

Energy Security in the 21st Century

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► What is the best approach to understanding energy security?

The starting point for any discussion about energy security is diversification. That means having alternative supplies, resilience in the system, and multiple options so that you have shock absorbers and are not vulnerable to any specific thing that happens in world energy markets. It really goes back to what changed in the first 50 years of the oil business. In that earlier period, the oil business was essentially an illumination business, and later it became a business about transportation and mobility.

On the eve of the First World War, Winston Churchill made the historic decision to convert the British Navy from coal to oil to gain speed over the German Navy. People criticized him at the time for going from depending upon safe Welsh coal to depending upon oil from overseas. And his answer about oil security – although he didn't use that term at that time – was that safety and security in terms of oil was in variety alone. I think that is still the starting principle. You don't want to be too dependent on any single source.



How have perceptions about energy security evolved in the past 30 years?

The world has changed much since the modern concept of energy security emerged in the 1970s. But agreeing on its importance is not the same as agreeing on what it means. Consuming countries say they want security of supply, meaning reliability and availability of energy at reasonable prices. Exporting countries talk about security of demand, by which they mean sufficient access to markets and consumers to justify future investment and protect their national revenues.

For Russia, energy security is about the state's retaking control of the commanding heights of the energy industry and extending that control downstream, over the critical export pipelines that provide a substantial part of government revenues.

For Europe, today's concerns center on natural gas and on the debate about dependence on gas from Russia.

For Japan, the question is how to compensate for the absence of virtually any domestic resources while running the world's second-largest economy.

For China and India, it is ensuring that energy does not hold back the economic growth they need for development and

to avoid social turbulence.

Here in the United States, energy security has had a double focus: One is offsetting any future Middle East-style disruptions. The other is achieving that often-repeated goal of "energy independence" – first set forth by Richard Nixon in 1973 – even as the United States in the years since has gone from importing a third of its oil to nearly 60 percent. But "independence" does not address the reality – that we are part of global markets in energy just as we are in so many other ways. The real question is how to assure a secure, reliable, diversified and resilient flow of energy.

What are the policies and principles that underpin energy security?

Some of them are embedded in the security system that was set up in the 1970s to either avoid or mitigate disruptions such as the 1973 oil embargo.

There was a further objective, now generally forgotten, to avoid the kind of bruising political and economic scramble that threatened to fracture the Western alliance in the 1970s. This system included the establishment of the International Energy Agency, the creation of emergency stockpiles such as the Strategic Petroleum Reserve, increased communication and

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Dr. Daniel Yergin is a highly respected authority on international politics and economics and on energy. He is a Pulitzer Prize winner and recipient of the United States Energy Award for "lifelong achievements in energy and the promotion of international understanding." In addition, he is both a world-recognized author and a business leader, as founder and chairman of CERA – Cambridge Energy Research Associates – one of the world's leading consulting and research firms in its field. He is also executive vice president of IHS, CERA's parent company.

Yergin received the Pulitzer Prize for his work *The Prize: The Epic Quest for Oil, Money and Power*, which became a number-one best seller and was made into an eight-hour PBS series seen by 20 million people in the United States. The book has been translated into 12 languages.

He is a member of the Board of the United States Energy Association and a member of the National Petroleum Council, and this year became the only foreign member of the Russian Academy of Oil and Gas. In November 2005, he was awarded the Medal of the President of the Republic of Italy for combining "an understanding of the dynamics of the market with a broad view of the forces of geopolitics as he seeks to point the way to the positive outcomes for the world community."

Of his most recent book, *Commanding Heights: The Battle for the World Economy*, the *Wall Street Journal* said, "No one could ask for a better account of the world's political and economic destiny since World War II." It has been translated into 13 languages. Yergin led the team that turned it into a six-hour PBS program – the major PBS television series on globalization.

Dr. Daniel Yergin has been named one of the 500 most influential people in the United States in the field of foreign policy by the World Affairs Councils of America. He received his BA from Yale University and his PhD from Cambridge University, where he was a Marshall Scholar.

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much better information. It also involved procedures for sharing supplies in the event of a disruption, such as those that were activated briefly to offset lost supplies after Hurricanes Katrina and Rita.

How has growth in international trade affected perceptions about energy security?

Although we could say we get oil from this or that country, most of the oil we import to the United States comes from the Western Hemisphere. There is still only one world oil market. We are a part of that market and it is a very significant share of global trade.

It is amazing how rapidly world trade has grown, how new connections among countries have been formed that didn’t exist 10 or 15 years ago, and how world trade is growing faster than the world economy. Energy is a major part of that. Countries that were not major players in the global market a decade ago are now very important players. And of course, China is at the top of that list.

Why have China’s economy and demand for energy expanded so rapidly?

Deng Xiaoping drove the radical changes that transformed China from being a centrally planned command economy that was destined to be poor forever and turned it into the biggest dynamic

new force in the world economy. He opened China to the world and began the process to gain its entry into global markets.

One of the great issues of our time is how China gets integrated in all the different dimensions into the global community. When Deng Xiaoping looked around at Asia and saw the economic miracles that were occurring among his more market-oriented, internationally open neighbors, he decided to make China part of the global economy. The impact of what China is becoming is already enormous, especially its growing demand for energy.

What environmental benefits flow to the countries that adopt market economies?

Countries that are economically healthy and growing are able to devote more resources to improving the environment and meeting environmental needs than poor, struggling countries. You can see it today in the developing world, where the basic questions are food and survival and shelter. Economically healthy countries are able to clean up the air, the water and the land. Unfortunately, many people in prosperous countries seem to have lost sight of what has actually been achieved.

You have to separate the perceptions from the reality when you compare the U.S. today with where it was 30 years ago. This is a far cleaner environment,

a far healthier environment, and immense progress has been made. Today’s new car puts out only a tiny fraction of the emissions that a new car did in 1973. But despite this tremendous progress, public perceptions do not always keep pace with the facts. And certainly, on a global basis, there is a big environmental agenda to be addressed.

How can greater efficiency in the way we use energy resources enhance our security?

Markets are very powerful in the messages they send, and that’s why we see cycles. In a very real sense, energy efficiency, energy productivity and conservation all can be viewed as elements of our resource base. In the ’70s and ’80s we saved about 2 million barrels a day by improving the energy efficiency of our automobiles. That’s a very powerful lesson about the importance of both supply responses and demand responses. As has been said, price is the great communicator of supply and demand. I agree.

What role does conservation play?

It’s striking to see what has actually occurred in the past 30 years. The United States is about twice as energy efficient as it was in the 1970s. People are often shocked to hear that because it doesn’t fit the expectation. A European asked me recently why the United States

hasn’t done anything on conservation. I said, “We have.” It isn’t vast lifestyles changes in how we or the Europeans or the Japanese live. It is the march of technology, behavioral changes, and new investment that have helped us use energy more wisely and efficiently.

What factors will influence the energy supply-and-demand picture in the coming decades?

What we are seeing in the world today is a continuing cycle of supply and demand that reflects larger forces at work. Demand has been stronger because of globalization and growing international trade and commerce. It’s because of the success of economic development and because hundreds of millions of people who were poor are entering the middle class.

What Americans see at the gasoline pump reflects changes that are happening around the world. Supply and demand will also be affected by geopolitics and by what happens with technology, which continues to push the potential of new hydrocarbons, new oil and new natural gas supplies.

Technology will also present us with a wide range of alternatives, just as it has been central to the success of the energy business since its inception. In future years, all that will be included in the story of supply and demand. **theLamp**