

# Head off the train wreck of US electricity demand

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**WINSTON CHURCHILL SAID,** "Unless the intellect of a nation keeps abreast of all material improvements, the society in which that occurs is no longer progressing."

I am reminded of Sir Winston as I reflect upon the energy platform of the Democratic Party. It promotes green energy alternatives and pledges to continue drilling moratoria on federal lands in the Arctic National Wildlife Refuge in Alaska and the Outer Continental Shelf.

Energy to power the Democratic National Convention in Los Angeles was supposed to be generated from wind energy in addition to the installation of a photovoltaic solar power system that supposedly would provide 15% of the power needed for the convention.

"The Democrats are going to walk the talk in 2000 with a convention powered on 100 percent clean energy. A clean-energy convention perfectly reflects our agenda to protect the environment, to create high-paying, high-tech jobs, and to lessen our dependence on imported oil," said Senator **John Kerry** of Massachusetts.

We all support alternative energy sources, and these actions are fine as symbolic gestures. The problem is, they are not realistic and will only give Americans the false impression that alternate sources of energy in large quantities are just around the corner. They're not.

It's ironic that while all this political posturing was going on in Los Angeles, the state of California is on the brink of a breakdown in its power supply. New York and New England also have faced spot electricity shortages this year and probably will face more.

The wind and solar power demonstrated at the convention in miniature won't solve the problem of rolling brownouts in California's Silicon Valley. The real solution is increased construction of power generation plants fueled by clean-burning natural gas.

The Democratic pronouncements illuminate the tendency of public policy to lag

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technology development in our society. What do electricity, the Internet and natural gas have in common? A lot, but most of the politicians don't "get it."

Natural gas presently supplies about 25 percent of the nation's domestic energy requirements. Last year, gas consumption in the United States was

approximately 22 trillion cubic feet, or tcf.

Gas demand is skyrocketing, particularly as a clean fuel for electric-power generation. Recent studies by the **US Energy Department**, the **Gas Research Institute** and the **National Petroleum Council** indicate annual demand will grow to as much as 32 tcf over the next 15 to 20 years.

Proven gas reserves in the US have dropped due to increased demand and the very low drilling levels of the past few years. This summer, instead of being injected at a normal seasonal rate into local storage sites in the Northern States for winter use, natural gas is firing electric power plants in the torrid Gulf Coast and Southwest to run air conditioners.

Storage levels are well below where they should be this time of year, and the recent hot spell in California won't help. There may be no margin now for extended cold

weather demand, and that will lead to higher prices for home heating. The irony in all this is that, as the NPC report points out, we have a natural gas resource base adequate to meet increasing demand for many decades. But that resource has to be drilled in order to prove up the reserves. This just isn't happening fast enough, and one of the main reasons is that access to the resource base is blocked.

The Rocky Mountain region and the Gulf of Mexico hold great potential for adding to natural gas supplies, but many areas are off limits to drilling. While Canada will be stepping up gas exports to this country, according to the NPC study, our northern neighbor's contribution still won't surpass the present 14 percent of overall U.S. supply over the next 10 years.

Some 76 tcf of our natural gas resource base is restricted in offshore areas located close to where the growth in electricity is the highest, including the East and West coasts. Policy-makers have yet to note that technology has advanced to a point that we can assess and develop resources in these areas much more efficiently, and with less environmental impact, than ever before. And natural gas cannot be spilled.

New studies indicate that since 1997, US annual electricity demand has accelerated from 1.5% to 3%. A strong US economy has contributed to a substantial portion of this growth, but it is eye-opening to realize that the largest single driver behind resurgent electricity demand has been Internet and computer-related demand.

In 1998, The Internet consumed a staggering 8% of total US power consumption. If computer peripherals are added, this number swells to almost 13% of total 1998 US power consumption. This is an incredible growth rate, given that the Internet accounted for almost no power consumption a decade ago. It is safe to assume that combined Internet and computer-related electric demand now accounts for well over 15% of total electricity demand.

According to Washington, DC-based **Cyveillance**, the Internet currently consists of 2.1 billion unique, publicly available pages. At its current growth rate of 7.3 million new pages a day, the Internet will again double in size sometime in 2001. Cable modems, digital subscriber lines, optical networking infrastructures, 3G wireless, Internet gaming consoles, NetTVs, Web terminals, e-mail terminals,

screen phones and other devices are all "new economy" power consumers, the likes of which the US power grid has never seen.

As we look ahead, what do we see but more traffic, more routers, more servers and more electricity consumption. By one estimate, Internet traffic is expected to increase by over 30 times today's existing loads in the next four years.

There is an electric train coming down the track, and our policy-makers need to understand it before there's a wreck. The power industry is gearing up as fast as it can by ordering many new natural gas-fired power plants that can be built relatively quickly and efficiently. In Texas alone, about 30 gigawatts of new gas-fired plants are on the drawing boards to be on stream by 2002. Most of these plants will require large amounts of natural gas.

It is likely that demand could grow even more rapidly than the studies predict. In the short to medium term, we must have a rapid increase in drilling and a re-evaluation of our access policies. The Rocky

Mountains region and seabed resources in the Gulf of Mexico, Atlantic and Pacific hold some of the best potential.

Demand for electricity, the Internet and natural gas are interrelated. While worthy of investment for the long term and for specialized applications, green energy is not a solution in terms of electricity availability and reliability for the exploding Internet economy any time soon.

The US is the undisputed world leader in the Internet and computer-related technology. But short supplies of electricity could slow down growth in this industry and the millions of jobs it creates if government, industry and all the stakeholders do not give power generation and fuel supplies the highest priority. Texas, with its aggressive plans for increased electrical generating capacity, may be positioning itself to capture significant Internet economic growth in the near future.

#### EDITOR'S NOTE

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