

US energy picture - not a pretty sight

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“Can anyone say with a straight face that we are better off today energy-wise than we were four years ago?” That was the opening salvo fired by Red Cavaney, President and CEO of the American Petroleum Industry, at a meeting January 18th hosted by the United States Energy Industry Association in Washington, DC. The aim was to examine the state of energy and electrical power in the USA. It wasn’t necessarily a pretty picture.

“The sad fact is that the current policy framework does not deliver as promised. The net effect of implementation of current oil and natural gas policy is to decrease reliance on U.S. production and actually increase dependence on foreign imports,” said Cavaney.

The USA, the world’s energy glutton, will continue to feast. Unfortunately, the USA no longer feasts alone...China and India have waddled to the table. “China accounted for more than half of world oil demand growth in 2002 and 2003,” said Cavaney, and other industry experts anticipate the emergence of Chinese and Indian oil companies as global players over the next 10 years.

“These global realities underscore the need for action to meet the energy challenges facing the USA,” said Cavaney, pointing that doing nothing is not cheap. “What’s so difficult to understand is how we could have had four years of inaction on energy at a time when the nation has been beset with energy problems.”

To illustrate his point, Cavaney said GDP growth already lags one-half to a full percentage point due to the absence of a comprehensive energy policy. And there are many other manifestations: gasoline and diesel price spikes; declining U.S. natural gas production in the face of increased demand and resulting price volatility; soaring heating oil prices; and blackouts.

“Clearly, action on energy policy is long overdue,” Cavaney said, emphasizing that Congress needs to approve a comprehensive national energy policy that ensures diverse energy supply, promotes energy efficiency, new technologies, conservation, and environmentally compatible production. By way of solutions, Cavaney pointed to opening up Federal lands for exploration and to increased import capacity for LNG.

Predominantly in the mountain west, Alaska and offshore, lie most of the nation’s undiscovered oil and natural gas—80 and 59 % respectively, Cavaney said. Accessing these properties could result in 125 trillion cubic feet.

In addition, importing LNG is absolutely critical to meeting projected natural gas demand. According to DOE, LNG currently

provides 2 % of the nation’s natural gas, a figure that could rise to 21 % by 2025.

A critical issue that emerged during the 1990s was the rise in natural gas price which has jumped from \$2 mcf (million cubic feet) to \$5 to \$6 in early 2005 with occasional spikes over \$10. The U.S. has proven resources that would last 60 years at the current rate of consumption, says David Parker, President & CEO of the American Gas Association. “We are not running out of natural gas, we are running out of the ability to access that natural gas. How do we allow our producers to go in and access that natural gas so it then can be developed and provided to our customers?”

Reviewing the drilling moratoria that exist for offshore properties, expediting the permit process for the development of coalbed methane and the siting of new LNG facilities as well as an Alaskan gas line and the development of methane hydrate areas are some of the near- and long-term options suggested for the U.S. by Mr. Parker.

Looking ahead to 2020 and 2025, Parker anticipates that power generation will increase to about 25 % of the total use of natural gas—i.e., two-thirds of the total projected growth in its use will be for generating electric power.

Skip Horvath, President & CEO of the Natural Gas Supply Association, emphasized the need for “letting the market work.” “Customers are clearly choosing their fuels based on their available options, including price and reliability, as the market has presented it,” he said. As an example he pointed to recent growing interest in coal gasification from investors and from electric utilities as the market decides what are viable options. “That is the way it should be.”

It should be that way according to Horvath because it presents an opportunity to save consumers money. “We can save consumers \$300 billion in natural gas prices alone over the next 20 years if we could just increase the domestic supply of natural gas.” Instead, he says, the U.S. de facto national policy suppresses supply and promotes demand for natural gas and other fuels.

Horvath adds that a balanced future that includes increased energy efficiency, immediate development of new resources, and flexibility in fuel choice, according to a National Petroleum Council study, could save consumers a trillion dollars in natural gas costs alone over the next 20 years. “That’s a lot of money. \$300 billion of that was on the supply side, but \$700 billion is from efficiency—using less natural gas. That’s good because that’s the market at work.”

Thomas Kuhn, President & CEO of the Edison Electric Institute whose members produce and supply more than three-quarters of the electric power in the USA, reinforced Horvath's focus on competition and costs by saying that corporate America's earnings are now suffering from high energy costs. Revenues are up, but earnings are down because of higher energy costs in many industries. "Energy can be a major stopper of the economy," said Kuhn. "If people are not paying attention to that, we are going to suffer the consequences."

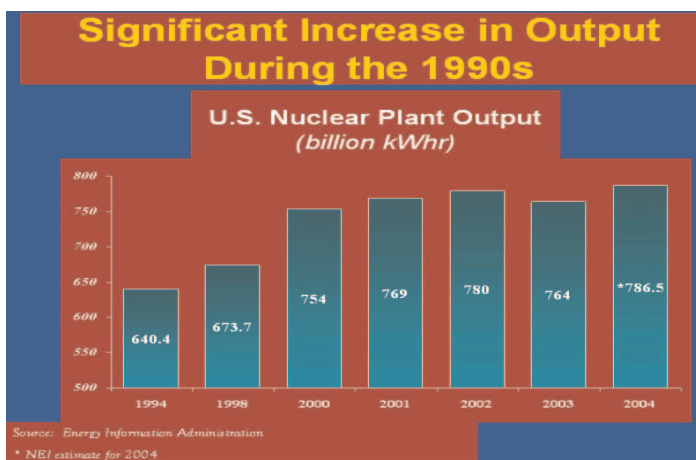
What Kuhn says his constituents are paying greater attention to is fuel diversity. Starting with energy efficiency they need coal, natural gas, a new generation of nuclear plants and they need to re-license hydro plants and to continue to do more with renewable energy. "We need just about everything, and that is the ideal and the beauty of fuel diversity in that energy bill."

Kuhn also emphasized the need for mandatory reliability standards, expansion of the transmission system, repeal of PUCA, and working closely with FERC commissioners to develop competitive wholesale markets...also multi-emissions legislation. Since 1980, the industry has reduced sulfur and nitrogen by 40 % and it is talking about a further 70 % reduction in the next 15 years at a cost of billions of dollars. Multi-emissions legislation will clear a long-term future for coal while relieving pressure on natural gas.

Nuclear power provides 20 % of US electricity--a percentage nuclear power has maintained for the past ten years thanks to increased capacity factors. By operating at capacity levels over 90 %, costs have declined steadily, leaving U.S. nuclear plants the low-cost producers (except hydro).

Not surprisingly then, operators are renewing licenses for existing facilities. The Atomic Energy Act authorizes the renewal of the original 40 year license for another 20 years and Angelina Howard, Executive VP of the Nuclear Energy Institute, said she expects essentially all US nuclear plants to go through the process. To date, 30 license renewals have been granted, 16 are currently being reviewed, and another 22 are planning to renew. Of the 35 that have not declared their intention to renew, most are not old enough to do so.

While re-licensing will keep plants in operation, solving the disposal problem will open opportunities for new construction. Already, U.S. DOE has invested \$6 billion over the past 20 years assessing the long-term safety and suitability of the Yucca Mountain site in Nevada which it did in late 2001. Congress approved the site in 2002, and although Nevada's leaders continue to oppose the site, Howard relates that citizens of that state are taking a more realistic



view of the inevitability of the repository.

And like the citizens of Nevada, around 67 % of the public at large favor nuclear energy for generating electricity. "Over 60 % in our latest polling favor building new nuclear plants at existing nuclear power plant sites," adds Howard. "We see the public adopting a reasoned and thoughtful approach as they perceive nuclear energy as reliable, affordable, and also part of the nation's diversity--and one that represents a substantial, non-emitting source of electricity generation."

These sentiments have inspired the industry to present advanced versions of the light water reactors as part of the business case for new electrical generation in the USA with costs between \$1,000 to \$1,200 per kW. "That makes nuclear energy competitive with the gas-fired combined-cycle plants with gas delivered at \$4 to \$5 per million Btu," said Howard who pointed out that January 2005 prices were higher than that. "It also makes us competitive with the new base-load coal-fired capacity of either both conventional pulverized coal or clean coal technologies."

As a result, Dominion, Excelon, and Entergy are seeking permits for three sites at existing power plant sites while three consortia are examining the feasibility of other existing sites. Competitiveness notwithstanding, Howard advocated for some investment stimulus for the first few new nuclear plants to go forward. "It is an important part of the process," says Howard, "to just provide a small amount of incentive to jump-start the construction process."

Michael Eckhart, President of the American Council on Renewable Energy, (ACORE), said renewables provide 6% of the nation's energy, with new renewables responsible for 2-3%. Renewables appears increasingly competitive, he said.

"The energy supply and national security issues in our country argue for renewables," said Eckhart who not only addressed the environmental aspects of renewable but also pointed to Germany where renewables provided an engine for economic growth. "The wind and solar industry are the number one and number two job creators there. We can do the same thing here."

Eckhart's describes his agenda for renewables as not pushing the technologies, rather pulling them into the market by addressing societal problems. "It's like the shift from sales to marketing. When you're selling something, you're selling a product. When you're marketing, you're solving a customer problem," he said. "We're shifting from pushing our technologies to solving our national problems, national energy supply, security, environment and health, climate change, economic growth, investment, and job creation."

Bruce Josten, Executive Vice President, U.S. Chamber of Commerce & Spokesperson for the Alliance for Energy & Economic Growth described the formation of the Alliance four years ago, with the sole purpose of enacting a comprehensive national energy policy for the country.

"Since May 2001 we have experienced energy shortages in California, blackouts in New York City and the Mid-West. The cost of oil has reached \$55 a barrel and the price of natural gas has doubled. As a nation, we have lost valuable time...Congress cannot continue to dodge this issue."

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