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What Is Happening to the Power Grid, and What Can Be Done about It?

In the summer of 1999, major heat waves have hit the U.S. Northeast, Mid-Atlantic, and Midwest regions, continuing a trend of hotter than normal weather this decade. The hot weather has resulted in spot power outages in several large cities, including New York and Chicago, as well as voltage reductions and conservation requests in many areas. What is happening, and what can be done about it?

Extreme hot weather highlights the issue of new power plant construction in the United States. However, even with average weather, historical and continued robust average economic growth will drive growth in electricity consumption. Electricity consumption in 1999 has increased 39 percent from 1985 levels due to new homes and businesses, as well as expansions of existing business.

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Building a Successful Voluntary Pollution Reduction Program

Traditionally, pollution reduction programs have been almost exclusively command-and-control, resulting in a number of obstacles and limitations for both regulators and the regulated community. In recent years, however, a new type of program has emerged: voluntary programs. Such domestic and international programs have proven to be successful by allowing greater innovation in methods of pollution reduction. In a recent paper published in the peer-reviewed *Journal of Cleaner Production* (Volume 7, Number 1, 1999), ICF Consulting's Michael Zatz and Shana Harbour conclude that the success of such voluntary programs as a means of encouraging pollution reduction depends largely on the program design.

They describe the following six key elements to successful design of a voluntary program:

1. Voluntary participation;
2. Flexibility in goal setting, timeline, and methods employed to achieve goals;
3. No additional reporting or monitoring requirements for participants;
4. Recognition of participants and successes;
5. Finite program life; and
6. Economically attractive returns for participating companies.

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Hot Weather, Insufficient Power (cont.)

In the meantime, power plant construction has not kept pace with growing demand. This situation has been exacerbated by uncertainty about deregulation of power generation in many states. In certain regions, such as the Midwest, generation capacity is very tight; there is little reserve margin to cover extreme weather conditions. Generation capacity will need to be constructed to cover increasing demand. Assuming continued demand growth at an average rate of 2.5 percent per annum, approximately 100 gigawatts of new construction will be required over the next five to seven years (not including replacements for retirements), which translates into approximately 300 to 400 new plants.

In addition to capacity, distribution constraints also must be considered. Some localities that experienced outages had adequate capacity. However, aging distribution systems often could not handle the strains of heat wave-induced demand. The result was distribution failures, which resulted in localized outages.

One alternative to increasing generation capacity is to reduce energy consumption. Energy efficiency can defer or reduce the need for additional capacity and reduce the strain on distribution systems. Homes and businesses that demand less electricity at peak times, as a result of energy efficiency and load management initiatives, ease the strain on the system. New approaches to energy-efficiency programs include voluntary initiatives and public-private part-

nerships. Residential and commercial power consumers benefit because they see reduced bills as a result of consuming less power at peak times, as well as less power overall. Power generators and distribution companies benefit because they can defer expensive capacity expansions and upgrades. Finally, society and the environment benefit because the need to generate fewer kilowatt-hours results in less pollution and fewer emissions of greenhouse gases. Greenhouse gases contribute to the ongoing problem of hotter weather.

A particularly successful example of such a voluntary, public-private partnership is the U.S. Environmental Protection Agency's (EPA) ENERGY STAR® programs, which promote energy efficiency to commercial enterprises and consumers. These programs have resulted in \$18.7 billion in energy bill savings for consumers and businesses. The programs also prevented more than 550 million tons of carbon emissions during the past 7.5 years; the equivalent to removing more than 4 million cars from U.S. highways. ICF Consulting has been providing technical and communications support to EPA's energy-efficiency initiatives for more than a decade, and is a leader in the design and implementation of voluntary, energy-efficiency programs, and public-private partnerships.

For more information, please e-mail us at consult@icfconsulting.com.

Building a Successful Voluntary Pollution Reduction Program (cont.)

In the paper, the authors conclude that in designing a successful voluntary pollution reduction program, it is important to remember that participants and sponsors must benefit from the program, and to recognize that the participants (typically industry) and the sponsors (typically government) have very different reasons for participating. Therefore, the program's development should be a collaborative process.

In principle, voluntary programs are meant to provide an alternative to traditional command-and-control regulation and related enforcement. Therefore, the program design must consider the current regulatory situation in the subject country. The incentives needed to encourage participation in an atmosphere of extensive regulation and strict enforcement will be very different from those needed in an atmosphere where enforcement is lacking. In countries with strong regulatory enforcement, companies might choose to participate in a voluntary program with the expectation that a voluntary program may offset the need for future regulations.

However, in a country with weaker regulatory enforcement, the threat of future regulation may be less powerful, and stronger motivators might be recognition of participants and economic attractiveness.

Using examples of activities undertaken by participants in the U.S. Environmental Protection Agency's 33/50 Program, the authors illustrate how a voluntary program can succeed in raising awareness, reducing pollution, and fostering an industry-government partnership. The authors also describe how policymakers in other countries, especially those without strong enforcement of environmental regulations, may benefit from adaptation of the lessons learned through the 33/50 Program to their countries. The authors' final conclusion is that voluntary collaboration can yield more beneficial results to both parties than regulatory confrontation, and regulators should keep in mind that often it is easier and less expensive to reward a company for voluntarily reducing pollution than to punish a company for regulatory noncompliance.

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ENERGY

The Electric Power Outlook for 1999

ICF Consulting's Bulk Power Outlook is part of a series of syndicated research studies on energy and environmental markets that provide timely, strategic analysis of market fundamentals, regulatory and institutional reforms, governmental policies, and the implications of each on the outlook for long-term market conditions and prices. These studies represent ICF Consulting's overall outlook for North American energy and environmental issues, and provide credible and informed insight into the energy future in support of our clients' strategic and tactical decision making.

For 1999, ICF Consulting's Bulk Power Outlook uncovered several key insights into regional markets, including the following:

- An unexpectedly tight Western market stands "poised on the precipice" of capacity shortfalls and price volatility in 1999 and 2000, with a significant chance that conditions will approach those experienced in the Midwest during the summer of 1998.
- The strong potential for overbuilding by generating plant developers in the Northeast and Texas markets. This optimism comes in response to current booming market conditions, but will likely lead to overcapacity and a "bust" in prices by 2003.
- An ongoing race for new power supply to keep up with burgeoning demand growth in the Midwest and Southeast markets. The slow pace of regulatory reform has blunted the incentives for new plant construction and puts these markets at risk for a continuing shortfall in available generation.

For more information, visit www.icfconsulting.com/icfconsulting/home.nsf/pages/bps.htm.

COMMUNICATIONS

Award Winning PR Campaign Used Unpaid Advertising

Successful public relations campaigns usually rely on a large budget to spread the client's message to the target audience. Challenged with an exceedingly limited budget for EPA's Lead Awareness Program, ICF Consulting delivered a superior, value-added service by leveraging unpaid advertis-

ing on District of Columbia (D.C.) Metro buses and in Metro stations to communicate EPA's message. Several million users of the D.C. Metro system have seen full-color dioramas and interior bus signs since February. ICF Consulting developed all copy and creative design for the campaign, and planned and coordinated placement of the materials. Additionally, a number of collateral materials, such as brochures and posters, have been developed and are being distributed strategically. For using innovative methods to communicate to stakeholders on a limited budget, ICF Consulting was awarded a certificate of excellence through the Public Relations Society of America, National Capital Chapter, Thoth Award annual competition, which recognizes the very best public relations programs in the D.C. metropolitan area.

ECONOMIC AND COMMUNITY DEVELOPMENT

Taking Charlotte to New Levels of Economic Performance

Charlotte, North Carolina, has seen its economy blossom over the past 20 years. Once a relatively small regional center, Charlotte now boasts of having two of the country's largest banks, professional football and basketball teams, and a soaring skyline. Community leaders attributed the success to a well-working, if narrowly based, public-private partnership whose efforts to build a modern economy had prospered.

Not satisfied with historical success, for the past year Charlotte's business leaders have been working with ICF Consulting on a strategy for Charlotte's next-generation economy. Drawing upon experience in some of the world's most dynamic economies, ICF Consulting examined the Charlotte economy from the perspective of market forces, technological innovation, and changing industry structures, and then identified several existing and emerging clusters of fast-paced growth. Business leaders from each cluster, coupled with leaders from local government and higher education, participated in a series of sharply focused discussions on the competitiveness challenges of each cluster.

The result is a plan for Charlotte's next-generation economy. The plan includes a new economic vision of growth and livability; it has 15 "Flagship Initiatives" aimed at fundamentally improving key aspects of the community's economic foundations; and it is being driven forward by a new, broader-based leadership group. With this new plan and early implementation success, community leaders see Charlotte taking the lead in tomorrow's models for economic and community development.

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INFORMATION MANAGEMENT

Improving Access and Analysis of Fishery Management Data

The Atlantic Coastal Cooperative Statistics Program (ACCSP) sought to improve the way its member agencies access and analyze fishery data by creating a Web-based data query, reporting, and analysis system. With the aid of ICF Consulting's vast experience in natural resource management and information management, fishery management profes-

sionals from Maine to Florida now can view, query, and perform analytical processing on comprehensive, Atlantic coastal fisheries data online from any computer connected to the Internet. ICF Consulting developed this prototype data warehouse that combines fishery data collected by each of the federal and state agencies and permits access to the data through an easy-to-use, Web-based analytical interface. ACCSP is a consortium of 22 federal, state, and regional agencies with diverse needs, who are responsible for managing Atlantic coastal fisheries.

Calendar of Events

September 12-14, 1999

Atlanta, GA. At the "EEI/AGA Information Technology Annual Conference/Expo," ICF Consulting is unveiling Energy Vision 2000, a Web-enabled software suite that empowers utilities and energy services companies by supporting company-wide business processes and managing critical customer data. *For more information, contact ICF Consulting's Sandi Moran at 703/934-3405. Product information is available at www.icfconsulting.com/energysolutions.*

September 13-16, 1999

Washington, D.C. At the "Transmission, Congestion, and Capacity Pricing" conference, ICF Consulting's Judah Rose will discuss reliability issues in the electric utility industry. *For more information, call 508/481-6400.*

September 29-October 1, 1999

Chicago, IL. At the "Infocast Conference: Load Profiling, Forecasting, and Market Settlement," we also are unveiling Energy Vision 2000. *For more information, contact ICF Consulting's Sandi Moran at 703/934-3405.*

Toronto, ON. ICF Consulting's Sean Collins will be speaking at the "ICM Conference: The New Electricity Markets" to discuss load profiling, forecasting, and settlement in the context of deregulation. *For more information, contact ICF Consulting's Sandi Moran at 703/934-3405.*

October 26-28, 1999

Houston, TX. ICF Consulting will exhibit at **Megawatt Daily and Coal Outlook's Power Mart '99**. We will also conduct a pre-conference seminar on understanding electricity generation. Judah Rose will discuss power price volatility and also will act as moderator for other discussion panels. *For more information, call 713/460-9200.*

November 1-3, 1999

Annapolis, MD. ICF Consulting's Peter Soyka will be copresenting "Managing Global EH&S Responsibilities: The Benefits of an Integrated Groupware Application" and Paul Bailey will be presenting "Linking Environmental, Safety, and Health to Business Metrics" at the **fifth annual symposium on EH&S Management Systems**. *For more information, contact ICF Consulting's Peter Soyka at 703/934-3619 or Paul Bailey at 703/934-3225.*

November 3-5, 1999

Washington, D.C. At the "New NOX Regulations and Power Generation in Competitive Markets" conference, ICF Consulting's John Blaney, Steven Fine, and Nathan Collamer will present, "Applying Lessons Learned from the OTR and Assessing Future Air Regulatory Uncertainty." They also will conduct the post-conference seminar on incorporating the impact of air regulations and compliance strategies into asset valuation. *For more information, call 818/888-4444.*

About ICF Consulting

ICF Consulting is one of the world's leading consulting firms assisting clients in managing the world's natural, physical, economic, and community resources in a sustainable way. The firm helps clients optimize energy resources, meet environmental challenges, foster economic and community development, enhance transportation policy and projects, and manage information technology resources. ICF Consulting's clients include firms in the energy and utility industries, all levels of government in the United States, and national and multilateral organizations throughout the world. ICF Consulting has its headquarters in Fairfax, Virginia, and has more than 750 employees. The firm has 15 other U.S. offices and 3 international offices—Toronto, Melbourne, and Moscow.

On June 30, 1999, ICF Consulting—formerly known as the ICF Kaiser Consulting Group—became an independent company. As a newly independent company, more than 700 employees of ICF Consulting celebrate the firm's 30th birthday with an abundance of fresh ideas, proven skills, and a commitment to client service. For more information, click on "What's New" on our Web site.

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

For more information about any articles, please contact us at 703/934-3659 or by e-mail at consult@icfconsulting.com.