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How Well Prepared Are You?

“Scenario driven” exercises and similar threat assessments are frequently used by federal, state, and local officials to strengthen their emergency response. To date, these exercises have rarely included the private sector or focused on critical infrastructure systems such as energy transmission. Now, ICF Consulting has conducted one of the United States’ first joint public and private sector exercises focusing on terrorist threats to electric power transmission systems.

Designed to test existing plans and educate key personnel on new threats and vulnerabilities, this exercise for a federal client tested the capabilities of state, local, and private-sector organizations to jointly respond to a terrorist attack on energy transmission systems.

ICF Consulting used its experts in energy and emergency management to develop, implement, and assess the exercise. Of particular value was the ability of the ICF Consulting Team to model power transmission systems, anticipate potential problems, and evaluate the time and materials required to reenergize

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Doing One's Bidding: The SMART Way

The use of competitive bidding to satisfy the need for new power-generating capacity is on the verge of a major comeback.

From 1984 to 1995, competitive bidding was in its heyday. There were 164 separate solicitations in 37 states, for a total of 42,849 megawatts (MW), with bids received for more than 10 times that amount and bids accepted for 22,814 MW. Utilities employed many different types of bids and evaluation criteria.



Competitive bidding took a nosedive in the mid to late 1990s, though it did not entirely die out. It was often

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Making the Business Case for Environmental Management Systems

Many organizations have elements of an environmental management system (EMS), but it is not fully functional. Questions abound about making the business case to move to an EMS, but all can be distilled to one—*“How do the costs compare to the expected benefits?”*

There is a dearth of business case data from early EMS adopters. Companies that report some costs of implementation rarely quantify benefits. Unfortunately, anecdotal reports of cost savings and other benefits do not provide information about what it costs the organization to achieve those benefits.

A recent U.S. National Aeronautics & Space Administration (NASA) study established the gold standard for measuring EMS implementation costs.

NASA compiled implementation cost information at three centers piloting EMS, including estimates of in-house civil servant and contractor support. The costs range between \$111 and \$138 per capita with a range of hours spent from 1.3 to 2.3 per capita. NASA used this information to estimate the costs for its remaining centers to adopt EMS.

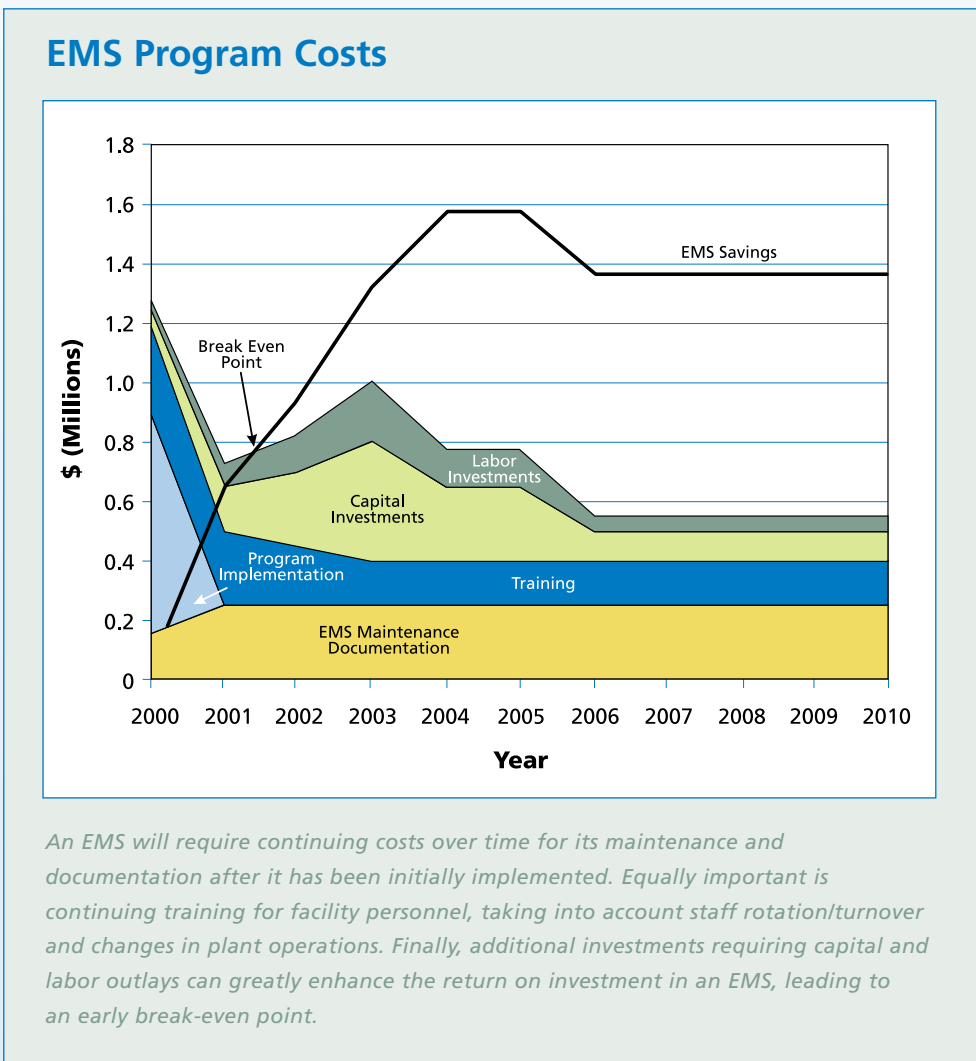
However, because NASA is required by an Executive Order to install EMS at all appropriate facilities, it was not necessary to estimate the EMS benefits in dollar terms and complete the standard business case. The dearth of benefits data continues.

There are two major categories of benefits from EMS: direct and indirect. The direct benefits represent the efficiency and effectiveness results of having a system for environmental management. Although these benefits may be significant, a greater pay-off can be expected as an indirect result of EMS. The indirect benefits include savings related to better use of energy, water, and materials; reduced occupational safety and

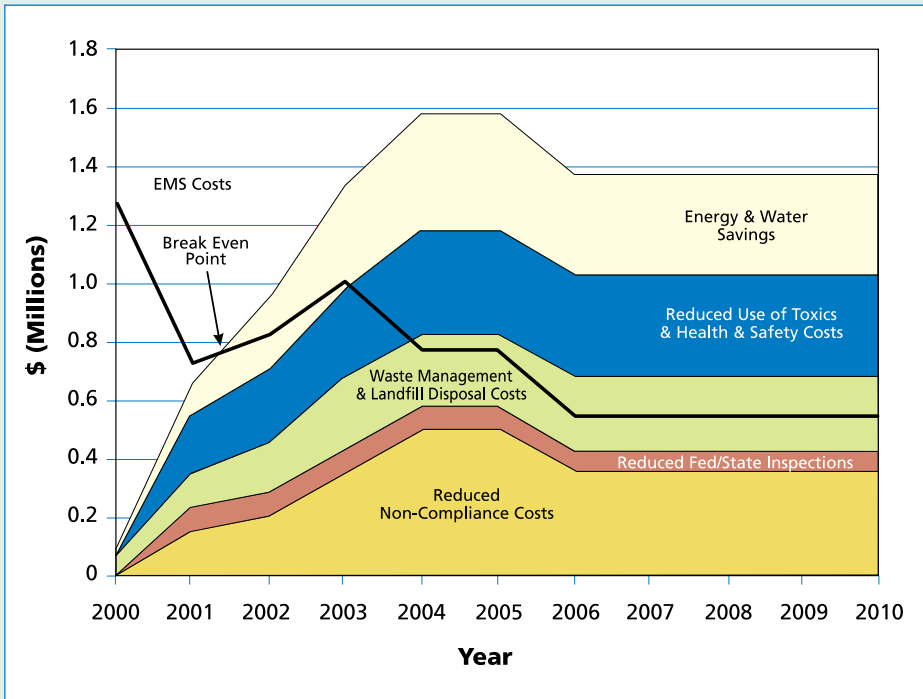
health costs; fewer compliance obligations; and less waste to treat or dispose. For the most part, these benefits require some additional investment.

The investment can be very worthwhile. Returns on such investments tend to have two-year paybacks and can generate savings of about \$3.50 for every dollar invested. These returns drive the savings and break-even points illustrated in the charts, below and on page 3.

Companies differ greatly in terms of what they require in a “business case” for EMS. Some companies simply seek an articulation of benefits and look for congruence with existing environmental policies and corporate goals. Other companies demand detailed financial projections. And many organizations fall between these two extremes.



EMS Program Savings



EMS costs can be outweighed by a variety of savings (and cost avoidance). For some facilities, reduced non-compliance costs will be a major contributor to the savings produced by an EMS; other facilities may realize value through reduced federal/state inspections, which can free up substantial staff time, even for facilities with excellent compliance. Major savings are likely from reduced quantities of waste to be managed and disposed, less use of toxins resulting in fewer health and safety costs, and savings from energy and water conservation.

In deciding to advance to the next level in environmental management, it is important to understand the organization's individual culture, environmental and business policies and goals, and its potential for realizing financial benefits from improved environmental management.

ICF Consulting developed a suite of tools for organizations contemplating an EMS, including one for scoring parameters (EMS Business Case Evaluation Tool). A score between 40 and 50 indicates a strongly positive business case for EMS, while a score below 20 means that the business case for EMS is unclear. ICF Consulting's spreadsheet tool can be used for more rigorous mapping of the direct and indirect costs and benefits of an EMS, as illustrated by the charts pictured.

For more information about ICF Consulting's EMS capabilities, please visit www.icfconsulting.com.

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Calendar of Events

March

March 25-26

Arlington, Virginia. ICF Consulting is a sponsor of the Strategic Research Institute's Second Annual **Energy Security: Securing Our Nation's Power Conference**. Judah Rose will speak on "The Vulnerability of Our Electric Grid" at the luncheon on March 25. The conference presents case studies from power companies discussing securing facilities and talks on emerging technologies that will aid in the security of our nation's power plants. *For more information, please visit www.srinstitute.com/lcr241 or call Anne Torgler at 1.703.218.2772.*

March 30-April 1

New Orleans, Louisiana. Judah Rose of ICF Consulting will make a presentation entitled "Is the Market Overbuilt?" at **Platts' 18th Annual Global Power Markets Conference**. *For more information, please contact Stacey Hohenberg at 1.703.218.2504.*

March 31-April 1

Toronto, Ontario, Canada. At the Canadian Institute's conference on **Emissions Trading and Reduction**, Skip Willis of ICF Consulting will give a presentation entitled "Getting Credit for Greenhouse Gas Reduction Activities: The Latest on the Emissions Verification Process." *For more information, please contact Kim Curran at 1.416.341.0990.*

March 31-April 5

Kansas City, Missouri. ICF Consulting is sponsoring **Affordable Comfort 2003**, along with the Metropolitan Energy Center of Kansas City and more than 50 other partners. Eric Werling of ICF Consulting will be facilitating workshops on "Limiting Mold Liability," "Selling High Performance to Production Builders," "Voluntary Indoor Environmental Standards," and "Home Energy Rating Systems," as well as a short course on "Comparing ENERGY STAR® Labeled Homes Programs." *For more information, please contact Eric Werling at 1.540.338.0211.*

April

April 14-16

Washington, DC. ICF Consulting is sponsoring and will exhibit at the **E-Gov Knowledge Management Conference**. This conference will discuss how to introduce, implement, and upgrade KM programs in a public sector context, with heightened emphasis on how to support many pressing national security concerns. *For more information, please contact Tim Herbst at 1.703.934.3766.*

April 23-24

Lexington, MA. ICF Consulting is teaching a two-day course on **EHS Auditing: Fundamentals, Skills, and Techniques**, an intensive, real-world course focusing on the methods and techniques needed to conduct environmental, health, and safety (EHS) audits. *For more information, please visit www.icfconsulting.com/ehs-learning*

April 29

Washington, DC, and via Internet. ICF Consulting's Steve Fine, Nate Collamer, and Chris MacCracken will hold a two-hour Web seminar on "**Valuing Renewable Generation Assets—How Market Fundamentals and Regulations Drive Green Premiums**," at 1 p.m EST; fee \$195. You also may attend the workshop in person at ICF Consulting, 1725 Eye St., N.W., 10th Floor, Suite 1000, Conference Room A, Washington, DC 20005. *For more information, please contact Stacey Hohenberg at 1.703.218.2504.*

EHS Auditing: Fundamentals, Skills, and Techniques

The Classic EHS Learning Institute Course in a streamlined 2-day version!

Course Date: April 23-24, 2003

Location: ICF Consulting, 33 Hayden Avenue, Lexington, Massachusetts

For more information, visit www.icfconsulting.com/ehs-learning or contact Susan Ferola at 1.781.676.4109.

May

May 6-7, 2003

Los Angeles, CA. ICF Consulting is teaching a two-day course on **Commuter Benefits Programs** sponsored by the National Transit Institute. The course is designed for staff who manage and promote commuter benefits programs at transit agencies, rideshare organizations, transportation management associations, and metropolitan planning organizations. *For more information, please contact Michael Grant at 1.703.218.2692.*

May 11-14

Salt Lake City, Utah. At the **American Association of Petroleum Geologists Annual Meeting**, Robin Petrusak and Julio Manik of ICF Consulting will give a poster presentation entitled “Evaluating New York’s Marginal and Inactive Oil and Gas Wells—Assets or Liabilities?” *For more information, please contact Stacey Hohenberg at 1.703.218.2504.*

May 12-13

London, United Kingdom. ICF Consulting’s Abyd Karmali will chair **Euromoney’s Emissions Trading: Commercial and Financial Implications Conference**. *For more information, please contact Sue Demmon at +44.20.7554.8730.*

May 19-21

Washington, DC. At Infocast’s **Transmission Investment Conference**, ICF Consulting’s Elliot Roseman will participate in a panel entitled, “Can You Bank on Proposed Incentives to Build New Transmission Capacity?” *For more information, please contact Stacey Hohenberg at 1.703.218.2504.*

May 20-22

Prague, Czech Republic. ICF Consulting is a sponsor of **CWD 2003—the International Chemical Weapons Demil Conference**. The conference promotes cooperation between governments, organizations, industry, and the world research community to address and provide potential technical and practical

solutions to the key problems associated with chemical weapons disposal. CWD 2003 provides an international forum to exchange information relating to technical and political issues concerning the demilitarization of chemical weapons. *For more information, please contact Jennie DeVeaux at 1.703.934.3684.*

June

June 9-10

Washington, DC. At Platts’ **Implementing Locational Marginal Pricing and Managing Transmission Congestion Under the Proposed Standard Market Design Conference**, Elliot Roseman of ICF Consulting will moderate the panel session “Will You Be Ready? Preparing for LMP Implementation and Integration for Smoother Grid Operation.” *For more information, please contact Stacey Hohenberg at 1.703.218.2504.*

June 9-12

Washington, DC. ICF Consulting is sponsoring and will exhibit at the **E-Gov 2003 Annual Conference**. The conference focuses on the full spectrum of e-government operations and industry trends. A two-day exhibit featuring services and products is free and open to the public. *For more information, please contact Tim Herbst at 1.703.934.3766.*

June 18-20

Houston, Texas. At Infocast’s **Gas Storage Strategies conference**, Bill Pepper of ICF Consulting will give a presentation entitled “Gas Supply Optimization, Cost Minimization, and Marketing of Storage Services.” *For more information, please contact Stacey Hohenberg at 1.703.218.2504.*

June 19-20

Washington, DC. At the Center for Business Intelligence’s (CBI) **GHG Trading Symposium Conference**, John Blaney of ICF Consulting will participate in a panel session entitled “Industry Response to Proposed Legislation—The Future of Emissions Trading in the U.S.” *For more information, please contact Stacey Hohenberg at 1.703.218.2504.*

June 26-28

New York, New York. At the Center for Business Intelligence’s (CBI) conference, **Forum on New York Power Supply**, Judah Rose of ICF Consulting will run a pre-conference workshop entitled “Acquire Financing to Build or Expand New York Power Assets.” *For more information, please contact Stacey Hohenberg at 1.703.218.2504.*



powered by perspective

Doing One's Bidding: The SMART Way (cont. from page 1)

cumbersome to implement, requiring a complete resource plan, followed by RFP development, solicitation, negotiations, and contracts. Also, utilities no longer wanted to sign long-term contracts. More competitive wholesale markets in many regions created a surplus that favored short-term transactions and economic dispatch over formal solicitations.

But wait. The U.S. Federal Energy Regulatory Commission's (FERC) recent Notice of Proposed Rulemaking (NOPR) on Standard Market Design could signal a reignition of the competitive bidding flame, which could become a conflagration.

This presents a major opportunity for buyers and sellers of power, if they are well positioned and know how to play the game.

What's changing?

- The surplus is shrinking. Due to capacity surplus and corporate financial distress, some regions will need capacity in 2005 and 2006. The backlog under development fell from 305,000 MW in April 2001 to 181,000 in October 2002, and a further 71,000 MW were tabled or canceled.
- State restructuring has ground to a halt, and states that have not restructured will continue to require a means such as competitive bidding to select new capacity resources.
- Independent power producers and utility contracts of 3-5 years will expire over the next few years.
- Load growth adds the need for 15,000-20,000 MW per year.
- The advent of Standard Market Design (SMD).

What difference will standard market design make? A big one.

First, SMD will require a regional reserve margin of at least 12 percent and create a need for Regional Transmission Organizations (RTOs) to implement procedures for identifying which capacity to add. Second, the proposal rule indicates that RTOs must "inform the...state regulatory authority if the load-serving entity fails to submit a satis-

factory plan for adequate future resources." This includes municipals and cooperatives, which could stimulate a new interest in bidding by these utilities. Further, the proposal rule requires that RTOs select projects with the best combination of features like cost, reliability, environmental

The key questions in the foreseeable future are not whether there will be competitive bidding, but who will carry out the solicitation, who will bid, and on what terms.

effects, and service life—very much like the old competitive bidding criteria. Finally, FERC authorizes RTOs to conduct regional resource planning, use competitive bidding to fill resource gaps, and to combine proposals to ensure the lowest costs.

Bidding in the future will not be the same, since regional planning and SMD will require new approaches. ICF Consulting calls this new approach the "Standard Market Allocation of Resources Technique" (SMART). To be SMART, bidding will have several first-time features:

- It will *evaluate the tradeoffs between all resources*, including transmission, generation, and load management.
- It may be *conducted by new entities*, such as RTOs.
- It will need to be *time-efficient*. Unless planning and bidding can be completed in 9-12 months, bidders run the risk of missing the market.
- It will *require new (and standard) evaluation criteria* (dealing with credit-worthiness and regional interconnection) to streamline the evaluation process.

Thus, the key questions in the foreseeable future are not whether there will be competitive bidding, but rather who will carry out the solicitations, who will participate as bidders, and on what terms. FERC, RTOs, and state regulators will have to wrestle with these central questions. In the end, we will achieve a more vibrant and competitive wholesale market if bidding becomes SMART.

An expanded version of this article was published in the December 2002 issue of *Public Utilities Fortnightly* and can be viewed at www.icfconsulting.com/smart_bidding. For more information on ICF Consulting's energy capabilities, visit www.icfconsulting.com/energy.

Pay-As-You-Drive Insurance Offers Potential Benefits to Consumers and the Environment

Motor vehicle travel is a major contributor to air pollution, traffic congestion, and national security risks due to reliance on oil from outside the United States.

Despite efforts to encourage less reliance on personal vehicles, driving remains the overwhelming mode of choice. In large part, this is due to the economics of driving. Many of the largest costs (vehicle purchase costs and insurance) are fixed and must be paid on a vehicle regardless of how much it is driven.

The U.S. Environmental Protection Agency (EPA) is promoting innovative incentive concept known as Pay-As-You-Drive (PAYD) insurance, where customers purchase insurance on a per-mile basis, rather than as a fixed yearly premium. By changing how insurance is paid, the cost of coverage would effectively relate to how much a vehicle is driven, and turn a fixed cost into a variable cost. The more miles driven, the more you pay; the less you drive, the more you save—thereby providing a new incentive for people to drive less.



Although it is widely recognized that the amount of driving affects your risk of accident, traditional insurance policies do not use mileage as a major risk factor when premiums are calculated. PAYD

insurance would incorporate the risk factors currently used into a per-mile premium and allow individuals to decide how much to spend on automobile insurance. Mileage would be tracked using odometer audits or through advanced global positioning system technologies.

To date, no insurance companies offer per-mile insurance. However, Progressive Insurance has pilot tested the concept in Texas; additionally, Norwich Union, the largest insurance company in the United Kingdom, has announced a pilot test.

ICF Consulting is supporting EPA in working with environmental organizations, insurance trade organizations,

actuarial organizations, and transportation agencies in the United States to promote this concept.

For more information on ICF Consulting's transportation capabilities, please visit www.icfconsulting.com/transportation.

Lobsters—the Bigger the Better

Lobsters are getting smaller. “Fifty years ago, people caught 25-pound lobsters,” says Massachusetts fisheries’ spokesperson Bruce Estrella. North, east, and south of Cape Cod, however, the lobsters caught have gotten much smaller—and that affects more than the daily specials.

Numerous environmental factors, but especially warmer waters, now cause female lobsters in this area to reach maturity and carry eggs before reaching the legal catch size.

On the surface, this appears to be a good thing; however, a large lobster can carry two-thirds more eggs than these smaller lobsters. Fewer eggs now may mean an under-population problem in the future.



The Atlantic States Marine Fisheries Commission and the New England Fishery Management Council are responding. At their request, ICF Consulting developed a data management system to support assessment of American lobster stocks, as well as other animals.

Data are collected when lobstermen bring their catch to market, and from at-sea trawl surveys. By comparing these data to historical data, the stock assessors can identify trends in lobster populations, including the number of lobsters caught in an area during a period of time, size, sexual maturity, and general health of the lobsters. This feedback allows state and federal fisheries to manage catch number and size limits, length of season, gear specifications, and the overall effectiveness of fishery regulations. Last year, the lobster fishery alone accounted for an estimated \$483 million in the Maine economy. Ensuring the vitality of lobster fishery is essential for both the environmental and economic health of the Atlantic states.

For more information about ICF Consulting's information technology capabilities, please visit www.icfconsulting.com/it.

Terrorist Threats Against Energy Transmission Systems... (cont. from page 1)

the network to keep the lights on. Using ICF Consulting's suite of transmission modeling capabilities and the Team's knowledge of federal, state, and local response plans and protocols, participants were tested on decision-making, roles and responsibilities, and the ability to forward accurate and timely advice to senior officials in government and industry.



Modeling was used to simulate multiple contingency outages on the transmission network to determine whether the system would be stable, secure, and reliable. For those scenarios where there were reliability problems, remedial action schemes were designed to pick up as much load as possible within the shortest amount of time. Remedial action schemes included the levels of equipment inventories to be maintained at the utility level and those to be jointly maintained with other utilities.

The project also presented an unusual opportunity to combine the disciplines of energy and preparedness planning into one activity, requiring an equally unusual partnering of public and private interests.

The interface between two "cultures"—the private, engineered approach of energy interests and the response and public policy orientation of emergency managers—served as a mutually enlightening look at how to effectively maximize human resources in responding to a crisis. The public sector function of response planning and recovery coordination does not always seek a private sector interaction; similarly, business continuity and contingency planning in the private sector is not always informed by public sector roles and responsibilities.

In this exercise, the information flowed in both directions. Public officials learned about the private sector's role in trouble-shooting system failures, and private sector managers learned about coordinated response activities from federal, state, and local officials. The resulting benefits included an interest in furthering this new partnership through future collaborative efforts, and a commitment to revisit planning

activities in both sectors based upon lessons learned from the exercise.

ICF Consulting is encouraging future clients to build an expanded perspective and capability to respond to the multi-disciplinary nature of homeland security and emergency planning for all sectors. One specific lesson learned: it is essential to engage the private sector in the design

and execution of critical infrastructure exercises since the private sector owns and operates a majority of the energy infrastructure in the United States.

Furthermore, ICF Consulting believes the public sector needs to lead/push the private sector to work together in critical infrastructure exercises because, increasingly, different parts of a community's energy supply are owned by multiple companies. Getting these companies to work through the interdependencies and cascading effects of multiple system failures may be the first time they have jointly worked to minimize damage due to energy failures and the impacts on our economies and communities.

For more information about ICF Consulting's exercise capabilities, please visit www.icfconsulting.com/em.

About ICF Consulting

ICF Consulting is a leading management, technology, and policy consulting firm. Drawing upon its extensive industry knowledge, credentialed professionals, and innovative analytics, it develops solutions to complex energy, environment, emergency management, community development, and transportation issues. ICF Consulting's approach to these issues is strengthened by its expertise in information technology, organizational improvement, program management, and communications. Since 1969, ICF Consulting's 1,000 employees have served major corporations, government at all levels, and multinational institutions from key business centers in the Americas, Europe, and Asia.

For more information on ICF Consulting's services, please visit our Web site at www.icfconsulting.com.

We welcome your comments and suggestions. Please contact us at 1.703.934.3659 or by e-mail at perspectives@icfconsulting.com.