPA commissioned a public advisory committee to examine EPA's planning and approach to environmental information. The National Advisory Council on Environmental Policy and Technology (NACEPT) formed a Task Force comprising State and county representatives, public interest groups, industry, and academia that pointed out the need to develop a cohesive approach to collecting, analyzing, and disseminating environmental information. EPA worked from NACEPT's detailed recommendations and prepared a Strategic Plan for Information Resources Management (IRM) that is built around three fundamental principles: to have the right information, to ensure full access to well-organized information, and to use IRM to improve Agency operations.

Since then an Executive Steering Committee for IRM, composed of EPA's highest ranking managers, has directed the Agency's information policy decisions by viewing the Agency as a single "enterprise," as opposed to a cluster of separate program units. One good example of the results this vision has brought about is EPA's "One-Stop" Public Access strategy. Under this strategy EPA is making information from all our programs available in homes, schools, and libraries through the Internet and other electronic means. EPA has established a very popular "Earth 1" server on the Internet, which receives over 1.3 million queries per month. Earth 1 houses an expanding public resource, including EPA publications, its telephone directory, on-line library systems, the Government Information Locator Service, and other key, resources. In addition, Earth 1 provides access to the EPA rulemaking documents published in the Federal Register to encourage increased public awareness and participation in rulemaking. The increased use of electronic publishing is saving paper, time, and dollars, and allows us to create better tools for equipping the human interface with the non-electronic public.

As part of its public access and regulatory reform focus, EPA has included data from most of its major national program systems on the Internet. Four of the national data systems are in a central database called Envirofacts which contains facility information and their pollutant discharges, as well as other data elements such as compliance and permit information. Opening access to environmental data will assist the regulated community and industry to better understand how the Agency uses their reported information. Further, open access will allow the public to better understand environmental protection programs, rules, and regulations that protect human health and the environment.

EPA is also actively pursuing a separate strategy for coordinating information requirements across our several statutes that will ultimately allow a reporting facility to provide all its environmental information in a single electronic format. Since such an objective will require a fundamental change in how EPA, the States, and the regulated community manage information, this reform will be developed stages. Eventually, this new "One-Stop" reporting system will create a common set of basic information for all programs, starting with unified facility identification information and a common chemical nomenclature. The easy public access and consolidated reporting provided by the one-stop system will improve environmental information management and save time and money for all reporters and users of environmental information.

THE ADMINISTRATION'S REINVENTION INITIATIVES

In addition to the innovations EPA is undertaking under the Strategic Plan for IRM, the Agency is responding to the President's instruction to relieve the public of unnecessary burden in a number of ways. For example, under the Common Sense Initiative (CSI), EPA is working with industry, States, and public interest groups to examine the entire body of environmental regulation as it affects a single industry or industrial sector. EPA is committed to streamline or eliminate regulations that, having been issued at separate times and under several statutes, may exert a response burden that is cumulatively excessive. An examination of paperwork re-

quirements, emphasizing the incorporation of EDI, is an integral component of the Common Sense Initiative.

In March, Administrator Browner sent to the President a list of twenty-five proposals to fundamentally change the way EPA does business with the American public. Among them was Project XL is a pathbreaking effort to allow industry, communities, and States to propose and demonstrate methods of achieving required environmental results by methods more efficient than would be possible under procedures prescribed in current regulations. In Project XL, EPA and a regulated party will enter an enforceable agreement to achieve documented environmental improvements in ways that make better business and environmental sense at the operating facility.

Administrator Browner also promised the President that EPA will reduce the information burden it imposes on the American public by 25%, or 20 million hours as currently measured. Agency staff have been working with representatives of State environmental agencies to determine what requirements can be reduced or eliminated in order to meet that objective without sacrificing our ability to protect public health and the environment. At the same time, EPA is continuing to develop its capacity to support electronic reporting to reduce the effort required to store and report environmental information.

At the President's direction, Administrator Browner has also undertaken a line-by-line review of our existing regulations, which has resulted in the elimination of nearly 1500 pages in the Code of Federal Regulations. EPA is also examining ways to reduce the frequency of regular reports. Each program has examined all active Information Collection Requests (ICRs) under the Paperwork Reduction Act to reduce the frequency of reporting where feasible. To date, EPA has identified 39 instances where we plan to change the reporting frequency from quarterly to semi-annually, semi-annually to annually, or annually to longer periods.

EDI AND ITS ANTICIPATED BENEFITS

Electronic Data Interchange (EDI) is a standards-based, policy-neutral approach to electronic reporting. EDI is based on generic messages and communication protocols (the so called 'ANSI ASC X12 standards'), and is the leading form of electronic commerce in the private sector. EDI allows any two computer systems—no matter how different the hardware or software—to exchange data with each other without having to be reprogrammed. By focusing on a common "language" of standards and protocols, EDI is "technology neutral," as it uses standard, off-the-shelf software, without requiring special custom programming. The burden of system compatibility is eliminated, fostering a partnership for good data management among the participants and permitting complete automation in the exchange of data. For all these reasons, EPA has endorsed EDI by policy as the approach of choice for electronic reporting,.

The goal of the EPA's EDI initiative is to automate the transmission of data, computer-to-computer, for all reporting required under our environmental regulations. By so doing, we envision a system of electronic storage, transfer, and accessibility that will provide tangible benefits for everyone associated with environmental data management. For EPA and delegated States, a transition from paper-based environmental reporting to EDI can reduce time and effort invested in data processing, and, by eliminating the sequential and repetitive key-punching of data, significantly improve the quality of data entering our systems. We will also achieve dramatic improvements in the speed and ease of access to EPA and State databases. EDI presents an opportunity for all of us involved with environmental information exchange to revolutionize the way we do business. By moving from paper-based requirements to electronic reporting we can automate routine program management functions, such as everyday compliance monitoring and enforcement, and lay the foundation for more radical restructures like the "One Stop" reporting initiative by making possible the integration of data collections (and databases) across programs, States, and agencies.

For industry we believe the transition from paper to EDI will help save millions of dollars in reporting costs; enable much greater control of data quality, present new opportunities to improve internal management of environmental data; and lead to correspondingly dramatic improvements in public access to government environmental databases.

Interestingly, most corporate EDI users share a common view that the immediate gains achieved by EDI are not the primary consideration supporting the business decision to deploy EDI. Rather, it is the strategic advantage of having common, non-proprietary, standard formats that enable the company to integrate its internal systems with those of its business partners. Therefore, while there is immediate benefit

to be realized by removing paper from the environmental compliance process, the true value of EDI is to be found in long-term efficiencies that result from managing environmental information through a seamless electronic process.

EDI Pilot Projects at EPA

Over the more than five years since publication of EPA's policy embracing EDI, the Agency has sponsored a number of pilot projects that address major State-delegated programs in hazardous waste, water, and air. Because these projects deal with State-run programs, we have conducted them in collaboration with several States, working through the National Governors' Association. In keeping with the spirit of mutual collaboration that EDI embodies, we work closely with industry as partners in the appropriate electronic standards committees. These pilots have engaged EPA in close cooperation with States and private firms, working through such industry groups as the Chemical Industry Data Exchange (CIDX), Petroleum Industry Data Exchange (PIDX), Utility Industry Group (UIG), and the American Water Works Association (AWWA). We maintain a working relationship with EDI software vendors to facilitate their adapting existing products to EPA applications—thereby encouraging development and growth of an environmental software market, while keeping the Government out of the software business. It is important to note that EPA has not and will not set any proprietary EDI standards.

The Major Pilots:

REFORMULATED GASOLINE PILOT AND IMPLEMENTATION PROGRAM

Under the Clean Air Act (CAA) amendments of 1990, manufacturers of reformulated gasoline are required to provide production and test results on refined products that demonstrate reductions of VOC and toxic emissions from motor vehicles. Unlike other EDI projects, the EPA's reformulated gas program integrated electronic reporting as an option in the implementing regulation, thereby removing many of the legal obstacles to EDI implementation. Pilot tests were conducted in 1994-1995 to develop the EDI standard and implementation guidance.

In June of 1995, EPA published the first memorandum of agreement for the paperless reporting of environmental data in the Federal Register. This event marked the first EPA program to provide a paperless alternative to environmental compliance reporting by industry and has helped establish the precedent for other EPA programs.

HAZARDOUS WASTE MANIFEST (HWM)

As the vehicle for 'cradle-to-grave' hazardous waste tracking, well over 100,000 manifest forms are sent on paper each week to State agencies by handlers of hazardous waste. Data from these forms must be keystroked into State databases at great expense of time and staff, raising the likelihood of inaccuracies and even omissions. EPA's pilot EDI project involves transmission of these forms to States electronically, so that they can be automatically loaded into State databases without the costs and delays associated with manual processing. Currently pilots have been completed in Pennsylvania and West Virginia. As a result, Pennsylvania is committed to a long-term EDI capability that will begin full operation in early 1996. EPA is moving forward with plans for an incremental implementation of EDI for the Hazardous Waste Manifest, adding new State participants initially at the rate of 4 - 6 per year.

TRANSBORDER HAZARDOUS WASTE (TRANSHAZ)

(TransHaz) EDI is a pilot partnership with US Customs, the State of Texas, and affected Mexican regulatory agencies to use EDI as a means of streamlining the process of compliance reporting for transboundary shipments of hazardous waste, particularly for 'Maquiladora' facilities. 'Maquiladoras' are American manufacturers operating in Mexico and shipping product back across the border into the United States. Because of the number of government and private sector participants in this complex business process, Maquiladoras shipping hazardous waste back to the U.S. must engage in approximately 50 transactions involving more than two dozen paper forms (often containing redundant information). Consequently, tracking the paper trail for imported waste is an extremely complex and costly task for both government agencies at both the State and national levels, and for U.S. companies.

The goal of the program is to collapse these 50 transactions into a relatively small number of electronic transmissions. The initial test was to find a way to transmit three representative forms to multiple agencies through a single EDI transaction.

The pilot clearly demonstrated the capacity of EDI to collapse and streamline overlapping paper processes through the implementation of common standards.

The next step is to initiate a phased implementation that adds Mexican (and possibly Canadian) government forms to the project, broadens "Maquiladora" facility participation, adds additional State partners, as well as other federal agencies, and progressively expands the number of forms and transactions covered by the EDI transmissions.

RCRA BIENNIAL REPORT

The RCRA Biennial Report is a statutorily summary of hazardous waste activities across the nation. Many States have found the survey and report to be both expensive to manage and difficult to process. What many States have found particularly frustrating is the substantial time lag between submission of information by the regulated community and its subsequent availability from the comprehensive database. EPA conducted a pilot for the 1991 reporting cycle—with the States of West Virginia, Pennsylvania, and New Jersey—to test EDI as an approach to breaking the 'bottleneck'. The pilot demonstrated the feasibility and cost effectiveness of implementing EDI for large industry submitters. EPA plans to incorporate EDI as a generally available option in the next biennial reporting cycle.

DISCHARGE MONITORING REPORT (DMR)

The (DMR) Pilot Project seeks to provide an EDI option for the EPA's single most resource-intensive reporting program. In collaboration with three States, EPA has completed an initial pilot test of EDI for the (DMR) and is now beginning a phased implementation of the full system. Test transmissions are complete for the implementation phase, and procedures are being put in place to satisfy legal requirements for paperless submissions. EPA has also resolved most of the outstanding legal issues and completed the necessary systems work. EPA believes it will be ready to accept (DMR) submissions from the regulated community by early 1996.

AIR EMISSIONS INVENTORY REPORTING

The Air Emissions Inventory Reporting Pilot focuses on the paper system presently deployed by States to collect air emissions data from stationary sources, normally on an annual basis. States forward data from industry monitoring reports to EPA's Aerometric Information Retrieval System (AIRS) databases. Prompted by program changes introduced through the Clean Air Act, many States are redesigning their air emissions data systems. Working initially with the State of Pennsylvania, EPA is taking advantage of this opportunity to introduce EDI for air emissions reporting.

The technical work to adapt EDI standards for the AIRS data set is complete, and we will begin to accept test transmissions in Pennsylvania for the 1996 reporting cycle. The next effort is to carry through the pilot implementation and at the same time, broaden the EDI standards work to ensure that the approach is applicable to all States for future reporting cycles.

DRINKING WATER LABORATORY TEST RESULTS

The Drinking Water Laboratory Test Results pilot is testing EDI as an alternative to the paperwork system used to report drinking water laboratory sample results to Public Water Supplies and regulatory authorities (typically States). The data transmitted by the laboratories to both the water systems and regulators are extremely time-sensitive, as any potential problem with a water source can pose an immediate threat to human health. The use of EDI as a means of automating this process will not only reduce the paperwork burden on the laboratories, but will dramatically increase the response times of water authorities to remediate potential threats.

The first pilot was conducted between EPA and the Wyoming Health Department laboratories during 1993-1994. A larger pilot, to exchange more complex chemical and radiological data, is presently underway in the State of Iowa. Over the next year EPA will complete the EDI implementation guidance for chemical and radiological data.

NEW EDI PILOTS

Several new EDI pilots are just beginning. In partnership with the Department of Transportation, EPA is now designing an EDI project for the Railroad Industry. This work will help railroads automate their management and reporting of hazardous waste data. Also, working with the Food and Drug Administration and the

Chemical Manufacturers Association, EPA will initiate a pilot to test EDI submission of toxicity data under the Toxic Substances Control Act and the Federal Insecticide, Fungicide, and Rodenticide Act.

EDI projects, or work preparatory to the initiation of EDI, are also prominent components of three of the Common Sense Initiatives mentioned above. One of these is a project for the Metal Finishing CSI, in partnership with the States of Texas and Arizona, to model and streamline the entire universe of environmental reporting/recordkeeping required of metal finishers. Another is a project in partnership with the State of Pennsylvania to introduce EDI as a tool for streamlining Discharge Monitoring Reports for the iron and steel industry. The third is a preliminary task to develop a model reporting/recordkeeping system for the Electronics CSI.

ENSURING THE POLICY AND LEGAL FRAMEWORK

In 1994, EPA formed a cross-agency workgroup chartered with developing the legal, security and policy framework for allowing the agency to accept electronic submissions of compliance data. This is of special importance since the workgroup has devised ways to deal with one of the most commonly cited problems associated with electronic reporting, the specification of an electronic "signature" that ensures accountability for the accuracy and enforceability of the report. Since then, EPA has drafted policies supporting EPA's first paperless compliance reporting under the Reformulated Gas Program, as well as implementation guidances for several of the other pilot programs.

CONCLUSION

EDI is not a "magic bullet" that will solve all the problems associated with environmental data management. For one thing, its most immediate private beneficiaries appear to be large to middle-sized corporations with the know-how and vision to take advantage of its benefits. Small firms and individuals will probably continue for some time to use paper forms as a matter of choice, and EPA will continue to accept them in the spirit of customer service. Nevertheless, when EPA's policy on Electronic Reporting was published in 1990, the application of EDI to environmental compliance reporting was merely an untested concept. Since then, we have demonstrated that environmental EDI not only works, but provides opportunities to streamline and collapse seemingly disparate paper-based reporting processes. We have also learned that "doing EDI" is much less a technical conundrum than it is a challenge to change the established "business culture".

The success of EPA's EDI implementation pilots is also the success of our collaboration with over 200 industry participants, four software community groups, two dozen State and federal agencies, and several non-governmental organizations. If all interested parties can come together over the formation of voluntary agreements to do things cheaper, simpler, and better, they have obviously discovered some benefit in the undertaking. We can all benefit by reinventing environmental protection and eliminating unnecessary burdens. We welcome the Committee's interest in EPA's experience with EDI and we look forward to continued work in this exciting area.

Mr. HORN. Well, that's good news, Mr. Kelly. We appreciate you laying down that very thoughtful statement.

Dr. Hanna, I don't know if I have the right title for you since I don't have a resume on you. Assistant for information technologies?

Mr. HANNA. It's actually assistant for environmental information, but that's close enough.

Mr. HORN. Assistant for environmental information of the California Environmental Protection Agency. Is that assistant director or——

Mr. HANNA. No, that's assistant for.

Mr. HORN. Assistant for, OK. Very good, Dr. Hanna. Please proceed.

I should say this to all witnesses: We put your full statement in the record right after we introduce you, and then feel free to summarize it. Generally we follow a 5-minute rule. We are being a little more casual today. So with the Members we follow a 5-minute

rule, and we can afford to even be casual on that today. But so proceed, Dr. Hanna.

Mr. HANNA. Thank you, Mr. Chairman, distinguished Members.

I'm Steve Hanna of the California Environmental Protection Agency or Cal/EPA. I appreciate the opportunity to share our experiences in integrating environmental data and developing data standards for electronic reporting.

In general, environmental data systems have developed in parallel with the development of regulatory programs defined by State or Federal statute. These systems particularly reflect the single-medium regulatory focus of the programs, and these programs collect similar data in dissimilar ways. This has placed a significant burden on industry to report slightly different sets of data on different forms to local, State, and Federal environmental regulatory programs.

For example, a single business may be required to file a business plan for local emergency response purposes, register underground and/or aboveground storage tanks, report discharges to surface water, report air releases, report hazardous waste management volumes, and submit permit applications for air, water, and waste activities. All of these activities require the movement of data from a business to a regulatory agency, with paper as a normal vehicle of transmittal.

Electronic reporting of these data in standardized formats would be beneficial to both businesses and regulatory agencies. Electronic reporting from businesses to regulatory agencies is the transmittal of a specified set of data elements in a defined format, either over a direct connection such as a telephone line, or via magnetic media such as diskettes or tapes. The process saves businesses the time associated with the preparation of paper forms, saves Government the costs associated with transferring data from paper into a computer system. Government agencies receive the added benefit of increased data quality as businesses are extracting data from systems they use on a daily basis for business purposes and are not really completing paper reports solely for regulatory oversight purposes.

This should not be viewed as a mechanism which would allow Government agencies to justify increased reporting of regulatory data by facilitating the reporting process. In fact, the re-engineering which normally occurs in the transition from paper to electronic media typically results in a thorough examination of the need for the data, which actually decreases the volume of data collected. We have already experienced this reduction in data collection volume in current Cal/EPA efforts to consolidate regulatory reporting requirements.

A critical component in the development of electronic reporting mechanisms is the development of a standardized data element dictionary which can be utilized by regulatory reporting systems which collect similar data. This standardization effort is of enormous benefit to businesses, which would be able to report similar data in standard formats.

Data standardization efforts also result in increased Government efficiencies. As we've mentioned, existing paper systems invariably

collect data which are never used, which can be identified and eliminated.

In California we've taken various steps to integrate and standardize our data as well as support electronic reporting. Data integration efforts have been under way since 1988, and we currently have a master data base containing approximately 750,000 records, which integrates data from 50 State and Federal sources.

Electronic data are accepted for the Toxic Release Inventory, the California Air Toxic Hot Spots program, pesticide use reporting, and the biennial hazardous waste report.

Cal/EPA is also currently implementing the certified unified program agency effort, which combines multiple regulatory programs into a single local program. A central element of this effort is the development of a standardized data element dictionary as well as associated paper forms, which integrates data from multiple reporting systems into a single system. This data dictionary effort also supports the pilot electronic reporting project developed under California legislation AB 3537, authored by Assemblyman Sher.

The electronic reporting pilot project was signed into law by Governor Wilson in the fall of 1994 and involves the use of resources donated by volunteer industry participants and the demonstration of the cost-effectiveness of electronic reporting from businesses to regulatory agencies.

Thus far, the project has demonstrated the successful transmittal of hazardous waste shipment data from a recycling facility to a State agency and the successful transmittal of local business plan data from a business to a local agency.

Current efforts are evaluating the use of an electronic signature and electronic data submittal, and the project will be summarized by a report developed by July 1996.

A key element of this pilot project is the use of existing industry standards for data element definitions and transmission protocols, where they exist. The project has served to positively charge the atmosphere for the development of electronic reporting mechanisms and accordingly has accelerated the pace of data standardization and electronic reporting efforts within Cal/EPA.

Additionally, this project has established a cooperative relationship among industry, Government, and environmental organizations and has been free of the adversarial relationships sometimes encountered between the regulated community and the regulating agency.

While California and other States continue to pursue efforts to standardize regulatory reporting data and enhance electronic reporting capabilities, a significant barrier continues to exist in the multiple reporting requirements and associated data staples maintained by U.S. EPA.

The standardization and integration of U.S. EPA data was recommended in the July 1994 report, "Using Information Strategically to Protect Human Health and the Environment," sponsored by NACEPT. The U.S. EPA is apparently taking steps to implement many recommendations of this report and has committed significant resources to the effort. Unfortunately, under the traditional Federal rulemaking process, these efforts will take years to implement.

Federal legislation to standardize data definitions and electronic reporting criteria could result in the rapid development of standardized electronic reporting capabilities for U.S. EPA, which would serve to support and supplement efforts currently under way in States such as California.

To be optimally effective, such legislation should incorporate many of the components of the California electronic reporting pilot program. These components are the development of a standardized data element dictionary, use of only nonproprietary standards, use of existing industry and State standards when they exist, and development of systems in a true partnership among industry, State agencies, Federal agencies, and environmental organizations.

Thank you.

[The prepared statement of Mr. Hanna follows:]

PREPARED STATEMENT OF STEPHEN D. HANNA, PH.D., ASSISTANT FOR INFORMATION TECHNOLOGY, CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Mr. Chairman, distinguished Members, I am Steve Hanna of the California Environmental Protection Agency (Cal/EPA). I appreciate the opportunity to share the experiences of Cal/EPA in integrating environmental data and developing data standards for electronic reporting.

The mission of the California Environmental Protection Agency (Cal/EPA) is to improve environmental quality in order to protect public health, the welfare of our citizens, and California's natural resources. The agency emphasizes environmental regulation that is clear, understandable, enforceable, and uniform, stressing the need to safeguard California's high environmental standards, while simplifying the process designed to achieve those standards.

Cal/EPA consists of the Office of the Secretary and six Boards and Departments which regulate air quality, water quality, solid waste management, hazardous waste management, pesticide use, and hazard assessment. The scope of authority of the Agency is roughly analogous to that of the US Environmental Protection Agency.

My responsibilities within Cal/EPA relate primarily to issues of information resources management and include data integration, data dissemination, development of environmental indicators, strategic planning for information management, industry assistance, and the reduction of industry reporting burden by the implementation of sound information management principles. I am also the state contact for the Toxic Release Inventory (TRI) and serve as the California representative to the U.S. EPA Executive Steering Committee for Information Resources Management.

In general, environmental data systems have developed in parallel with the development of regulatory programs defined by state or federal statute. These systems typically reflect the single-medium regulatory focus of the programs, and these programs collect similar data in dissimilar ways. This has placed a significant burden on industry to report slightly different sets of data on different forms to local, state, and federal environmental regulatory programs. For example, a single business may be required to file a business plan for local emergency response purposes, register underground and/or above ground storage tanks, report discharges to surface water, report air releases, report hazardous waste management volumes, and submit permit applications for air, water, and waste activities. All of these activities require the movement of data from a business to a regulatory agency, with paper as the normal vehicle of transmittal. Electronic reporting of these data in standardized formats would be beneficial to both businesses and regulatory agencies.

Electronic reporting from businesses to regulatory agencies is the transmittal of a specified set of data elements in a defined format, either over a direct connection such as a telephone line or via magnetic media such as diskettes or tapes. This process saves businesses the time associated with the preparation of paper forms, and saves government the cost associated with transferring data from paper into a computer system. Government agencies receive the added benefit of increased data quality, as businesses are extracting data from systems they use on a daily basis for business purposes and are not merely completing paper reports solely for regulatory oversight purposes. This should not viewed as a mechanism which would allow government agencies to justify increased reporting of regulatory data by facilitating the reporting process. In fact, the re-engineering which normally occurs in the transition from paper to electronic media typically results in a thorough examination of the need for the data, which actually decreases the volume of data collected. We have

already experienced this reduction in data collection volume in current Cal/EPA efforts to consolidate regulatory reporting requirements.

A critical component in the development of electronic reporting mechanisms is the development of a standardized data element dictionary which can be utilized by regulatory reporting systems which collect similar data. This standardization effort is of enormous benefit to businesses, which would be able to report similar data in standard formats. Data standardization efforts also result in increased government efficiencies, as existing paper systems invariably collect data which are never used which can be identified and eliminated.

In California, we have taken various steps to integrate and standardize our data as well as support electronic reporting. Data integration efforts have been underway since 1988, and we currently have a master data base containing approximately 750,000 records which integrates data from 50 state and federal sources. Electronic data are accepted for the Toxic Release Inventory, the California Air Toxic Hot Spots program, pesticide use reporting, and the biennial Hazardous Waste Report. Cal/EPA is also currently implementing the Certified Unified Program Agencies (CUPA) effort, which combines multiple regulatory programs into a single local program. One central element of this effort is the development of a standardized data element dictionary, as well as associated paper forms, which integrates data from multiple reporting systems into a single system. This data dictionary effort also supports the pilot electronic reporting project developed under California legislation AB 3537 (Sher).

The electronic reporting pilot project was signed into law by Governor Wilson in the fall of 1994, and involves the use of resources donated by volunteer industry participants in the demonstration of the cost-effectiveness of electronic reporting from business to regulatory agencies. Thus far, the project has demonstrated the successful transmittal of hazardous waste shipment data from a recycling facility to a State agency and the successful transmittal of local business plan data from a business to a local agency. Current efforts are evaluating the use of an electronic signature in electronic data submittal, and the project will be summarized by a report developed by July of 1996. A key element of this pilot project is the use of existing industry standards for data element definitions and transmission protocols where they exist. The project has served to positively charge the atmosphere for the development of electronic reporting mechanisms and accordingly has accelerated the pace of data standardization and electronic reporting efforts within Cal/EPA. Additionally, this project has established a cooperative relationship among industry, government, and environmental organizations and has been free of the adversarial relationships sometimes encountered between the regulated community and the regulating agency.

While California and other states continue to pursue efforts to standardize regulatory reporting data and enhance electronic reporting capabilities, a significant barrier continues to exist in the multiple reporting requirements and associated data systems maintained by U.S. EPA. The standardization and integration of U.S. EPA data was recommended in the July 1994 report, "Using Information Strategically to Protect Human Health and the Environment," sponsored by the U.S. EPA and developed by the National Advisory Council for Environmental Policy and Technology. The U.S. EPA is apparently taking steps to implement many recommendations of this report and has committed significant resources to this effort. Unfortunately, under the traditional federal rulemaking process, these efforts will take years to implement.

Federal legislation to standardize data definitions and electronic reporting criteria could result in the rapid development of standardized electronic reporting capabilities for U.S. EPA, which would serve to support and supplement efforts currently underway in states such as California. To be optimally effective, such legislation should incorporate many of the components of the California electronic reporting pilot program. These components are the development of a standardized data element dictionary, use of only non-proprietary standards, use of existing industry and State standards when they exist, and the development of systems in a true partnership among industry, state agencies, federal agencies, and environmental organizations.

Thank you once again for the opportunity to provide the Cal/EPA perspective on developing data standards and electronic reporting capabilities. I shall attempt to answer any questions you may have.

Mr. HORN. Thank you very much, Dr. Hanna.

I'm going to ask the gentleman from Virginia, if he would, to begin the questioning.

Mr. DAVIS. Let me ask a question of either one of you. To the best of your knowledge, has either a Federal or State court ever visited the issue of whether an electronic signature validates a submission to regulatory information?

Mr. HANNA. In a legal perspective? We have just begun those discussions.

I think Rick Ferguson later could probably better address that, and David Roe perhaps. But certainly the indications initially are the fact that it's not a problem.

Mr. KELLY. I would agree. I don't think we have any case law that yet absolutely confirms this, but the best legal advice we have is that the systems we've developed are in fact legal and enforceable.

Mr. DAVIS. There's been no challenges to that or anything?

Mr. KELLY. Not that I'm aware of.

Mr. HANNA. It's not in practice anywhere as far as I know. Most of the electronic reporting so far is done on magnetic media, and they tend to be accompanied by a signature sheet.

Mr. DAVIS. OK. The California legislation puts the responsibility for developing electronic data reporting standards in the hands of the private sector. Are there policy issues which an agency needs to be wary of in the process of giving that control to private firms, or is it simply a matter of the best standard?

Mr. HANNA. I think it's a matter of the best standard. And when we talk about standards, we're talking about various things. There's data element definition standards as well as standards for transmitting data, which is primarily what EDI is, and we're looking at all of those, and while the development is in the hands of industry and environmental groups as well, it is under the direction and oversight of the Secretary of Environmental Protection.

Mr. KELLY. I'd also like to say that our approach to this has been modeled on the advisory committee structure, the FACA, so-called Federal Advisory Committee structure, where we have sought to make sure that every party to the exchange is represented on the committee that actually works together, works out the standards.

We don't want, you know, some interest to get into a situation where their particular interest is driving the negotiation and other parties are simply left out of it. I think that all of this has to be completely on the table and very open.

In our case, the Federal agency that receives the data is a party that needs to participate. All of this is true. Despite the fact that the standards that are developed are policy neutral, they really are technical standards. But we think that whatever structure would be set up has to involve all of the parties to the exchange.

Mr. DAVIS. OK.

Mr. Kelly, let me ask, how many different—do you know how many different electronic reporting projects the EPA has launched in the last, say, 5 years? And are they still active? And has any project relied on the data received for compliance purposes in lieu of paper submissions?

Mr. KELLY. I think is it about eight? Yes, it's about eight separate pilots that we are operating, and of those, one is actually up and running. Most of the—most of the programs we operate, Mr. Davis, are delegated to States, and that's where the complexity en-

ters in. Similar to the California experience, which I've read about, where assistance is being provided by members of the Council to the counties, to allow them to be able to actually receive electronic information, our States are in different stages of readiness in order to receive this information and use it.

The one area in which we are active and operating right now is a direct Federal program, which is reformulated gasoline.

Mr. DAVIS. OK. I wonder if you'd have, Mr. Kelly—if you'd have or could supply for the record the amount which the EPA spent last year to collect and manipulate privately submitted data, last year.

Mr. KELLY. I could provide that for the record. I do not have it with me.

Mr. DAVIS. If you could provide that.

[NOTE.—The information referred to was not received by the subcommittee.]

Mr. DAVIS. Let me again ask, Mr. Kelly, does your agency coordinate these sorts of electronic reporting of State environmental protection agencies, and have any other States initiated similar projects?

Mr. KELLY. I don't know—I'll ask David Schwarz, behind me, whether he knows if any States besides California have initiated their own projects.

We have worked with a number of States developing the projects that we are operating jointly—West Virginia, Pennsylvania, New Jersey, Wyoming, Iowa. These States are all very active with us in one or more pilot. Pennsylvania has been active on several of our pilots, but whether any States are independently initiating this work outside of California, I don't know.

David, do you know?

Mr. SCHWARTZ. I think that New York State and New Jersey have at least done some work on their own, and Massachusetts, I believe, has some sort of project in this area.

Mr. HORN. Mr. Kelly, would you mind repeating that for the record?

Mr. KELLY. Yes, my colleague, David Schwarz, has informed us that the States of New York and New Jersey have been active independently. They've also been working with us. And the State of Massachusetts also has a project, but we are not in a position to describe those.

Mr. DAVIS. OK. I will yield back at this point.

Mr. HORN. OK. Let me pursue some of the questions Mr. Davis has begun.

I notice, Mr. Kelly, in your description of the Discharge Monitoring Report, the DMR, on page 9, you noted that EPA has also resolved most of the outstanding legal issues. What type of legal issues arose? Just give the committee a feel for that, if you would.

Mr. KELLY. The main type of legal issue——

Mr. HORN. Yes, on the Discharge Monitoring Report, or in any of those areas.

Mr. KELLY. Right. The main legal issue is the acceptability of the information, the enforceability of the information, and whether or not the regulation itself allows for the submission of information outside of the paper format. We have determined that it is perfectly legitimate under the current regulation for this to happen.

The other thing is the issue that Dr. Hanna referenced a minute ago about the signature, who is the accountable party? And our approach to DMR provides for a PIN, or a personal identification number, which is personal. It resides in an executive of the firm, and that executive is accountable. And we have worked out a series of checks to ensure that the information submitted is identified and characterized, in terms of the number of data elements on that, and then when it's received in the State, which is operating this pilot, the same number of data elements, and there's a—there's a virtual photograph taken of it at that time, and we've also been checking back to make certain that what was sent in was in fact what was received.

But the main thing is to ensure that the personal identification number is accountable to an individual, and in that way it's very similar to the signature on a paper form.

Mr. HORN. But should that be published, the personal identification number? Is that subject to any mischief by hackers or anything else if that number becomes available?

Mr. KELLY. I suppose everything is possible, but because of the redundancy of our checks—it's possible that—right now, our thinking on the PIN is that it's more a psychological necessity than a legal necessity.

Mr. HORN. It seems to me you could have a PIN that the Agency would say, yes, that indeed is certifiable data from this individual that we're holding accountable. I don't know that that needs to be revealed in the record, however.

Mr. KELLY. Oh, no, no, we would not reveal it in the record, but if you were asking whether a hacker could possibly find out what the number was, all things are possible. That would not be our intent, but my point is, even if that were to happen, I don't think it would substantially invalidate the transaction.

Mr. HORN. Were these legal opinions put in writing by the general counsel of the agency?

Mr. KELLY. I believe so. We have had a committee—well, that's—obviously it has to be true in the case of reformulated gasoline, because we are in fact running that program.

Mr. HORN. Since that's sort of a common thing between agencies, if you wouldn't mind, let's have the opinion put in the record on the signature and this type of thing, the common things that we're trying to get a general law here, if you will.

Mr. KELLY. Sure.

Mr. HORN. That would encourage agencies to do what you've been pioneers in and California has been pioneers in.

Dr. Hanna, let me ask you, in the case of the California project, who is the ombudsman for small business in the standard-setting phase? Do you have anybody that takes the questions and tries to be helpful to the small businesses when you're dealing with the standard setting?

Mr. HANNA. Not directly in the project. Any of the issues that come up are handled by the data management advisory committee, which is appointed by the Secretary and consists of two industry, two software, and one environmental member.

Mr. HORN. In getting these basic data standards that we've talked about before and this hearing is going to get into, what sort

of difficulties have arisen with some firms and others in terms of the data standard? Any? Or was it pretty easy to say this is the way it ought to be done and everybody agreed?

Mr. HANNA. It's been fairly easy so far. We're developing a data element dictionary in parallel, and this effort has certainly stimulated that, and the industry participants have been more than happy to take what's been proposed as the cornerstone, with the caveat that what they've done, if there are any data elements that have specific industry standards that are defined in EDI, for example, then they share them with us, and then we're more than happy to incorporate those as standards.

One of the important things here is that developing of standard data element definitions for transmittal doesn't have to directly impact the data base anybody keeps. All it does is standardize the way the data looks coming in and going out the door. You can keep it in an entirely different format and just go through a one-time process to reprogram so you'll load the correct data in the right spot.

Mr. HORN. Now, just sort of educate me as to whether California's EPA and the U.S. EPA ask for similar or identical data in their respective reports when they're talking about a given type of report and a particular type of environmental protection. I mean is there agreement on the basic questions between the two agencies?

Mr. HANNA. How can I hedge on this?

Mr. HORN. Well, I think——

Mr. HANNA. There tends to be in general, but——

Mr. HORN. And I said for a number of years—let's move to another field for a minute—I said for a number of years it's an absolute idiocy that HHS and its predecessor, HEW, has not called in the health insurance people and said, do we start at the top of the page? Should the last name be first or the first name be first?

I mean, you know, there's certain things that ought to be—reasonable people ought to be able to agree on, and that's what I'm fishing for. How much have we tried to combine our forms?

For years States have talked about accepting, for example, the 1040 form of IRS and just saying here's our percentage, and simplifying people's lives. Yet everybody sort of says, gee, I've got my unique thing here, and it won't work without it. So where are we on that?

Mr. HANNA. In terms of environmental data, I think that the flavor has changed over the years, so there is more of an attitude now of trying to find common ground. It has not necessarily been that way in the past. For example, when the first SARA 312 for local business plan reporting was implemented, there were many States that had programs in place, and in fact many of those were the model for Federal legislation, and there was a—there were provisions for establishment of equivalency in the systems.

Well, unfortunately, equivalency ended up meaning if you obtained exactly the same identical data, you were equivalent, and nothing short of that, which is not exactly a partnership. I think we've made a lot of progress since then, but that does still exist.

Discharge Monitoring Reports: There is a Federal discharge monitoring report form that is required, and companies that have to file those forms in California have to file a separate one also with each

State water resources board that they are regulated by, and it is slightly different than the Federal form.

Mr. HORN. Is there a basic reason why it's different?

Mr. HANNA. Absolutely not. In my opinion, there is not.

Mr. HORN. In other words, we could take either the Federal form or the Federal group could take the State form in some cases.

Mr. HANNA. Right. And the—I think——

Mr. HORN. How do we solve that problem? Who do we get in the room and say here's the punching bag, come out when you're done getting the emotion out, and let's solve the problem?

Mr. HANNA. Certainly, in my opinion, the problem stems from the fact that everybody has historically been focusing on forms as opposed to data. If you focus on the data that you're required to collect, you can identify it in a common manner, and actually the step before that is, you should define the products you want out of your system. That should then define the data, that should then define the forms, and in fact we've always been working backward, with the form first.

Mr. HORN. How do you feel about that, Mr. Kelly?

Mr. KELLY. Well, I think that you have this basic dilemma. It has to do with our theory of Government. We're either a collection of States or we're a Federal establishment with State members. Under environmental statutes, States have traditionally retained the right to impose requirements over and above the national basis, which in our case, as a regulatory agency, EPA, has been set, and States have rarely felt reluctant to—well, I shouldn't say rarely.

Some States have laws that say that nothing more than what the Federal Government requires shall be established within that State. But there are a number of States that feel free to go beyond that.

I should tell you, on the discharge monitoring report, that we convened a regulatory negotiation a little over a year ago just because of this problem. It was driving transporters of hazardous waste just crazy, because they would go across a State line and they would have to have different information on board in order to move through that State. So we have worked out, at tremendous cost, in terms of labor, and a uniform national hazardous waste shipment form.

But even in doing that, the biggest problem we had was with States disagreeing as to what should be on that form. So I don't think we're going to be able to wish that problem away.

Mr. HORN. Well, I know in a State that has tougher standards than the Federal Government—and the two things come to mind right now. One is air quality in the case of California; the other is the great frozen chicken caper in California, where we have very strong standards about refreezing chickens and calling them fresh.

So it just seems to me it's one thing to increase the standard and ask for additional data, it's another thing to have a basic minimum standard that the Federal Government might have set, and I just wonder, are we asking unnecessary questions that don't really add to getting better air, or getting better water at the State level?

I mean, what are they adding to those Federal forms, that presumably you've covered under, at least, the Federal law? And how do we get the right people in the room to solve that? Is it getting

the State regulators and the EPA in the same room? And if so, why doesn't the EPA convene the conference?

Mr. KELLY. I think it's a good idea. I think that the difficulties are simply pragmatic. The complexities become exponential, because you have 50 States and so many negotiations that need to be carried on.

I want to make sure, when I described that project before, I was talking about the hazardous waste manifest. I may have said Discharge Monitoring Report by mistake. I meant hazardous waste manifest.

Mr. HORN. Yes, with the truck situation between State boundaries; I did understand that.

Mr. KELLY. That's right.

Mr. HORN. The old story of garbage in, garbage out. Going to electronic transmission isn't going to do any good if we don't get agreement on the basic questions and then convert them into the language you need for electronic transmission.

But it seems to me this is a unique time to say, hey, just because we do it faster doesn't mean we've done it right, and just because there's an ease of deposit, if it's a bunch of garbage or they are not asking the questions that ought to be asked, and we've got 18 different ways to ask one question where we could figure out one different way, so the public and the press and everybody else wouldn't be confused about what's being submitted.

I would commend the EPA to try to get everybody in the room or start on a reasonable basis, maybe California and its neighboring States or whatever, and say, hey, we've done this because this makes sense, in which case maybe EPA ought to change its form, if it makes sense.

Mr. KELLY. I should mention to you—it's in the written testimony that I submitted—that EPA has embarked on a truly enormous undertaking to create what we're calling one-stop environmental reporting. That would respond to some of the comments that Dr. Hanna made about a data directory and a single set of definitions and a single set of environmental information that would suit all of the environmental programs, at least all the Federal environmental programs. I think it's an enormous undertaking, a very courageous undertaking, and I think that could be the vehicle in which this kind of cohesion could take place between States and Federal Government.

But I would point out to you, sir—and you know this better than I—in order to get that kind of consistency between the Federal Government and the States, traditionally that has put the Federal Government in the role of a kind of dictator, and there's not much of an audience for that type of role in the country today. So I don't quite know how you get to it, the uniformity among 50 States and the Federal Government.

Mr. HORN. Well, I'd like to believe you could get reasonable people in the room and agree on this, including the use of the English language and all the rest, so the poor soul down there at the bottom that's filling this thing out in a plant of three people and knows in simple English what it is you want—you know, I don't regard that as an unachievable object, or an unachievable goal.

It just seems to me we ought to make the effort and everybody be willing to give what a little common sense says will be appropriate. I just think somebody needs to do it on a regional basis maybe and take that model.

We do this with the uniform State codes: Get a bunch of people together from different States; you agree: "Hey, this is a good thing, we ought to submit it to our legislature and have them add it to the uniform system of codes."

So I'm told by staff here that the 1040—EZ, was designed by a private graphics company under the contract by congressional—insistence, to IRS, and perhaps other agencies could take an approach. And that's according to minority staff. We thank minority staff.

Any questions the minority staff would like me to ask, I'd be glad to ask on behalf of the minority.

And Mr. Flanagan, the gentleman from Illinois.

Mr. FLANAGAN. Thank you, Mr. Chairman. I am pleased to be here, and I welcome the panel, distinguished experts in this field, and a burgeoning field it is.

Mr. Hanna, currently your agency allows for electronic reporting of environmental data. What if someone wants access to the data who does not have a computer? Can he get a paper document?

Mr. HANNA. Typically, yes.

Mr. FLANAGAN. How many employees at your agency are devoted to the electronic reporting project?

Mr. HANNA. To this reporting project? Well, I'm the liaison to the project, and there's a person that's spent part-time in development of the data element dictionary.

Mr. FLANAGAN. How many do you envision eventually?

Mr. HANNA. That's hard to put my finger on. If you're—if what you're asking is if all of our reporting of regulatory data is electronic, then I would have to say it would probably be in—easily in the tens.

Mr. FLANAGAN. Tens, dozens, hundreds?

Mr. HANNA. Yes, it would be under 100, I would think, certainly a large information management staff. Not that many, but it would be under 100, I think, for a large agency.

Mr. FLANAGAN. OK. How many employees has your agency—I'm sorry—have local governments been receptive to the idea of electronic reporting——

Mr. HANNA. Yes.

Mr. FLANAGAN [continuing]. And electronic access to information?

Mr. HANNA. Yes, they have been.

Mr. FLANAGAN. How so?

Mr. HANNA. Well, in terms of the pilot project, they've been very interested in it.

One of the—one of the best lessons we've learned from this is, this is only going to be effective if everybody is happy, meaning small businesses, large businesses, local governments, State governments as well. There's a sales job that has to be done here.

Most data management professionals that want to get data in don't know about EDI, and they don't care about EDI, they just want to get data in their standard format. So there's a sale that has to take place here.

Small businesses don't know anything about EDI, and they may not want to pay for it, so it may well be that we—on the other hand, large businesses have made a corporate decision that they will not submit electronic data in other than EDI formats. So it may well be that we have to just bite the bullet and say, OK, we'll take in the standard flat file configuration and we will take in EDI format as well.

Mr. FLANAGAN. Just parenthetically, there's some analogy to the burden over the years that we have placed upon employers in an immigration vein, where we have tried to work them into the system to help us accomplish that goal for the greater good, and it is increasingly going to the direction of encouraging, or I should say motivating, employers with a stick approach rather than with a carrot approach.

Do you envision some possibility of involving businesses to be forthcoming in the data electronically because of the savings to the taxpayer, I would imagine overall, with a carrot approach rather than eventually working to the way of saying this works so well, so we're going to penalize you if you don't do it?

Mr. HANNA. I have seen no sticks. I——

Mr. FLANAGAN. Not yet.

Mr. HANNA. I do not envision them. I mean it's—everybody that wants to play in this will do it because it's to their benefit.

I have not heard any discussion about elimination of paper forms or mandating that. I think Canada tried that, and I think they had to abandon it for their TRI analog. It's certainly conceivable that, from a fees perspective, an agency could say it costs us more, so if you submit on paper we're going to try to charge you more. That hasn't been proposed, that I know of, and so it hasn't been tested.

Mr. FLANAGAN. Have the project managers, such as yourself or any other scholarly work on this, put together a way where these small businesses who you have mentioned may be reluctant to participate—is there a way to encourage them to participate?

Mr. HANNA. I have not seen any. Certainly that's one of the interests, is how do we get them on board.

Mr. FLANAGAN. OK. And last, as you well know—if you don't, I'm sure Mr. Kelly can tell you—there's very little money available for environmental initiatives these days. If you could wave a wand and get something from U.S. EPA to improve or coordinate environmental regulation in California, what might that be?

Mr. HANNA. The biggest thing that we need in order to standardize our own data is to have U.S. EPA standardize the data element definitions from media program to media program. They also have an effort under way to develop a key identifier, which is a single facility identifier, that's integral to the same project, and at the same time there are many parallel Federal efforts to move to environmental indicators as an evaluation of exactly what environmental programs have been doing and what the State of the environment is, and if your data are truly capable of being integrated, then they should all be able to display themselves in terms of an environmental indicator. So these are three ways.

I think. The funding issue you addressed—and I don't know how to solve that. Right now, there's no—at the Federal level, as far as

I know, there is no central control for implementation of information management projects within the media programs. So——

Mr. FLANAGAN. Do you think that central control, i.e., I would imagine Federal control, of such a project would be helpful?

Mr. HANNA. Again, it's an authoritarian approach. But the problem with implementation or the concern in the NACEPT report and discussions, we had this concern a lot, even if we all come up with great ideas and U.S. EPA tries to put them forth. Information Resources Management Office, the OPP&E office, they are not the media programs. And the media programs, the environmental media programs, they are water and waste and are the big players, and what penalty do they incur if they do not integrate their data or standardize their data? And so far, I haven't had an answer to that.

Mr. FLANAGAN. Or perhaps what benefit can they be convinced is—they will derive if they do do this.

Mr. HANNA. That's one of the reasons I indicated that I would like to see all data flow up into some sort of a central environmental indicators report, because that would be an evaluation for how standardized they are.

Mr. FLANAGAN. Yes, Mr. Kelly.

Mr. KELLY. Mr. Flanagan, before you came in I was talking about an effort; let me just mention two things: First of all, our agency recognizes these problems and they are age-old problems. I have been in the Federal Government 27 years now and I've worked in three agencies, and encountered the same problems in each agency—exactly what Dr. Hanna referred to—and that is that the real power tends to be in the operating programs. And "knowledge is power."

The information that supports a program, tells a program manager where his or her problems are, is the power to direct that program. So managers are very jealous of the information that they do get and are not likely to want to say, "OK, I'll change it today," in order to make everybody else's job a lot easier. Those are the kinds of dynamics that you're working with.

But EPA, after this National Advisory Council on Environmental Protection and Technology, NACEPT it's called, put together its report in 1994, moved very aggressively, very substantially to adopt what we are calling an "enterprise" concept of how we're running our agency and the information that supports our agency. The idea is that in the Environmental Protection Agency we're a little bit like General Dynamics or General Motors or American Airlines, and we're in the business of environmental protection. And that's not just the water business. It's not just the air business. And out of that thinking comes this project that I've referred to as the "one-stop" reporting initiative. I think it's a formidable enterprise, and there are going to be a great deal of difficulties that we encounter. But the very first thing is that we are developing a single facility identifier so that if you've got a firm here that is operating under an air permit, a water permit, and a hazardous waste permit, it is going to have one identifying number for all three of those systems. That automatically starts pushing things together into an integrated system.

Beyond that, the agency is committed to identify what information is required and have common definitions across those three programs. And while each program eventually will be able to get the reports that it needs, the reports are going to be generated out of a common environmental data base that can be maintained at each facility.

It's little bit like the Holy Grail. It's a little bit like the answer to all our problems. Nevertheless, I think it's the right direction and that's where we're headed.

Mr. FLANAGAN. I think you will find—let me offer gratuitously that on this side of the aisle, we have a general deference to the States to manage these problems, but at least in this Member's mind, the environment is more of a national matter that needs the cooperation of the States as opposed to an utter and complete deference to them out of the EPA.

And so if there is some centralized way of doing it effectively, which California and Illinois and other States can participate, perhaps that's the way to go. And we will look at it very closely.

I thank the panel. You have been most informative.

And I thank the chairman.

Mr. HORN. I think you've raised a very interesting question, if I might pursue some of that with Mr. Hanna.

In California, we have several other agencies that are involved in environmental protection besides the State EPA. One is the southern California Air Quality Management District. You also have various water resource boards.

What type of cooperation have we been able to get within California along the line Mr. Kelly's talking about, that whether it's an air quality case, water quality case, hazardous waste case, they should at least be able to get the common identifier on the same facility as a start. Where are we in California on that?

Mr. HANNA. We're making progress.

Some of those are, in terms of the water boards, the water boards by definition are within our scope of authority, so they exist—we have been a long time addressing——

Mr. HORN. You can give them guidance on the formatting of reports?

Mr. HANNA. Yes.

Mr. HORN. All right.

Mr. HANNA. That is certainly the intent.

Historically, there have been not just one State discharge monitoring report, in fact, but nine. One from each water board, one separate form, and I'm sure that will change. That's one of the things that we're looking at as well in the process.

The South Coast Air Quality Management District is a little different animal. They are—the California Air Resources Board sets standards, then the South Coast District must adhere to—but the South Coast, in an entirely analogous situation, as States to the Federal Government, has their own authority to go beyond that if they choose.

Even—but inasmuch as there is a shared goal here, what I have found is when you get people in a room, as you say, or the same people at a table, no one can object to the fact that if you are col-

lecting similar data, you need to have a single identifying standard for the collection of that data because everybody benefits.

Mr. HORN. Is the State EPA planning to move toward that?

Mr. HANNA. Certainly, in every way that we can.

Mr. HORN. Let's talk a little bit about security measures and what type of computer security measures are needed, if any, in relation to the electronic data reporting program as opposed to the paper reporting program. What was the thinking in California on this and what did you worry about?

Mr. HANNA. It is certainly something that has come up associated with digital signature, that the security in terms of access to the systems I think is unchanged from the traditional paper form. What changes is the mechanism by which the data enters the system. Once it is in, it is as secure.

Typically, most of the large systems are housed in traditional data center mainframe facilities which are notoriously secure, at least they have been so far. Some of the problems that exist in terms of the question of if I give my data to you electronically or on diskette and I disagree with you when you come knocking on my door, who has changed the data?

I have never yet seen a data system that hasn't been at one time inadvertently changed, so industry has a concern there. At the same time, the Government has a concern that someone could just go back into their own PC, change their data and say no, that is not what I gave you. It is a problem.

There are ways I think to potentially address that with encryption of data. Certainly other people are more knowledgeable about that than I am. My knee-jerk response to this problem initially is similar to the way the Toxic Release Inventory program has implemented some of their reporting, is basically with a summary back to the submitter of data saying this confirms that what you reported to us electronically was number of pounds of benzine released into the air, et cetera. There is still some paper involved, but nevertheless, there is a document that both parties can hold on to that confirms receipt.

Mr. HORN. Mr. Kelly, any comments on the security system from EPA's standpoint?

Mr. KELLY. I would agree with Dr. Hanna. In our case, we have the personal identification number, which creates an accountable executive, just as the signature does for the paper exchange. We take an electronic snapshot of the information as it arrives. We send back a summary of that information for validation, and as a result, if any discrepancy were to come up thereafter, it would be fairly clear when and where that discrepancy had to have taken place. We don't think it's going to be a problem.

Mr. HORN. Tell me to what degree was national EPA involved in the development of the California project?

Mr. KELLY. I don't think at all.

Mr. HANNA. Not at all.

Mr. HORN. You mean a State went off and did something on its own?

Mr. KELLY. Kind of wonderful, isn't it?

Mr. HORN. That's right. Anyhow, you seem to be both working in the same direction, whether we are talking to each other or not.

Mr. Kelly, you've made a good presentation of the various areas in which you're trying to apply electronic filing. To what extent—and are there any others you haven't had a chance to get on the record, of better information for the average citizen coming out of all this?

Mr. KELLY. Well, as I mentioned in my statement, we are using every instrument at our disposal to make information available to the average citizen through the Internet, through our putting regulations before the public and allowing for regulatory comments, and so on.

Mr. HORN. So you covered that in your testimony.

Mr. KELLY. I think I covered that.

What I would say is this: On the specific subject of electronic interchange of environmental compliance information, it's not very well kept secret that when the information comes in on paper, it's a pretty junkie system. We worry about having a trail to follow the information all the way from beginning to end electronically, but we don't have any such thing, we don't have a chain of custody on paper transmissions. It goes into the mail and we get it. Anything could have tampered with it.

When it arrives, typically at the State, they've got a big workload problem. They have got to take that stuff out of envelopes, sort it, and keypunch it. They make errors.

And many times, I have been told you can find closets full of back-loaded information that has not yet gotten into the system simply because of the inefficiencies of that process. So, you always have to ask yourself, "compared to what?" We think that the electronic information is going to get into public access much, much quicker simply because all of that keypunching is going to be done prior to its even being submitted, and our experience—I shouldn't say experience so far, but our projections are that we will be able to make summary reports and facility reports available to members of the public with appropriate safeguards for confidential business information very, very soon after we actually receive it, and this is not possible now under paper reporting.

Mr. HORN. I assume it'll also be possible with electronic reporting to have a scanning system that a trigger goes off when certain numbers are put in beyond a particular tolerance level.

Mr. KELLY. Sure.

Mr. HORN. Is that being worked on now?

Mr. KELLY. I am under oath, sir. I think so, but I know it's quite easy, for example, if you have got an acidity of 16, I mean that's going to get thrown out.

Mr. HORN. Well, certainly IRS has been doing that for years in terms of various tolerance points.

Mr. KELLY. Right.

Mr. HORN. A couple of last questions.

I'm curious, Dr. Hanna, to what extent did California EPA retain the role of rejecting a standard by the Private Standards Committee and did that occur in some cases?

Mr. HANNA. That has not occurred. For example, to the extent of, is there a standard that exists for which there were reams of electronic data housed and industry has a separate standard, that has not occurred. Even if it did occur, the only problem I would

foresee is if the two were not capable of translating to one another. Because if they do, we can always load the translation up and everybody is happy. But may I——

Mr. HORN. Sure. Please comment.

Mr. HANNA [continuing]. The previous question you had as well. In terms of data systems, most data systems, and certainly any one worth its salt, edits the data on the way in and communicates one way or another with the data on paper or otherwise if they exceed certain tolerance levels or miss some edit checks.

The other Federal program I think that is worthwhile looking at, not necessarily as a model, but just in terms of looking at accessibility to data that is submitted in this case magnetically, is the Toxic Release Inventory. It exists primarily for public right-to-know purposes. The data are also submitted to the States. They are submitted now. You can't actually submit them in a proprietary format.

The U.S. EPA distributes a diskette that is used to prompt submitters for the data. They can also submit to using established standards which are not EDI standards. All that aside, they have increased greatly the number of submittals of data in magnetic media.

Their information processing times have gone down significantly. They have been able to reduce the amount they have to pay for people to enter the data and the notices of technical error back to submitters have declined as well. So, I mean, viewing just a part of that, there are enormous benefits.

Mr. HORN. Very helpful.

Any last words on this, Mr. Kelly?

Mr. KELLY. No, sir. I just would reflect that this is a time of great debate about the place of environmental protection in our national system of public protections, and it's great to be able to come up here and give you a good report on real progressive activity.

Mr. HORN. Well, we appreciate it.

You mentioned in passing the Holy Grail. Both of you should be crusaders in getting everybody else in the room involved. So give my regards to Mrs. Browner and tell her that Congress even put up the money to pay the gasoline.

I think you're both working in the right direction and a lot of good could come out of this. I just hope it isn't one State only that's doing it and only EPA, but we can get everybody on board. So good luck.

And we thank you for your testimony. It's most helpful.

Mr. KELLY. Thank you, Mr. Chairman.

Mr. HORN. And if panel 2 will come forward.

Mr. Lamont, Mr. Roe, Mr. Ferguson, we'll swear you in and get on with panel 2.

If you would raise your right hand.

[Witnesses sworn.]

Mr. HORN. Thank you.

The three witnesses have agreed, been sworn.

We're going to start with Mr. Brad Lamont, the vice president of Romic Environmental Technologies Corp.

And as I noted, we put your full statement in the record at this point. Feel free to summarize it.

But today we've got the flexibility. If you want to go longer, go longer. But the main object is to get the story out.

So we'll start with you, Mr. Lamont.

STATEMENTS OF BRAD W. LAMONT, VICE PRESIDENT, ROMIC ENVIRONMENTAL TECHNOLOGIES CORP.; DAVID ROE, SENIOR ATTORNEY, ENVIRONMENTAL DEFENSE FUND; AND RICHARD A. FERGUSON, BOARD MEMBER AND EXECUTIVE DIRECTOR, ENVIRONMENT & SAFETY DATA EXCHANGE, ESDX

Mr. LAMONT. Thank you, Mr. Chairman, members of the subcommittee. Thank you for the invitation to testify before you today.

I am Brad Lamont, vice president of Romic Environmental Technologies, what we like to refer to as the leading hazardous waste recycling company in the United States.

For the last 8 years, I've been intimately involved in the management of the operations of our East Palo Alto facility located in California. We're a small company. Our revenues are less than $50 million. We have got roughly less than 300 employees. We are privately owned and we were started by a Swiss farmer.

We move material from throughout the United States into our California and Arizona facilities. We would like to classify ourselves as being very entrepreneurial, but certainly predicate this on a tremendous amount of practicality and common sense.

The concept being discussed today, electronic data reporting and the potential legislation, promises the Nation's business community, especially smaller companies like Romic and the governmental agencies, great potential for cost savings, improved efficiency as well as data quality. As one competing in today's business market, I can personally attest to the fact that such efficiency and cost-effectiveness is necessary, even critical for all of us in this budget-conscious environment. It's very competitive out there.

A lot of people jumped into the environmental management business, oh, about 10, 15 years ago. The margins have clearly been squeezed. What it's motivated companies to do is to look internally and do a lot of serious re-engineering and certainly look for improvements and efficiency in cost-cutting wherever possible.

Many companies already use electronic commerce to exchange ordinary business documents, such as orders, invoices, shipping documents, notices, simply to reduce costs to eliminate paperwork and to speed information exchange. And like Romic, a number of businesses are reducing cost of environmental compliance using computer-based tools and techniques.

Extracting this data for analysis and retyping on Government reporting forms is a wasteful step backward for these companies. This process is especially cumbersome when numerous agencies request the same or similar information on different forms.

Likewise, it's extensively time-consuming for governmental agencies to have to take those paper forms and retype, rekey the information into a computer system, just ridiculous.

Opponents of electronic reporting have expressed concerns that small businesses are not in a position to enter the technological age as are large, multinational companies that are readily equipped with computer hardware and software. They assert that these

smaller firms do not possess the financial or human resources to "come up to speed," enabling them to electronically transfer data to governmental agencies or other businesses.

Romic serves hundreds of small businesses and we can verify that these small companies can indeed engage and indeed are engaged in electronic commerce and other electronic data transfer. With standardized electronic formats, as called for in this legislation, the only requirement would be a PC, such as almost everyone in this room has at home or at their desk in their office. In 1994, an astonishing fact I learned about a month ago, more PC's were purchased for use in the home than indeed were TV's.

I had a pleasure of meeting with Andy Grove, CEO of Intel approximately 3 weeks ago, and he shared that today 20 million PC's are being purchased a year. They anticipate this to go up to 60 million per year over the next 5 years. He shared that a tremendous percentage of this hardware is being used in the small businesses.

We emphasize that the option to report electronically should be voluntary. However, sophisticated hardware and software will not be a requirement in the electronic commerce age. And not only can small business take advantage of electronic data exchange, but the cost and the time savings with them would be particularly significant.

Romic's own involvement in this issue came about because we always strongly believed that customer service is paramount to our business. We are recycling the waste of thousands of small and large businesses, as I mentioned, throughout the United States. Our customers continually come to us seeking better and more efficient ways for all of us to do business.

In recent years, that efficiency has led us to integrate our electronic systems into our daily activities, from waste tracking to invoicing, certainly into customer service. In many cases, our customers, again both large and small, have requested that we provide this type of computerized efficiency.

In 1994, more than three times as much information was transmitted e-mail than the traditional snail mail. This morning I was reading in the "USA Today," it is reported that 35 million Americans are currently using e-mail. It's out there. We're all using it. We're jumping on it.

We felt that the natural extension of this computerized efficiency was to apply it to our and our customers' environmental reporting requirements. For that reason, we took the lead last year initiating legislation in the State of California. Our bill which had broad bipartisan support throughout the legislative hearing process, made California the first State to authorize computerized filing to ease paperwork burden for the State's businesses. It also required the development of statewide industry standards for data transmission.

Along with California, other States are also adopting standards as we heard here, formats and protocols for electronic reporting. Now, I believe that the next step is to ensure that the businesses have the opportunity to report electronically to Federal agencies using the same industry data standards adopted by the States.

As an example of this time and energy and paper savings of electronic reporting, this one computer disk holds a month's worth of hazardous waste manifest data, what previously would have been

stored in six file boxes that would have stretched almost the length of this room here.

Last Earth Day, we had the honor to be the first company in California to transmit manifest data to the State electronically. Normally, submission of a month's manifest data to the State would have exceeded 3,000 pieces of paper. The cost and paper handling for both Romic and the State would have been several thousands of dollars and the delay in having information readily available for Government and the public would have been substantial. However, the papers, the electronic transmission, took a mere 48 seconds and the information was immediately available to the State.

We've estimated that electronic transmission of hazardous waste manifest data translates into a savings of at least $2 million annually, to California businesses in savings in time, paper and postage. Likewise, electronic reporting holds promise for speedier permit approval. This new application of electronic technology further opens the door for the elimination of some of the red tape so prevalent in the environmental realm.

Government agencies might seriously reassess the need for such extensive and often redundant information. They could re-engineer their internal processes just as we currently are doing ourselves today, promising even greater cost and time savings for everyone, certainly to improve the data quality. I applaud Dr. Hanna and the State of California for embracing this.

We firmly believe this streamlined, uniform approach to electronic reporting will be good for the Nation's manufacturers, the Nation's growing information industry, certainly our environment. We're bringing this Nation's pace-setting electronics skills together with the popular goals of environmental management and monitoring.

We're also bringing about a new era of cooperation among many formerly adversarial entities. In California, the Data Management Advisory Committee mandated, by our State law to carry out this element of the statute, is composed of State and local government officials, industry leaders and environmental organization representatives. All committee members have become cooperative partners, striving to achieve a goal which will be a win-win for everyone.

Again, thank you for the opportunity to participate in launching this new on-ramp to the information superhighway with the potential for greatly reducing the paperwork burden on businesses and Government.

Mr. HORN. Well, we thank you Mr. Lamont. I sort of conclude we're going to save the trees and wreck the Post Office based on what we are doing here this afternoon.

[The prepared statement of Mr. Lamont follows:]

PREPARED STATEMENT OF BRAD W. LAMONT, VICE PRESIDENT, ROMIC ENVIRONMENTAL TECHNOLOGIES CORP.

Mr. Chairman and Members of the Subcommittee:

I thank you for the invitation to testify before you today. I am Brad Lamont, Vice President of Romic Environmental Technologies, one of the leading hazardous waste recycling companies in the United States. For the last 8 years, I have managed the operations for Romic's East Palo Alto, California facility.

The concept being discussed today, electronic data reporting, and the potential legislation promises the nation's business community—especially smaller companies like Romic—and governmental agencies great potential for cost savings, efficiency, and improved data quality. As one competing in today's business market, I can personally attest to the fact that such efficiency and cost-effectiveness is necessary even critical—for all of us in this budget-conscious environment.

Many companies already use electronic commerce to exchange ordinary business documents—such as orders, invoices, shipping notices—to reduce costs, eliminate paperwork and speed information exchange. And like Romic, a number of businesses are reducing the cost of environmental compliance using computer-based tools and techniques. Extracting this data for analysis and retyping on government reporting forms is a wasteful step backwards for these companies. This process is especially cumbersome when numerous agencies request the same or similar information on different forms. Likewise, it is extensively time consuming for governmental agencies to have to take those paper forms and rekey the information into their computer systems.

Opponents of electronic reporting have expressed concern that small businesses are not in a position to enter the technological age as are large multi-national companies that are readily equipped with computer hardware and software. They assert that these smaller firms' do not possess the financial and human resources to "come up to speed," enabling them to electronically transfer data to government agencies and other businesses. Romic serves hundreds of small businesses and we can verify that these small companies can indeed engage in electronic commerce and other electronic data transfer. With standardized electronic formats—as called for in this legislation—the only requirement would be a personal computer—such as almost everyone in this room has at home or on a desk at the office. We emphasize that the option to report electronically should be voluntary. However, sophisticated hardware and software will not be a requirement to join the electronic commerce age. And, not only can small businesses take advantage of electronic data exchange, but the cost and time savings to them will be particularly significant.

Romic's own involvement in this issue came about because we have always strongly believed that customer service is paramount to our business. We are a relatively small, privately-owned firm, recycling the waste of thousands of small and large industrial companies throughout the United States. Our customers continually come to us seeking better, more efficient ways for all of us to do business. In recent years, that efficiency has led us to integrate our electronic systems into our daily activities from waste tracking to invoicing and customer service. In many cases, our customers—both small and large—have requested that we provide this type of computerized efficiency.

We felt that the natural extension of this computerized efficiency was to apply it to our and our customers' environmental reporting requirements. For that reason, we took the lead last year in initiating legislation in the State of California. Our bill which had broad bipartisan support throughout the legislative hearing process made California the first state to authorize computerized filing to ease the paperwork burden for the state's businesses. It also required the development of statewide industry standards for data transmissions. Along with California, other states are also adopting standard formats and protocols for electronic reporting. Now, we believe that the next step is to ensure that businesses have the opportunity to report electronically to federal agencies using the same industry data standards adopted by the states.

As an example of the time, energy and paper savings of electronic reporting, this one computer disk holds a month's worth of Romic hazardous waste manifest data—what previously would have been contained in six large storage boxes, totaling about 60 cubic feet! Last Earth Day we had the honor to be the first company in California to transmit manifest data to the State electronically. Normally, submission of a month's manifest data to the State would have exceeded 3000 pieces of paper. The cost in paper handling for both Romic and the State would have been several thousand dollars and the delay in having information readily available for government and the public would have been substantial. However, the papers electronic transmission took a mere 48 seconds and the information was immediately available to the State.

We have estimated that electronic transmission of hazardous waste manifest data translates into a savings of at least $2 million annually to California businesses in paper, time, and postage—merely for not sending a paper copy to the State. Likewise, electronic reporting holds promise for speedier permit approval. This new application of electronic technology further opens the door for the elimination of some of the "red tape" so prevalent in the environmental realm: government agencies might seriously reassess the need for such extensive and often redundant informa-

tion. They could re-engineer their internal processes, promising even greater cost and time savings for everyone and improved data quality for themselves.

We firmly believe this streamlined, uniform approach to electronic reporting will be good for the nation's manufacturers, the nation's growing information industry' and our environment. We're bringing the nation's pace-setting electronics skills together with the popular goals of environmental management and monitoring. We are also bringing about a new era of cooperation among many formerly adversarial entities. In California, the Data Management Advisory Committee, mandated by our state law to carry out the elements of the statute, is composed of state and local government officials, industry leaders, and an environment organization representative. All Committee members have become cooperative partners, striving to achieve a goal which is will be "win-win" for everyone.

Again I thank you for the opportunity to participate in launching this new "on-ramp" to the information superhighway with the potential for greatly reducing the paperwork burden on businesses and government.

Mr. HORN. Mr. David Roe, the senior attorney for the Environmental Defense Fund.

Welcome.

Mr. ROE. Thank you, Mr. Chairman, and thank you very much for inviting us. We're very glad to be able to be here and provide environmental groups' perspective on this issue.

The Environmental Defense Fund is a national nonprofit organization with about 300,000 members, of which about 50,000 are in California. We have a number of regional offices, one of which is in California where I've been since 1976. And we hired our first computer programmer in 1977, so we've been in this—in this business for some time. We now have five full-time computer experts in that one office alone.

What I'd like to do this afternoon is make three basic points and then elaborate just a bit on one of them: The first is that the benefits of what we're talking about here are, if anything, understated in your opening statement. This really does have the potential to simultaneously reduce the cost and burdens on business and on Government and actually increase environmental protection.

And a factor which should not be overlooked, also increase the public's sense that the environmental laws are working effectively and fairly; in other words, applying fairly across the board. Those are very substantial benefits and very much in the interest of the environment to pursue.

The second basic point is that this is not automatic. The degree to which these benefits can be realized depends crucially on the public's confidence that an electronic system and electronic data management will not be abused and that the result of using it will be more, not less public access to information, more, not less public oversight of the regulatory process. And as I say, that's not automatic, and what I want to focus on in my oral remarks is how to help make that the case.

And the third point which needs to be made is that a very important part of the benefits of electronic data transmission can be realized without any changes in the underlying environmental statutes. Obviously, if the statutes are changed in a way that is sensitive and receptive to this technology, the benefits can be even higher. But it's important not to overlook the amount of progress that can be made even if all the requirements stay as they are, even if Federal and State requirements are not harmonized or inconsistent, even, if, in other words, we have the world that we see today. And I want to come back to that, as well.

In terms of the benefits, you have—you don't have anyone on this panel actually from small business. Mr. Lamont deals with small business. I'd like to throw in an additional 2 cents about the small business aspect of electronic data transmission because it's easy to assume that they are always going to be left behind.

Governor Wilson appointed me to his so-called Blue Ribbon Commission on Exploring a Streamlined Environmental Statute, and one of the things we heard on that commission over and over again—this was in California, of course, from small business, was how hard it is to find out even what's required. We have to pay someone $50,000 from a big law firm just to find out what's required and then we have to report it to a dozen agencies, on 22 different forms.

This was the complaint, not that meeting the requirements was so burdensome, not that it was so expensive to keep your emissions down, but just figuring out the problem and just getting the information across. Obviously, electronic data transmission can help enormously in terms of reducing that cost and inefficiency and smoothing out that process, and it's a two-way street.

It ought to be just as easy for a small business to use an electronic information searching system to find out what laws apply to it, not just Federal, not just State, but county, fire department ordinances. There is an enormous range of potential things that apply, and of course report on a single electronic form and let computers distribute that information back to all the various places, all the various end points in Government that need it. You don't even need to own a computer to do that.

The cost savings in this process that we've heard about, to some extent from Mr. Lamont, are high enough that we anticipate this field will attract the equivalent of accountants. Just as you don't need a computer to file your tax return electronically because your accountant does it, we believe there's a business opportunity here for the equivalent of environmental accountants, performing this service, and by the way, guaranteeing the accuracy of the data transmittal. Someone who is, in effect, an electronic notary, someone who can guarantee that what a small company gave it, perhaps even on paper, came out the other end of the process, the other end of an electronic process, even with encryption and deencryption and hash-mark signatures came out accurately. That business doesn't exist today. But the kind of companies that would perform it, value-added networks, do exist, and we think the committee needs to keep this in mind in terms of thinking about the impact on small business.

For the environment, which is, after all, why I'm here and what my organization cares about, two major benefits. One is, the easier it is to comply, the more compliance there will be. Right now, the system misses a lot of participants because the threshold of dealing with this system on paper is too high. We don't talk much about that, but we know that that's true.

The second is the power of information itself. Even independent of Government regulatory mechanisms can be extraordinary. TRI is the example we're familiar with at the Federal level. California's Safe Drinking Water Act, Toxic Enforcement Act of 1986, is a State example that we've had a great deal of experience with. Both of

those show that available information can have a very positive effect on environmental compliance.

Now, my second point, which I think is the one that is most important for this committee, is this all depends on public confidence. It's tempting to say we've done this before in the defense business, trust but verify. And the more removed from paper, the more removed from tangibility the system gets, the harder it is to offer that assurance in the usual direct fashion.

We're used to saying you could look it up, you can have your Freedom of Information Act request. That doesn't work with electronic data because it is too remote. It is too inaccessible to the lay mind. And when you get into things like codes and formats, you could give those to me. You could give those to you. We wouldn't know what we were looking at. So that direct means of assurance won't work.

There needs to be indirect means of assurance to the public that this system is working, that this is more enforceable and more accurate and more open rather than less. And that's what I want to offer, a few suggestions. My testimony has more, some of the devices that the subcommittee might consider to offer that kind of indirect, but very powerful assurance to the public that this is not a fast shuffle.

One is simply nonrepudiation. In other words, if you are filing electronically, what comes out at the Government end is something you're stuck with, no excuses. That may sound a little harsh when you think of what the possible mistakes might be or the pigeon that might fly through the radio wave and any of the other many ways things can be scrambled, but as the next witness will explain in more technical detail, these are very, very easy to double-check.

Computers are very good at double-checking the accuracy of what gets passed through. In addition, there may well be this equivalent of an electronic notary business that I described earlier to take on that responsibility itself, almost the equivalent of title insurance for this process. Why? Because it's so much cheaper than this can be afforded. What good does this do the public?

Your data are really nonrepudiatable? It means that nobody is going to mess around with this system. Only people who use it. The only people who use it will be those who are really confident that what's going in is accurately coming out if you are legally responsible for it. A simple mechanism, but one that would have profound effect on public confidence. That's in public confidence in the transmission in the system and what goes on with all those electrons.

The second, which I think is even more important—and my testimony has more. I'm skipping over here—is public availability. The data that is submitted electronically, leaving aside confidential business information, the data that is submitted electronically should be immediately available to the public. For example, posting on the Internet or some other very easily accessible, electronically accessible form to the public.

As the previous witness, I think Mr. Kelly, said, it's a poorly kept secret that paper is hard to find and I can assure you from the point of a public interest group that tries to find it, it's very hard. This has the potential to be much easier.

How do you ensure that that potential is realized? There are several technical points itemized in my written testimony, but the simplest and most powerful would be simply requiring that the data is not officially received by the agency until it's also posted publicly, for example, on the Internet.

Once again, that guarantees that that step will be taken, that that step will be effective because the reported company will have to take on itself the burden if that—if that piece of the job isn't done, they haven't met their legal reporting requirement. Again, electronically this is trivial. The cost and effort of doing this is trivial, but it is an extremely useful check on the accuracy of the system. It is the sort of things that would give the public a great deal of confidence even if the public had no idea how this data is encrypted or deencrypted or electronically sign or counterchecked, even if all of that remains the mystery that it is going to be for most people.

Very briefly on my third point, going back to something the chairman asked an earlier witness about the Tower of Babel, the different forms, the different requirements, putting data in electronic form, Dr. Hanna mentioned this, has the lubricating effect on looking at inconsistencies, on looking at do we really need this, do we really need that?

Once you're talking in a consistent data dictionary form, once the electronic information can be sorted without losing it, making sure that what is letter A over here is the letter A over there. And I urge you not to underestimate the power of that lubricating force.

I also urge the subcommittee to determine from all the various affected agencies whether there are legal obstacles now to putting in a voluntary electronic reporting scheme because to the extent we've been able to check, there are very few. This is something where underlying statutes do not need to be changed in order for this essential early step to be taken and we urge you to consider pushing this ahead on the time schedule as fast as possible because the returns from this exercise are going to help us find out what other and perhaps more profound reforms will be possible in the underlying substantive statutes.

To that end, I would hope you would be able to take as much advantage as possible of both the efforts in California and the other States—there are several other States doing this—instead of reinventing the wheel so that we can get to this at an early stage and I'd urge your advisory committee and petition process to give whatever boost it can to applicants who bring with them that kind of experience.

If an electronic data reporting system that has effective public access of the kind you find in my testimony can be drafted, this subcommittee and this Congress will have our full support in getting that through.

[The prepared statement of Mr. Roe follows:]

PREPARED STATEMENT OF DAVID ROE, SENIOR ATTORNEY, ENVIRONMENTAL DEFENSE FUND

Mr. Chairman and members of the subcommittee:

Thank you for inviting me to testify here today. My name is David Roe and I am a Senior Attorney for the Environmental Defense Fund, located in EDF's West Coast office in Oakland, California. EDF has a long-standing interest and expertise

in computer-based information management and its implications for environmental protection. (See "Background and Experience of EDF" below.) I have been with EDF since 1976.

Part 2 of California's AB 3537, enacted in September 1994, makes provision for electronic reporting of environmental data, including a standardized electronic format and protocol for the exchange of electronic data between regulated businesses and state regulatory agencies. Pursuant to that state stature, a pilot program is planned in two California counties, and a data management advisory committee (DMAC) has been established to advise the head of the California Environmental Protection Agency as well as to supervise and report on the pilot program. The Environmental Defense Fund is the only environmental or public interest group represented on the DMAC. In addition, on Governor Pete Wilson's so-called Blue Ribbon Commission on a Unified Environmental Statute, I co-chair the Information Subcommittee, which deals with similar issues in a larger context.

Summary of Testimony. In brief, EDF's stale-level experience in this area leads us to make three basic points:

- The use of electronic data and computer-based information management and information analysis has high potential for simultaneously reducing regulatory costs and burdens, improving environmental protection and increasing public confidence in the fairness and effectiveness of Environmental laws.
- The degree to which these benefits can be realized depends, crucially, on public confidence that electronic data and computer-based data management systems will not be abused and will allow more, rather than less, public access to information and public oversight of the regulatory process.
- An important part of the potential benefits can be realized without any change in the underlying environmental statutes. Coordinated statutory improvements that are fully sensitive to the foregoing issues could further expand the scope of potential benefits.

Taken together, these points suggest that important benefits for all sides are readily obtainable through modern technology, and that the degree of benefit is closely related to the degree of public confidence in how that technology is being applied. As key technical details become less and less comprehensible to an ordinary member of the public, it becomes more and more important to secure public confidence through clear ground rules and through effectively self-regulating mechanisms in the design, structure and implementation of electronic information systems.

This testimony includes examples of such mechanisms. Even a preliminary step, like the one before you today, cannot be separated from this larger context. EDF believes that inadequate attention to such factors at this stage could make it impossible to realize most of the benefit that is potentially available.

The testimony below discusses the potential benefits for all parties of electronic data reporting, the necessary conditions for realizing those benefits and the relationship of potential benefits to changes in the underlying statutes. It then offers comments on some points raised by the preliminary draft provided by staff.[1] Finally, it provides further information on EDF's background and experience with issues of data disclosure and with computer-based technology in the context of environmental protection.

1. POTENTIAL BENEFITS.

Based on EDF's experience with environmental protection issues over the last two decades, and on our recent experience in California with that state's efforts to streamline environmental regulation through electronic systems (both described below), we believe that the potential benefits enumerated in the draft findings are, if anything, understated.

At the simplest level, there are obvious potential cost savings for relatively sophisticated businesses that now handle internal data electronically, and that would like to handle their reporting obligations to every level of government in the same manner. This is the constituency that has been the driving force with California's AB 3537, with the Organization of Business and Industrial Entities (OBIE), and with the draft bill[2] before you today.

For smaller and less sophisticated businesses, the potential benefits are less immediate but may be even greater. Smaller businesses often feel that regulatory re-

[1] Incomplete and preliminary statutory language, based on California's AB 3537, was provided late last week by staff. EDF recognizes that the drafting process is at a preliminary stage and for that reason does not address detailed drafting issues here.

[2] See note 1.

quirements (including environmental requirements) are daunting in their sheer volume and complexity, whether or not actual, physical compliance will cause any significant cost or inconvenience. Being able to report to government (ideally, all levels of government) on a single, computer-based form could save not just money but also peace of mind.

Equally important to smaller businesses, simple computer-based information systems could make it much easier for a small business to find out what its regulatory obligations are, and to whom. The smaller the company, the larger the proportional savings in comparison to the present system, at least in a state like California where multiple jurisdictions are commonly involved in environmental and other forms of regulation. "We can't even find out what the requirements are, or which agencies we have to report to, unless we pay some lawyer $50,000," was a complaint that Gov. Wilson's Blue Ribbon Commission heard repeatedly from small-business representatives. Readier access to more reliable information on compliance requirements would also increase fairness and decrease the information advantage that larger business is currently perceived to have.

To this end, EDF has proposed that compliance-related communications from state government agencies should be considered binding, when and only when they have been made public through a computer-based, low-cost service such as the Internet, in readily accessible (e.g., searchable) form. Among other benefits, this would substantially reduce the problem of private opinion letters, informal assurances from agency officials, and other forms of "underground" regulation that is now perceived to favor companies with large legal and lobbying resources.

Of course, the potential benefits to smaller businesses would be available only to the extent that those businesses have access to sufficient computer equipment and expertise, a point discussed further below.

Most important of all, from the point of view of the public interest in environmental protection, reduced cost and increased access to compliance information have the potential to increase the extent of compliance within individual entities, and to expand the number of entities that are willing and able to address their compliance obligations in good faith. Reducing artificial obstacles to compliance, in the form of paperwork and information search burdens, is unquestionably in the public interest.

In addition, information itself has proven to be a powerful tool for stimulating environmental improvements and reducing risks, even in contexts outside the normal regulatory process of setting and enforcing mandatory standards. (See "Background and Experience of EDF" below.) The more certain the public can be that timely, meaningful, and accurate data are available, and genuinely retrievable, the likelier it is that reforms aimed at efficiency and flexibility in the environmental regulatory system will be found acceptable. If reporting entities are in a goldfish bowl, from the standpoint of environmental data, they are more likely to be trusted with responsibilities like those contemplated under U.S. EPA's XL Project, EPA's Common Sense Initiative, and other similar reform proposals currently being discussed. Electronic information and public access have the potential to act as a lubricant for changes that can both improve environmental performance and reduce regulatory burdens.

Whether or not such potential benefits to the environment are actually realized will, of course, depend on numerous factors, some of which are discussed in the following section.

2. NECESSARY CONDITIONS.

Computers are mystifying to many, even to those who use them every day. Their inner workings, the languages and protocols that are the focus of this bill, mystify many more—indeed, nearly everyone except the expert technicians who write them. Thus, as a practical matter, it is impossible to convince people that these inner workings are being "done right" through direct evidence. Publishing the codes, or holding hearings on them, or even putting public representatives on advisory committees, cannot be assumed to accomplish that goal.

At the same time, it is critical that there be high public confidence in any transition from the tangibility and comprehensibility of paper to the intangibility and mystery of electrons. Without understanding the technical details, people must be able to know that electronic data transactions are as reliable, as accountable, as enforceable and as likely to subject wrongdoers to legal penalties as the system being supplemented or replaced. It is probably necessary that they be more so, if the public is to have the same level of confidence in the effectiveness of environmental controls as in the past.

Fortunately, such improvements are technically achievable. Unfortunately, traditional government safeguards and other traditional methods of securing public con-

fidence in regulatory machinery will not be adequate in this context. The focus must be on sufficient indirect evidence that the new system is working, rather than on telling people, "You could look it up."

Some elements that would go far toward offering assurance in this context are set out below. EDF offers these in a spirit of exploration, based on our experience to date. We can not assure this Subcommittee that these are a complete or sufficient set. What will be adequate will depend on the details and the implications of exactly what is proposed. EDF does believe that these elements are necessary, and that they point in the most promising direction.

A. Non-repudiation. Any entity that uses electronic reporting to satisfy legal requirements should be legally responsible for the contents of the report as received by the government agency or other intended recipient. In other words, errors in electronic transmission, encryption, deencryption, reception and the like cannot be used to avoid enforcement or other legal consequences. This rule[3] insures that users will self-police against such errors using their technical expertise, and will institute whatever double-checking devices are appropriate, because to do so will be in their self-interest. In turn, to the public, such a rule offers strong assurance that accidental mistakes in the process of moving data electronically will be rare. The experts will guarantee it, even if the public does not know what techniques will be used.

B. Authentication. Electronic signatures should be required, from identified individuals rather than corporate entities, under the same penalty of perjury for the individual signer as with a hand-written signature. As above, only individuals who are confident in the technology will use it, because the legal risk falls on them. The public will have the comparable assurance that reports will not be casually or evasively "signed" in electronic form. (There are technical issues involved in specifying an adequate electronic signature, which DMAC is addressing.)

C. Availability. All electronically submitted reports should be made available electronically to the public through a computer-based, low-cost service such as the Internet, simultaneously or nearly simultaneously with their receipt by the receiving agency, in the same form and with the same accessibility (structured format, etc.) as received by the agency. The cost of doing so is trivial with electronic reports (although it might be prohibitive in paper form). This step represents a major potential increase in public access to reported information, at least for individuals and groups equipped to obtain it (e.g., every Internet user), and hence an increase in potential public oversight of the regulatory process. Both reporting entities and government agencies might feel an incentive to improve their performance in response.

This value of this step can be insured only through several technical safeguards:

1. Exclusive use of non-proprietary languages, formats, translators, etc. (except for encryption/de-encryption processes, which can be proprietary as long as step A. above is observed);
2. Highly structured formats to allow maximum accessibility to data (technical details are important to avoid sham accessibility);
3. Non-proprietary, inexpensive (or free) software to allow effective data searching;
4. Procedures to protect confidential business information without allowing unilateral or excessive designation of CBI by the reporting entity to delay electronic disclosure; and
5. An easily findable site on the Internet, either one maintained by the government agency itself, or one to which the government agency publishes a clear guide so that search time is eliminated.

D. Availability as a condition of reporting compliance. The easiest and most certain way to accomplish the foregoing step is to put the burden on the reporting entity, by providing that electronically submitted reports will not be deemed to have been officially received unless and until they have also been made available to the public as described above. Again, the cost and time required to carry out this task is trivial in the electronic context, and there is therefore no reason not to impose it on users. This approach would provide even more certain oversight opportunity to the public, and strong assurance to the public that electronic reporters have nothing to hide. Thus, electronic users may be seen by the public as more likely to be complying with environmental and other requirements, rather than less. It can be imposed as a condition of using the electronic option. even if not required by the underlying statute.[4]

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[3] This requirement can be imposed even in regulatory regimes where the same requirement is not imposed on those who report on paper. Rather than a strict requirement on all reporting entities, it is merely a condition of exercising the electronic option. Those who prefer not to be legally bound in the same way can simply reject the option and continue to use paper.

[4] See note 3 above.

E. Voluntary participation. Electronic reporting must be voluntary rather than mandatory. See discussion of resource availability, immediately below.

F. Access to computer equipment and expertise. For smaller businesses wanting to use electronic data reporting, and also for members of the public wanting to access the reports when filed, there is an important issue of equipment and expertise. Inevitably, some in both groups will not have the necessary equipment. EDF's experience with small business representatives on the Unified Environmental Statute Commission in California suggests that electronic data reporting can be made available even to those with quite inexpensive and outdated equipment, and that native language (i.e., non-English-speaking computer users) may be more of a barrier to participation than equipment. However, the needs of small business deserve special attention, and their own representation in any advisory committee process.

In addition, it is likely that if a system of electronic data reporting were sufficiently cost-effective, it would attract service entities, much like accountants, that could provide smaller businesses with electronic data reporting services for a fee. The business would then not need the necessary equipment and expertise itself. This possibility needs to be kept in mind as a system is designed, so that such services are not inadvertently discouraged. An insurance, or guaranty, feature would make such services particularly marketable, and this should be facilitated.

3. Relationship to Statutes.

One of the primary insights developed on Governor Wilson's commission to investigate improvements in environmental statutes, by EDF among others,[5] was that information technology offers the promise of substantial benefits to businesses, government, and environmental protection, as discussed in section 1. above, and that such benefits can be obtained in large part even if the underlying statutes remain in present form. Better information transfer and information access have important and tangible value, whether or not the statutory scheme of which they are a part is rationalized or adjusted to make full use of their potential. To put it most simply: reporting data and finding data electronically saves time and money, whether the requirements of what to report are ideally designed or not.

This, in turn, suggests that such efforts can and should be undertaken independently of statutory reform. In fact, a good portion of the necessary work can be undertaken at the administrative level, using existing authority. EDF urges the Subcommittee to determine what, if any, statutory obstacles currently exist that would prevent OMB, EPA, USDA, DOE, DOI, OSHA, FDA, and other relevant agencies from proceeding in the intended direction in the absence of authorizing legislation.

In EDF's view, it is appropriate to proceed with properly designed electronic innovations now, on an accelerated timetable, and to use the experience with those innovations in practice to gauge the potential for broader improvements of the kind discussed in section 1. above.

Specific Comments on Draft Legislation[6]

EDF offers the following preliminary comments on specific points:

A. Findings. These should be expanded to include expressly the elements of public confidence, increased public access to data, and increased availability of public oversight of the regulatory process, discussed above.

B. Advisory Committee (Section 6). The structure of the Advisory Committee should be revised to insure adequate participation both by (i) representatives of the affected public and (ii) technical experts from government at the non-federal (i.e., state and local) level.

(i) Affected Public. Adequate representation of the public interest, e.g., by representatives of non-governmental groups, is critical to the integrity of the process and to public confidence in its results. It is also the most difficult to secure, since it requires not only appropriate individuals but also resource support. EDF believes that the investment of resources and time required to create confidence on the part of such representatives, and hence in the public that relies on them, will be well worthwhile.

(ii) State/Local Representation. At least a handful of states have valuable experience to contribute; some localities may as well. EDF's most extensive experience at the state level is with California, although it is aware that Massachusetts and Illinois, among others, are active in the same field. The state/local government perspec-

[5] No final report has been issued to date, either by the Commission or by its Information Subcommittee. Hence, this testimony should not be interpreted as speaking for the Commission or for that subcommittee. See "Background and Experience of EDF" at the end of this testimony.

[6] See note 1 above.

tive is essential if the interests of the regulated community and of the public are to be met. An electronic data system that works only at the federal level, and is not coordinated as much as possible with state and local systems, will frustrate users and reduce benefits. Equally from the point of view of the public, public access and its benefits would be similarly compromised by access limited to federal data only.

C. Petition Process. In its current draft form, the petition process appears to favor a narrow class of favored entities, two of whom are identified by name, to the exclusion of others. This "inside track" appearance is strengthened by the virtually absolute time priority granted to the earliest non-federal entity petitioner and the ability of that petition to displace all "similar" petitions that may be filed later. This needs to be corrected to give more opportunity to non-favored parties, and more discretion to OMB to optimize its efforts.

D. Data dictionary. EDF strongly supports the creation and maintenance of a data dictionary for all data elements or data fields required to be collected under any federal law or regulation, so that the electronic form in which such data are collected will be consistent. Not only should such a dictionary be published electronically, but in addition, provision should be made for assisting states and interested localities in making effective use of the dictionary, as well as other elements of a federally-approved electronic data transmission system.

E. Non-proprietary standardized format. In addition to the criteria of Section 71065 of California's AB 3537, the requirement that any electronic format be non-proprietary, before it can be approved for reporting to the federal government, is essential. The DMAC has made this a cornerstone of its considerations.

Background and Experience of the Environmental Defense Fund

For nearly twenty years, EDF has been making intensive use of computer-based analysis and computerized data management, first in the field of electric utility finance and thereafter in other environmental contexts. EDF's west coast office currently employs four full-time computer experts to work on appropriate environmental projects in the energy, water resource, toxic chemical, and transportation fields.

EDF was invited to join the Data Management Advisory Committee, set up under California's AB 3537 and is currently represented on that Committee by Dr. Anita Wolff. David Roe has also participated in DMAC proceedings.

David Roe was appointed by Governor Pete Wilson to the Governor's Commission on a Unified Environmental Statute (so-called "Blue Ribbon Commission") at its inception in May 1994. He was the only representative of an environmental group among the original appointees (although, in response to his request, additional environmental representatives were subsequently added). As a member of the Commission he urged the creation of an Information Subcommittee to explore the implications of modern information technology for reducing regulatory burdens, improving government performance, and increasing protection of the environment. He then served as co-chair of that Information Subcommittee. (The information Subcommittee completed a draft report, but the Lull Commission has yet to issue a final report. This testimony therefore reflects EDF's reviews alone and should not be interpreted as reporting prematurely the views of the Subcommittee or the full Commission.)

EDF has substantial experience with the Toxics Release Inventory, established under Title III of SARA in 1986, and very intensive and extensive experience with California's Safe Drinking Water and Toxic Enforcement Act (commonly known as Proposition 65), enacted by direct voter initiative in the same year. Both of these laws rely importantly on data disclosure of certain facts regarding toxic chemicals, and both have been notably successful in reducing the amounts of toxic chemicals released by affected businesses.[7] Proposition 65 has been particularly successful in stimulating the removal of numerous types of toxic chemical exposures from consumer products, not just in California but nationwide, as a marketplace reaction to disclosure requirements.[8] The success of both TRI and Proposition 65 in stimulating large-scale reductions in the size of relevant environmental health problems is especially noteworthy, because neither law in any way forbids the acts in question; both laws simply require disclosure (in different forms) to the public of relevant in-

[7] See, e.g., Pease, W., "Chemical hazards and the public's right to know: flow effective is California's Proposition 65?" Environment 33(10): 12-20 (1991) [comparing release data on TRI chemicals and Proposition 65-listed chemicals].

[8] See, e.g., Smith, R., "California Spurs Reformulated Products," Wall St. Journal, November 1, 1990, p. B1. See also U.S. Senate, Committee on Governmental Affairs, Ad Hoc Subcommittee on Consumer and Environmental Affairs, record of hearing on "Lead in Ceramic Ware and Crystal: An Avoidable Risk," March 27, 1992.

formation. Thus, both laws stand as convincing demonstrations that information by itself can be a powerful tool for environmental improvement, when the information is provided in an appropriate context and when the disclosure requirement itself is strictly enforceable. This is a tool that federal environmental policy has not yet systematically explored, despite the successes to date.

Mr. HORN. We thank you very much for your testimony on that point. We now call on the third witness on this panel, Mr. Richard A. Ferguson, board member, executive director of Environment and Safety Data Exchange, ESDX Mr. Ferguson.

Mr. FERGUSON. Thank you, Mr. Chairman and members of the subcommittee. Thank you very much for an invitation to talk about this. I live and work in Palo Alto, CA, as an engineer and an attorney. This intersection between the technology and the law and the policy I find absolutely fascinating.

I'm passionate about this technology that is a kind of California style for business these days. I also serve as executive director of ESDX on a totally volunteer basis. Phone calls and fax expenses get reimbursed from time to time. But ESDX is a 5-year-old, all-volunteer, not-for-profit association. It's an association of the people in user and maker companies, the people who put environmental data on computers and software applications.

Since 1990, more than 150 companies and three different State agencies have joined ESDX and participated in our activities which primarily consist of three technical meetings a year and conversations on topics that matter to environmental data jockeys across industry lines. We're celebrating our fifth anniversary right here in Washington, DC this week and we have some 100 speakers with various kinds of expertise in this field Wednesday, Thursday, Friday, and if any of you or the staff would like to attend, just please let me know. We would like to welcome you to the meeting.

Before I launch into some comments here, I would like to distinguish between two bodies of data that are kind of smeared over in the conversations earlier today and it's important they get treated differently. One body of data which we might call ambient data are the data that tell us, taken as whole, how is the globe doing, how is an ambient air basin doing, how is a water course doing.

There are fascinating, very scientific data sets out there. There are technologies that support that. It is fascinating stuff. It has its own standards community driven predominantly by the academic world. It deserves to be built in part of the role of every environmental regulatory agency and we all support that and deal with that.

On the company side, and that really is the main focus of my comments, on the side of companies who have to comply with the law, we're talking about data on specific materials and specific controls to be exercised by individual people, the notion of micro decisions that are supposed to be taken for environmental improvement. Most ESDX member companies have been putting data on their computers years ago. They want to use those electronic information systems to make those control decisions at the micro level much more effectively.

Let me just state the vision here. If a manager in a company has environmental hazard criteria or the requirements of law and regulation in an electronic form, she can automatically link those standards of performance on a decision-by-decision basis to the product

designer, if it is in a design stage, or the materials purchasing agent, at the time when a particularly hazardous or costly to-dispose-of material first enters the plant.

Today, that same process happens, but it happens with an enormous paper shuffle. We have job positions called environmental coordinators, and the environmental coordinators are people who scurry around getting a piece of paper from file cabinet A and the Code of Federal Regulations over here. The vision of this technology in the business of plant environmental management is to eliminate this paper shuffle.

Tom Kelly and someone from EPA mentioned earlier just in this session that the burden hour requirement level at the Federal level is at least 20 million hours. Our numbers are that there's at least $1 billion and probably over $2 billion of paper shuffling going on here to do the good things required in environmental statutes and that's really the focus of this assignment and the opportunity for the technology.

We've encountered some problems as we try to put this technology to work. At first you'd think information technology is fantastic and all is well. The Wall Street Journal reported just a couple weeks ago that all of American manufacturers plan to spend 1 percent of sales—that is a big number—on information technology in the coming year, so they think there's something productive about it.

In contrast, only about 15 percent of regulated companies use computers or software data bases for their environmental management problems. What is it about environmental programs that seems so impervious for the use of this information technology? And I think the answer is that these are programs where the Government has a very large role.

It's not possible for a corporate manager to make quick decisions, to make productivity decisions because the Government agencies, plural, are part of that process. So as much as corporate America has been using the advent of information technology to re-engineer the work flow, the motion of data from department to department inside the corporate boundaries, companies don't have really the freedom or they don't perceive that they have the freedom to re-engineer the work flow and the data flow when some of those flows are going back and forth to Government agencies, particularly multiple agencies.

It's easier to just say let's stay away from that. Give them what they want. They want paper, let's give them paper. We'll optimize, we'll control costs, improve performance on other dimensions. So we're losing the opportunity to capture the vision that David Roe just spoke about and I tried to introduce here to use the same productivity tools to make micro environmentally sound decisions. That's what we're after.

Without legislation—and I think this is a lesson we've learned pursuing this for the past 5 years as an industry group—without legislation, it's hard to bring these agencies into the electronic fold. A couple of reasons.

First, agencies consist of human beings and the human beings that work in the program offices of agencies tend to be risk-averse

people. They're—they've learned it's a little dangerous to step out in front and I understand that.

Second, for those agencies that have stepped up to this and tried electronic reporting, and Tom Kelly listed some of the Federal EPA projects, there have been State projects, these projects have been done as a practical matter virtually in isolation from each other. So we have as a result certainly thousands of incompatible paper forms around the country and the nightmares, my nightmare scenario is that we are going to have 1,000 incompatible electronic formats at the end of the day. That's our fear and let me just give some examples.

EPA under SARA Title III legislation created an electronic data base in electronic form, electronic data collection instrument, for the Toxic Release Inventory Program. It's a good package, it's a good program. It saves the agency a lot of data retyping money. But that format is incompatible with everything used in environmental software.

In waste minimization programs, the State of Texas got tired of waiting for clues or signals on formats and the woman in the program office there just invented her own. Once again, it does her job, but it's incompatible with everything else. Many of the discharge monitoring reports, water pollution programs around the country are mutually incompatible. The forms look similar, the data have very different meanings.

This summer, a Federal agency staffer toured the country offering underground tank storage software which has an implicit data format in it which bears no relationship to any of the formats in use by people managing underground storage data. And the same thing is true for all the lab samples, millions of lab samples taken just at Federal facilities alone, Federal cleanup projects. Once again, there's no common electronic format. There's not even a common scientific data model underlying those different measurements.

All of these things are good efforts to use information technology. It's 50 percent of the way toward the right goal. The problem is that we're watching this uncontrolled, unchecked construction of a Tower of Babel in the electronic work. That's the nightmare scenario. And many of us have tried, as people of good will, to pull those things together on a voluntary and consensus basis and in California we just concluded that a little bit of legislation goes a long way to pulling these disparity efforts together, particularly when people are trying to do the right thing.

Just to summarize, the kind of legislation, the high points of legislation that we propose at the Federal level and I think these are applicable points for any kind of electronic reporting legislation, are that it's very clear, it's abundantly clear in law that it's OK to send electronic data and rely upon it for all purposes under the law. It has got to say that in black and white in the statute or you will get risk-averse people in agencies saying let's go slow, let's study it for another 3 years. The law has to make that clear.

Second, the law really has to say no to proliferation of formats. It's not quite centralization. I think we can do this without creating another Soviet-style data bureaucracy, but the law has to say no to proliferation and provide a mechanism to enforce that. And the

third thing is that the law has to give the ball back to the data submitters. Federal EPA has statutory authority to write and enforce environmental standards.

Federal EPA does not have statutory authority to write information technology standards. It's the wrong agency to be leading that charge. There are a bunch of companies that do that, companies that have formed associations. The Internet that's in the news so much lately, has a set of standards that work just fine and they're done on the Internet with open comment by all participants. It's a wonderful model for standard setting in this new kind of electronic age.

When we tried this in California law, we took these principles, we sold to it the different interest groups in California and made sausage in the legislature, as the saying goes, and we're happy with the result. It was a law generated by an industry, CalEPA regulatory streamlining group led by Hewlett Packard and some of the electronics companies.

Electronic reporting was just 1 of about 5 or 10 bullet items with the kind of streamlining industry wanted to see in the State of California. All of the streamlining had nothing to do with overall environmental protection. No one was changing ultimate standards for protection, it was just streamlining, eliminating frustration on the part of people that were trying to do the right thing.

While the legislation won bipartisan support in 1994, introduced by the greenest of the green Democratic assemblymen, signed by our own Governor Wilson, the legislation avoided appropriation and procurement issues by putting the technical burden of standard development on the shoulders of the people who were reporting who ought to stand to benefit by going electronic. So we avoided all the usual delays in agencies from dealing with budgeting and procurement.

California law operates on a very simple filtering mechanism. If nobody perceives a benefit, nobody volunteers to help with the standards, nothing happens, nobody is force-feeding the technology on anybody. California ensures fair play through the operation of the Data Management Advisory Committee, which we described earlier and, of course, the California EPA Secretary has ultimate legal and political authority and responsibility for adopting or not adopting standards developed.

I serve as the elected chairman of the industry group in California that's doing this standards development work and it has been a fun process. I never expected to get so many smart people from other companies and from our local governments to help out on this task and I think they volunteered this time and effort because the legislation gives us a believable hope that we'll end up with legally binding improvements in the system. So I think it was important to have a little bit of legislative language.

Now, if we were wildly successful in California and we electrified all our environmental forms come next June when we're obligated to report to our EPA Secretary, we have at least one lingering problem and that is that we can't electrify the Federal forms. We don't have authority under the California law to do that. And as EPA indicated earlier today, they spent 5 years on various electronic forms and a couple years on the hazardous waste multi-State

advisory commission product and there ain't nothing there. They tried hard. They had smart people working on it, but there's nothing there.

We think, we submit, that a little bit of legislation goes a long way in changing the rules of the game, changing the way this particular set of standards gets developed. And I think by changing the rules of that game, along the lines of the California approach will make a lot more people happier and will speed the advent of this information technology and all of the benefits that all the witnesses before you today, I think, agreed are out there.

We have opportunities here, certainly in environmental protection, but more largely to improve the working relationships that we decide are necessary between Government and nongovernment entities. One way to improve working relationships is to improve the data flow, is to define the jobs we're doing better, to define the data flows back and forth better and to speed those. That's what this technology offers. It's a good thing. It's not always a painless thing to institute on the industry side, but it has been a good thing for us in California and we commend it to this committee as this committee thinks about tackling electronic reporting opportunities and problems at the Federal level. Thank you for your time and consideration.

[The prepared statement of Mr. Ferguson follows:]

PREPARED STATEMENT OF RICHARD A. FERGUSON, BOARD MEMBER AND EXECUTIVE DIRECTOR, ENVIRONMENT & SAFETY DATA EXCHANGE (ESDX)

Mr. Chairman and members of the subcommittee:

Thank you very much for your invitation to testify at today's hearing. My name is Richard Ferguson, and I live and work in Palo Alto, California as an engineer and an attorney specializing in compliance information systems. I serve on a volunteer basis as Executive Director of the Environment & Safety Data Exchange, ESDX.

ESDX is a five-year-old, all-volunteer, not-for-profit association of users and makers of computer hardware and software for managing environmental and hazardous materials data, in both industry and government. More than 150 companies and even a few state environmental agencies have joined ESDX since its founding in October 1990. ESDX meets three times each year for educational sessions, and to discuss industry-wide technical and business matters of collective interest. We are celebrating our fifth anniversary this week with a conference right here in Washington DC, with more than 100 speakers on topics in this field.

Most ESDX member companies began years ago to put environmental data on computers. They now use these electronic information systems for more cost effective management of environmental affairs.

For example, when a company manager has environmental hazard criteria or standards in electronic form, she can automatically link them to the product designer, or to the materials purchasing agent, who is first specifying a raw material to be brought into the plant. In contrast, if all of this information is on paper in file drawers and books on the shelf, then three or four different people must "coordinate" and scurry about, shuffling and comparing papers to ensure that they are making an environmentally sound material specification and purchase.

As another example, when a CEO needs to answer a community group charge that her facility stockpiles too many hazardous materials, it is easier to run a quick computer hazmat inventory check and answer the charge, on the day of the charge. The alternative is to shuffle through paper purchasing records and copies of the Code of Federal Regulations to determine which agencies regulate which materials in what quantities, and then tote up the quantity at the facility.

Our ESDX members want to do more of this computer-assisted, day-to-day, environmental protection and compliance assurance work—because it lets good environmental managers cut costs and improve performance.

But we have encountered problems in our efforts to work on a national, industry-wide basis to replace environmental paper shuffling with computer-assisted environ-

mental decision making. At first, one might think all is well with information technology. For example, the Wall Street Journal reported last month that American business was increasing its spending for information technology to more than 1% of sales—a powerful vote of confidence in the technology's ability to cut costs and improve performance. Nearly 100% of American businesses—large and small alike—use computers in their core business functions, such as accounting and shipping and manufacturing control.

A big symptom of the problem here is that only about 15% of regulated businesses use computers and software to manage or reduce the paperwork and paper-based data in their environmental health and safety programs.

Why are these regulatory programs so impervious to the application of recognized, productive information technology?

We think the answer is that these are business activities where government plays an unusually large role. And when it comes to the adoption of new information technology, as President Reagan used to say, government shouldn't be the answer. Government IS part of the problem.

Unlike automating—or reengineering—transfers of data from one department to another within the same company, reengineering environmental management requires automating data that flow back and forth between company departments and government agency offices.

Without legislation, it has been difficult to bring agencies into the electronic fold.

First, agency staffers tend to be risk-averse people, not risk-takers—yet we are talking about adoption of a "new technology" here. So in the absence of a clear legislative signal, the average staffer will say "no" to any proposal to change the way his agency does business. Or if he has a budget, he will say "Let's study it for a while longer." In the computer industry, entire product life cycles last only 6-12 months. So there is a mismatch with technology cycles, when Federal agency officials take five years to review, get comfortable, and finally approve electronic reporting or digital signature pilot projects.

Second, across all levels of government, some agencies have indeed taken some risks, and tried to convert their data reporting activities to electronic form. But for reasons of budget, statute, and damage control, they have done so in virtual isolation from each other. So today we have thousands of incompatible paper forms at all levels of government—and scores of incompatible electronic data formats and incompatible agency-generated software programs proliferating all over government.

Some examples:

- The EPA's TRI reporting software file-format saves the Agency a lot of data entry cost, but it is compatible with nothing else in the known universe.
- The State of Texas got tired of waiting for someone else to lead, and developed its own waste-minimization reporting database format, which of course is now incompatible with anything used by other agencies or software companies around the nation.
- Many of the various State implementations of water pollution reporting data are mutually incompatible.
- A Federal EPA staffer somehow got budget authorization this summer to travel the nation, offering a Federally-developed software package for underground tank reporting and data storage for use by local governments—without having any idea what electronic data formats reporting companies already use.
- The millions of lab samples of contamination in soils and ground water taken around the nation do not share even an underlying data model, much less a common electronic format.

So up until today, we have been watching a kind of electronic Tower of Babel under construction, as each program office develops its own electronic language.

Third, when a regulatory agency office initiates a program to collect data in electronic form, the program staffer tends to do it on his or her own terms: the project is conceived within the limits of his program authority, based on the computer data practices entrenched in his program, and crafted by whatever contractor or consultant is available to him at the time the project gets a budget go-ahead signal. These become the project control criteria for agency-initiated pilots, yet they have little to do with the circumstances in the reporting community. The general rule is that agency-initiated pilot projects have little linkage to benefits or savings among the non-Federal reporting companies.

Mr. Chairman, we think a little bit of legislation goes a long way toward solving these problems.

To summarize, we would like to see Federal legislation that:

1. Says OK to electronic data—and declares the use of nonproprietary electronic data formats to be an acceptable, optional, legally binding alternative to paper reports and applications

2. Just says NO to proliferation—of incompatible data formats by multiple agencies of government in an unchecked exercise of their other statutory authorities. We want agencies to be happy users of industry-driven information technology, not agency proprietors of miscellaneous agency-developed software and standards.

3. Gives the ball back to the data submitters—and reallocates to non-Federal organizations the right and power to initiate and develop the electronic formats most beneficial for reporting data to Federal agencies, rather than leaving the agencies to preempt private initiative and occupy the field.

We have just such legislation in place now in California. And I am pleased to bring this good-news story from California to the Committee today.

In 1993, barely three years ago, California businesses sought legislative help to "streamline" a variety of uncoordinated and expensive environmental agency practices within the State, that brought lots of frustration but no environmental benefit whatsoever. A unique public-private partnership was born between the American Electronics Association's California environmental committee, and the California EPA.

This AEA-CalEPA streamlining group developed a list of goals, objectives, and assigned responsibilities for streamlining regulations in the State. Led by Hewlett Packard, the industry group identified "electronic reporting" as one of the proposed streamlining tools. The California members of ESDX, including H-P, IBM, hazardous waste recycler Romic Environmental, Hughes, and high-tech materials producer Raychem Corporation, worked together with AEA, the Santa Clara County Manufacturing Group, and CalEPA to pass this legislation, Assembly Bill 3537.

The bill won bipartisan support in 1994. It avoided appropriations and procurement liabilities, by putting the entire cost of electronic data standards development on the shoulders of the industry group already organized to capture the benefits of electronic data exchange. The California law uses a simple filtering mechanism: If there are no benefits to the reporting industry, then no one volunteers to help do the work—it is as simple as that.

California ensures that our industry-led data-standards work does not impair the public policy goals of the agencies, or confer any proprietary advantage on a given company. The California law established a Data Management Advisory Committee of data specialists from environmental groups, local government, and industry. The DMAC reviews the technical work by industry, and if it is acceptable, recommends the work to the CalEPA Secretary. If the Secretary adopts the work, the standards become a legally binding alternative to paper in our two pilot jurisdictions, San Mateo and Santa Clara Counties (otherwise known as "Silicon Valley").

In California, I also serve as the elected chairman of "OBIE"—that is, the Organization of Business and Industrial Entities for Electronic Reporting to Government. OBIE was formed in November 1994, one month after Governor Wilson signed our California legislation authorizing electronic reporting of environmental data to state and local governments. OBIE has 17 member companies and six partner California agencies at the state and local level.

OBIE organized itself into thirteen task groups, focusing on such specific work products as (1) a priority list of paper forms to electrify, (2) a uniform list of data elements, (3) an adaptation of existing nonproprietary data formats already in use elsewhere in industry, and (4) proposals for digital signature and security techniques.

I need to emphasize that, in retrospect, one of the most ingenious things our task groups did at the start was to connect every participating company and agency on Email. After all, what self-respecting electronic reporting project would begin work by sending piles of paper mail and faxes to its 30 or 40 participants?

CalEPA Secretary Jim Strock officially launched our effort on March 2nd, and by Earth Week, six weeks later, we had already transmitted hazardous waste manifest data to CalEPA using simple telephone line hookups, an old 386 personal computer, and a nonproprietary data format already used by thousands of companies to track nonhazardous products and materials in commerce.

By the close of our first year this December, we will have "electrified" the two or three most data-intensive reporting forms on our joint public-private priority list, and established an electronic signature and security technique to make the submissions completely and legally binding for California compliance purposes.

And by June 1996 we will have reported and evaluated our results through the DMAC to support a decision by the Secretary to go State-wide with our electronic standards.

Notice what California has done:

1. We let the likely beneficiaries of electronic reporting take the technical lead.

2. We eliminated all of the spending and procurement delays attendant to agency led pilot projects.

3. We steered clear of proprietary approaches.
4. We focused only on the data interchange standards—not the design of software on either the sender's or receiver's end of the transmission.
5. We produced results promptly, on a time scale more akin to project schedules in the competitive, "can-do" information technology industry.

But despite all our speed and work product, come next June, even if we could electrify every one of the California state and local environmental and hazardous materials reports and application forms, we would still have companies and governments facing Federally-mandated paper forms.

So we have come to ask you and this Committee, Mr. Chairman, at the very least, to plug this Federal hole in electronic reporting authority. We invite you to introduce, and help us support, Federal legislation that would solve the problems and speed results along the lines of the California approach. We support the draft language circulated by your staff in preparation for this hearing. The draft correctly addresses all of the major problems that have slowed the adoption and use of electronic data exchange wherever multiple government agencies are involved in the process.

Here we have an opportunity to improve our working relationships by improving the data flows between Federal and non-Federal organizations. In business, it is a good thing—not exactly painless, but a good thing—for a new computer information system to force existing departments to rethink and reengineer their data demands and paperwork procedures. In California, it has been a good thing for our industry led, public-private data standards effort to bring optimism and demonstrated results to jaded members of the environmental management community. In California, people happily volunteer their skills and time when we can promise that their work will result in legally binding improvements to the system.

I hope that this Subcommittee will consider our California good-news story in electronic reporting, add the opinions of other people with experience and with stakes in this new electronic age, and shape them into a more modern, more appropriate mechanism for adopting management information technology—that is, for "going electronic," across all agencies at the Federal level.

Thank you for your time and consideration, and I would like to answer your questions here if we have time.

Mr. HORN. Thank you very much, Mr. Ferguson. I now yield to the gentleman from Illinois, Mr. Flanagan, to begin the questioning.

Mr. FLANAGAN. Thank you, Chairman. I thank the panel for coming today. Your testimony is indeed enlightening, always is from true experts in a very specified field. Mr. Lamont, I read through your testimony and I heard your testimony. I wonder if you could expand a little bit on what your firm does.

Mr. LAMONT. First off, let me clarify we usually try to refrain from referring to ourselves as experts. It implies has been——

Mr. FLANAGAN. OK, I won't call you an expert.

Mr. LAMONT. That's fine. We've been in business now for some 35-plus years and testimony reflects we are in the business of recycling hazardous waste. Essentially, what we do is we take chemical by-products that a variety of manufacturers will generate in their manufacturing and their service sector and will bring the constituents to our facility, at which point in time we'll try to remove the contaminants and have a recycled product which we can redistribute and sell back out to industry.

The role has certainly changed tremendously over the last 15 years with the tremendous incentive to minimize waste. What we've done is enhanced our relationship and going out with the generators and actually educating ourselves on their process and trying to help them find ways to reduce the amount of waste that they generate.

It's been very broad.

Mr. FLANAGAN. I wonder if you could tell me, with your undoubted expertise and the nature of your business, and the fact that your business is successful, you possess a great deal of expertise on these reporting matters, and you have, as your testimony reflects, and as you said today, thousands of papers per transaction on any given matter, why you offered your time and resources to the California project rather than the U.S. EPA project.

Mr. LAMONT. Well, the primary reason, in order to compete in the nineties, what we found within our business, we have to be less vertical and more horizontal. We have the same problem that we had seen essentially within the agencies, where they had basically looked internally in how they wanted to operate and then created their own form or information that they needed.

Even within our own business we were doing the same. We were a group of many departments, and departments in order to operate and improve their efficiencies basically became their own little kingdoms. And in doing so they create their own data bases. And again, with the philosophy that we needed to be more horizontal, what we had found is we were actually working against ourselves.

Certain departments were working against another department. We all needed to pull on the same end of the rope. We needed to simplify how we did business. So our motivation was we focused internally first. And in doing so we had found that we ourselves created many data bases and duplication of effort. And we were not being very economical. So in cleaning ourself up, what we found is, hey, there is much opportunity to now take this internal savings and to try to do it external. And so that is what led us to this whole project of looking at the environmental realm and the tremendous amount of burden that we, our industry has, and the tremendous cost savings that we have by taking the internal, applying externally.

Mr. FLANAGAN. So you found a more receptive audience with the California project than with any national product, project that may have been going on?

Mr. LAMONT. It was close to home.

Mr. FLANAGAN. Perhaps as we horizontally pull on the same end of the rope, you could tell me about the impact on small businesses. It still is a great concern. I heard Mr. Roe's testimony about how environmental accountants will be set up. I neither wish with legislation to mandate technology, as Mr. Ferguson has pointed out, nor do I wish to mandate a boutique business coming into existence.

I mean the great advantage of Mom and Pop grocery stores is if they choose to do their taxes themselves, they can. But for good business judgment they may choose to hire an accountant. I don't want to ever be so complicated that a small business in your area has to go somewhere else and we mandate a business coming into existence. With that frame in mind, perhaps you can address the concern of how small businesses may be able to react or come to this.

Mr. LAMONT. Likewise, we entered this whole project with a concept, too. We wanted to make sure this was voluntary. We wanted to make sure that what we were proposing here was right for each business. And that's a personal decision that business has to make. We had an opportunity over the past 3 months to put on con-

ferences. Not only in the State of California, by the way, in Arizona and Washington and Oregon. And part of that conference that Romic—that we held, we met with a variety of businesses, many of which were small, and part of the agenda was looking at what we see before us today. And by overwhelming response it was embraced by, again, small and large businesses. And the small businesses, it certainly seemed that, as Mr. Roe had indicated, many of them saw this as a venue, as a way of just accessing information, as trying to simplify the project of identifying what it is they need to do in order to maintain compliance.

They want to maintain compliance, and they want to reduce operating costs. And they want to try to do it in as simple a fashion as possible. And they had felt that the—by going electronic, which many of them are doing, many of them are doing their inventories electronically, therefore many of them, because they have the data on a—in a file, now see the value of being able to apply it in the reporting scheme. And this is what clearly came out. It's, again, voluntary. It's a personal business decision for themselves, but they saw an opportunity to simplify their business.

Mr. FLANAGAN. So you would reflect to us at least in your experience neither a carrot nor a stick is involved. It's just very attractive in its own right?

Mr. LAMONT. That's correct.

Mr. FLANAGAN. Interesting. Perhaps for you and Mr. Ferguson, because it's a business-oriented question, Mr. Roe, I'm not leaving you out purposely, but their area of expertise may provide us here, is it possible that if we get this to work in such a way that it is attractive for business to participate in, this will open a venue for other forms of electronic communication with the Federal Government, not just to mention reporting for this, but perhaps taxes, maybe some of the immigration difficulties we deal with, all sorts of contact with the Federal Government being in an electronic way with, if not standardized, some regularly used formats that would make it possible for Mom and Pop not just to talk about the gas tank that's buried in the back and they have to talk about that, but also they handle their tax matters and the employee that they've just hired to verify his employment, if that is the way we wind up going with that, and half a dozen other matters that they may have to deal with various levels of Government, whether it be the city of Palo Alto or the State of California or the Federal Government of the United States.

Mr. LAMONT. Respond to that, couple months ago I had left a voice mail message within our own company to several of our group managers. I left that voice mail message at 9 p.m. And I asked—the question essentially was, hey, looking at this whole concept of environmental reporting, if we were to step outside of the environmental arena, if you were to take a look at your own area of responsibility, what potential impact is there? What possibility, what cost savings might you see?

By 8:10 the following morning, I had three voice mail messages already from group leaders, which had ironically run around and met with their group earlier in the morning, and they had clear-cut examples around the Department of Commerce, the Department of Labor, in which they had seen numerous examples in

which we could simplify how we do business and therefore generate cost savings.

Mr. FERGUSON. The question is a good question. I'd just go to OMB, tap their data base on burden hours for information collection across the Federal Government, target on a 10 percent reduction.

Mr. FLANAGAN. My question was not so much the ease or interest of Government in this, although that's important, because it's all tax dollars that are spent. But Mom and Pop now find it real attractive to talk to EPA on some matter that they have or some requirement that is placed upon them. The ice is broken. Maybe look at that and say, well, you know, maybe I do my taxes this way, you know, here's a way I can talk to INS this way and half a dozen other agencies that they may have to deal with on a regular and continuing basis and not just at the Federal level, but all the way down to, you know, their parking permit in front or they need their street repaired or something and talking about the city of Palo Alto or the State of California. And is there a general receptiveness out there for that, people looking for an easier way to do these things?

Mr. FERGUSON. I think there is definitely a receptiveness. And we don't need to wait for analogs. We do, in fact, see it with the on-line services. For $5 a month or whatever it is, ordinary normal individual people in small businesses do, in fact, sign up, exchange messages with their own interest groups, very focused things as well as topics of general interest. And by lowering the transaction cost of dealing with Government, we make it easier for people to do that happily.

Mr. FLANAGAN. Well, there's the other problem that would occur to me, because I am not among the initiated or the anointed with computer languages, that you have to get them over that barrier, too. And you gentlemen stood at that threshold once and are past it and perhaps have forgotten it. But when the focus of your life is how many cans of beans I have and what my inventory looks like this week, the idea of talking to the Federal Government over a keyboard is somewhere between frightening and impossible in your own mind, until you're brought into it and have done it once. And I'm wondering if this isn't a venue to further broaden that horizon through the business community.

Mr. FERGUSON. It certainly is. And it underscores the importance of having some good examples to show. Training by example is an important feature in all of this.

Mr. FLANAGAN. Do you have business cooperatives or whatever that are willing to take this information down should someone apply it to you and say, help me? Is there an organization in California that will help them with this?

Mr. FERGUSON. We're actually rehearsing that. We don't have a formal organization, but we did organize industries specifically to work on these environmental standards, and we did get phone calls from other companies in other industries. Westinghouse is a manufacturer in Santa Clara County. Westinghouse is interested in finding out the implications of doing this.

Stanford University was a big submitter of data on hazardous materials in the research labs, and they dropped in on a couple of the technical sessions so they could climb the learning curb. When

they adopt it sooner or later, I don't yet know, but it turned out to be a good forum to bring people to——

Mr. FLANAGAN. Westinghouse and major universities are all well and fine, but they have the ability to participate in this in a financial, meaningful way, if you put it that way. But smaller entities, are they coming along and saying, you know, this is a great idea, can someone pull me over the threshold? And have such people applied to you, or is there a way that they can go and get a little training or think about this in more than a theoretical way, but in a really meaningful tactile way?

Mr. FERGUSON. They haven't applied yet, but there is a feature here in environmental information technology, which I think gives us some hope. It's by using a common language, by going to a common language, a common set of formats, making the cost of the language close to zero, we invite software companies to enter that market. Some software companies will choose the small business market. They're already in touch with the small business owners on other applications.

So they'll walk in 6 months from now or 8 months from now and say, gee, I've got another module to offer you, and there is no learning curve time. We paid that cost, the standards people paid the front end cost. It's yours for $29 or whatever tax software costs these days. That kind of technology distribution to the small business is probably the likelier model for this.

Mr. FLANAGAN. Well, if we're trying to operate horizontally among the business community—I'm getting very good with these terms, by the way, Mr. Chairman. We don't use these in the Midwest, but we're trying. I notice you both made reference to Earth Day as if that were a commonly known date to all of us. I realize it's probably a holiday in California, but we're all learning it, trust me.

Mr. LAMONT. If I could add one point to Rick, here. I did have an opportunity to sit down with a small business. This was about a week and a half ago or so. And this business is very commonly going through what most across the country are, and that is they're trying to cut costs, trying to become more competitive. And to this one environmental manager that I essentially met, it's just a slash on their staff.

And they're being asked to do more things, even outside the environmental realm, they're wearing multiple hats. And in order for them to just do their job and satisfy the owner, they need to put out more work. And they were really excited about the fact that the waste material which they sent to us, which there's a lot of paperwork which they need to fill out and, in turn, when it arrives at our facility there's a lot of paperwork that they get back, they were very excited that this paperwork could be submitted to them electronically. And if this—if a tool could be put in place to help them fill out their own internal reports and submit this to the Agency, it would save them time. It would save them money. They would have a happy owner. Very simple.

Mr. FLANAGAN. Well, I think, this is the final point I'll make, Mr. Chairman, then I'll yield back, is if you are going to operate horizontally, if you are going to have a business community consensus with other input from Mr. Roe's organization, of course, and others,

this is the best, most effective way, in my opinion, to defeat mandating technology and to take the reins yourself and say we will develop something that will work to avoid Government from having to say do it this way, which, of course, makes the Federal Government of the United States the largest consumer of vacuum tubes in the Nation. And I think that the approach that you're taking is wonderful and I look forward to hearing more about it and the expansion of it. And I thank the panel, I thank the Chair and I yield back.

Mr. HORN. I thank my colleague. And those were very good questions. Let me just ask you a few closing questions, unless the gentleman from Illinois has some more. As I understand it, from staff, Mr. Ferguson, the General Services Administration, the National Institute for Standards and Technology, have been involved in developing standards for an electronic signature scheme. This has been apparently the subject of a lot of delay. There are reports that digital signatures at the Federal level will not be available until 1997, at the earliest. How has your group developed the digital signature standards in California and handled this problem?

Mr. FERGUSON. Well, we had the first introductory session on that just a couple weeks ago. Our approach is to ask the companies, either who are members of the industry group, OB, or other companies in Silicon Valley, to suggest to us, they are the users, they know the technology, suggest to us, to the extent they understand electronic reporting and environmental agencies, what the appropriate scale of technology would be, what the appropriate cost of technology would be.

We will play back to them the concerns of enforcement officials that Steve Hanna and CalEPA's chief enforcement official brought to our last meeting. We'll say are these the same kind of concerns that you've heard over the years on commercial transaction signature and security? Is there something different about regulatory certification? And to the extent that we communicate the enforcement officials' concerns to the people in industry who already know this stuff, we're—we'll rely on their proposals in the industry group. And we'll carry those proposals faithfully to the Data Management Advisory Committee.

I can't say today what particular signature technology might be employed. As a simple factual matter, the use of this encryption technology does the trick for just about every concern or objective one has, for the equivalent functions of a paper signature. So I am optimistic that the technology is already there, the costs are going to be trivial. It's just a question of letting the people in industry who know this stuff assess the environmental need and make the proposal. And I expect that we'll be finished with that proposal in the first advisory committee hearing well before Christmas this year.

Mr. HORN. To your knowledge, is CalEPA going beyond that at all or are they just waiting for the result of this particular group?

Mr. FERGUSON. CalEPA is waiting for the result of the industry group. I would add that our legislature just passed, I think the Governor just signed, a generic digital signature bill in California, declares it OK to sign things and be bound by things in a digital

fashion and puts the rulemaking authority in the Secretary of State's office.

Mr. HORN. This is in addition to the Sher bill?

Mr. FERGUSON. In addition, yeah, this is a generic—this is brand-new legislation.

Mr. HORN. What's the—is there a name?

Mr. FERGUSON. AB 1577.

Mr. HORN. AB 1577. And who authored it?

Mr. FERGUSON. Deborah Bowen.

Mr. HORN. OK. She's from our area of the world in California.

Mr. FERGUSON. Tackling the information technology issues. In that statute, they carefully carved out an exception for the progress we're making, since we're about a year ahead of the curve on the environmental signature, so that they have an obligation to consult with CalEPA, and we hope to use our example as a good one.

Mr. HORN. Mr. Roe, I was interested in your testimony that compliance-related information be considered binding only when it's been published on the Internet in a searchable form. Obviously that's an interesting idea. Are the regulatory submissions in California searchable or is it strictly going through the cubic feet of boxes at the present time?

Mr. ROE. If they are on paper, it's the cubic feet approach. Actually, we had over 10 years ago encouraged the State to look at its electronic data bases then and discovered in the hazardous chemical area that there were, as I remember, 22 different sets of software on eight different sets of hardware, that just the State of California was using just for hazardous chemicals. So even electronically, in that system it is unsearchable.

Mr. HORN. Let me interrupt. Was that because different divisions or agencies were involved?

Mr. ROE. That's the Tower of Babel that Mr. Ferguson describes. Totally unintentional, everyone doing the best they could, agency by agency, but not coordinated.

Mr. HORN. They had never talked to each other, to your knowledge. They just went ahead and did it?

Mr. ROE. Not until Governor Duke Majian's Environmental Secretary, Gordon Duffy, took the suggestion of some of us and put a staffer on finding out just what the situation was. And since then I think was the earliest precursor of the process you're hearing about today.

Mr. HORN. Interesting. Go ahead. You wanted to add a few other things, I thought.

Mr. ROE. I guess I wanted, excuse me, to make sure that Mr. Flanagan did not get the impression that we were urging the mandate of any business, boutique or otherwise.

Mr. FLANAGAN. No, no, not at all. And I didn't want to ever get to that point where people just throw their hands in the air and say this is too hard, let me call my environmental accountants who will process this for me because this is too hard for me, because we made it too hard. And I never wanted to get to that point, even though a business may be burgeoning to accomplish that for them.

It must always be, in my opinion, in a way simple enough for Mom and Pop to be able to do it, if they choose to. There may be

very good business reasons why they wouldn't. Always be easy enough for them.

Mr. ROE. EDF strongly feels that this needs to be voluntary, that it's a demand pull situation. And one of the appeals of what is going on so far in California is that that's the way it's worked. It has been the reporting community.

There is a problem that one of your comments brought up earlier. Because it's demand pull, because it is the relatively sophisticated reporters who have taken on this task, it's very important to be sure that other interests are represented, and that's hard to do, simply from lack of sophistication. I didn't say this orally, but my written testimony points out it may need a little extra resource support just to bring environmental, small business, some of the other players, able to talk the same language that you're hearing at this table, but that's a very worthwhile investment in terms of the public confidence that will come out. That is simply to say, we're strongly in favor of the demand pull, voluntary, industry-led approach. It just needs that extra wrinkle.

Mr. HORN. Does the gentleman have any other comments? Go ahead.

Mr. FLANAGAN. Mr. Ferguson, I merely offer you, gratuitously in your testimony, you asked for—you stated a little legislation goes a long way. Those have often been famous last words. Be careful for what you ask, you may very well get it.

Mr. FERGUSON. Understood.

Mr. HORN. I take it the Environmental Defense Fund chose to participate in the reporting project for the simple reason it would give you rapid, more rapid reports that you could access?

Mr. ROE. That, among other reasons. We really do feel that given our experience in the last 10 years, particularly in California, but also federally with TRI, circulation of information that's reliable, that can't be hidden from, has a very positive effect. Companies looking in the mirror, and this is a way of allowing them to look in the mirror, will change much more quickly than even in the face of what appears to be a mandate. And we'd like to see that, reinforcing that kind of reiterative system, be something that we get more benefit out of.

Ironically, we found in California, the more accessible the data, the less necessary it is to act on it. Because everyone reports, anticipates that it will be seen, and makes the necessary adjustments. So it's a very positive, self-feeding loop, which is not independent of Government, but partakes less of enforcement, inspection, perhaps even than the system we've gotten used to.

Mr. HORN. You heard my questions to Mr. Kelly and Dr. Hanna, on how we get people together to start moving in this direction on more than just Federal EPA, important as that is, and California, important as that is. What suggestions would the three of you make as to how we might get this movement moving?

Mr. Ferguson.

Mr. FERGUSON. Use the Internet, society's model, the engineering people on the Internet. Request for comment goes on the screen, however many people we have now, 3 million, 30 million people that know how to dial up and use the Internet from home or from universities or from a company office. You create the news group

or sponsor that e-mail chain of comments. Collect the comments for all to see.

I mean the cost of sending the message, incremental cost is trivial. It's a great way to get good information, whether, as happened in the Intel people a long time ago, there was a problem with a chip, or in this case you're just trying to get the sensible bounds for a new technical standard. Of course, the Internet tends to attract technical people. So in effect you're biasing the system toward inducing people who are smart on these topics to weigh in. These are people that would avoid at all costs the requirement to fly to Washington and testify at an agency hearing.

Mr. HORN. Well, I will delegate Mr. Brasher, who's sitting on my left, to play with the Internet and see what we generate on the draft bill. And we'll take you up on that.

Yes, sir, Mr. Roe.

Mr. ROE. I guess I would say that, remember what the parameters of this exercise are, developing a standard format, a data dictionary, so that we do speak the same language. So to the extent that we're clearly limited to that, the devices that Mr. Ferguson's talking about I think will work very, very well, particularly if they have those assurance pieces that I described earlier, which are so important to convince folks who will never be technical sophisticates that this is not a game. That's very important.

What we're talking about is a consistent language. To the extent that gets muddled with other issues, where you need other kinds of public participation, I think then you have much more serious problems. So my recommendation would be, keep this clean, move as fast as we can, and see how it works. Because, after all, nothing we're talking about here is mandatory. It's not as though Mr. Ferguson or anybody else can come and make it happen. It's something that is essentially a democracy of the reporting community.

Mr. HORN. Mr. Lamont.

Mr. LAMONT. This sounds a bit opportunistic, but I guess in adversity there is opportunity. I think you take a look at the state of the economy right now, this is what really has motivated what we're seeing right now. It's forcing everybody to take a look internally at themselves to try to cut out duplication of effort, try to simplify how we communicate and how we do business.

I feel that that really is the focal point, that's really what is motivating industry. If there is a way to continue to keep this pressure on to simplify how Government and businesses communicate and how we work with each other, that would really be the answer.

In this project, this industry initiative in California, we tried to keep it simple. It is a big project, it is very complex. We need to make sure that we get some milestones that are very visible, that definitely are achievable, and continue to build on these stepping stones.

Mr. HORN. I was impressed with your figure of the 3,000 pages of paperwork per month that would be eliminated. And I wonder, what's the relative burden of reporting to CalEPA versus U.S. EPA? Is there any way to look at that now?

Mr. LAMONT. Mark Furhman did a wise thing and took the fifth, when asked some questions like that. It—relative to the manifest itself, we move a lot of material out of State and when it leaves

our State, many times it is likewise on a uniform manifest or it may be on a manifest that's restricted to a particular State, the State of the ultimate facility. California manifests are roughly 70 percent of that figure.

Mr. HORN. It's interesting, you know. We have the problem of trucks, of course, going across State lines, and an accident happening and the fire occurring, and the question is: "Does the local police department know what's in that truck?" And so we certainly need to share some of that information beyond the environmental community for the reporting and the regulatory role they perform under the law. We need to get it in the hands of the emergency people so they know what to do when something happens.

Mr. LAMONT. The ultimate vision for that is if indeed we can eliminate this piece of paper altogether, and before a load leaves a facility it's already electronically available, electronically available to anybody that wants to punch in that license plate number or any identification markings.

Mr. HORN. Right, it would shoot up on the screen. They'd know what they're dealing with.

Mr. LAMONT. The CHP, highway patrol, would be able to not even leave their car, be able to look at their screen, see exactly what's in it, where it's going.

Mr. ROE. Well, technologically, of course, if it's a Federal Express truck, they do know what's in it, because they punch all that in when they pick it up.

Mr. HORN. What about besides the EPA regulatory submissions, are there additional Federal agencies that are in the purview of your particular businesses or associates or associations that would be susceptible to the solution embodied in the California electronic reporting project? What comes readily to mind?

Mr. LAMONT. As I mentioned in that infamous question I asked the group management team, some of them are very simple. Simple response is the U.S. Department of Commerce. There's the Bureau of Census. There's something referred to as a commodity flow survey; simply when waste is transferred, how it's transferred, does it travel rail, does it travel highway, does it leave State boundaries, virtually four or five different types of reports that are very similar to that. We have the annual capital expenditure survey, a very lengthy survey which must be completed by our business on a routine basis, which is very lengthy, details all purchases. Countless examples along those lines.

Mr. HORN. One of the measures we're going to shortly put in is to centralize some basic statistical agency such as the Bureau of the Census, Bureau of Labor Statistics. And of course, that's ripe for exactly what you're talking about.

Mr. ROE. In my testimony, Mr. Chairman, just from the environmental point of view, I list OMB, EPA, USDA, Department of Energy and Department of Interior, OSHA and the Food and Drug Administration. I'm sure that's not exhaustive.

Mr. HORN. Right, right. Well, are there any questions the minority would like asked? They write excellent questions, they just need we actors to engage in their script.

I want to thank the people that have been involved in this hearing, besides the witnesses. I appreciate your coming here. I hope

that the convention that you're a part of is very successful. Russell George, our staff director and counsel, down in the corner near the phone; Mark Brasher to my left; I mentioned the professional staff member that's primarily responsible for this hearing; Tony Polzak, legislative fellow on leave from the Department of the Army for a year; Andrew Richardson, our clerk, and Dave McMillan of the professional staff for the minority. And then we had two reporters, since you all kept people busy today, Donna McCalley and Sara Watt. We thank you. So this hearing is now adjourned and the bipartisan legislation, which I'm confident will be, will be introduced in the coming weeks as we discuss it with Members of the minority. Thank you very much.

[Whereupon, at 4:23 p.m., the subcommittee was adjourned.]