

Energy and GDP are closely tied in US economy

PEOPLE AT THE luncheon during IADC's Annual Meeting in September might have thought they were back in college when **Dr Ron Oligney** presented his take on the colorful energy business with his keynote address.

Dr Oligney, a professor at the **University of Houston** and Director of the **Texas Energy Center**, provided an enlightening and entertaining "lecture" during the keynote address.

He pointed out that energy consumption is tied closely to income per capita, noting the importance of energy in creating a country's wealth and explaining that energy conservation is not necessarily a viable solution as it will likely also reduce per capita income.

OIL AND EMPLOYMENT

He began his lecture by noting the importance and connectivity of high employment and oil prices.

Plotting employment growth from the mid-1960s to present, employment grew from 60 million then to 140 million people presently in the US.

Dr Oligney then noted the major energy supply disruptions, defined as anything greater than 2 million barrels per day during the same time period.

These energy supply disruptions included the six day war in the Middle East in 1966; the Arab oil embargo in 1973; the Iran Revolution in 1979 followed closely by the Iran/Iraq war; in 1991 when Iraq invaded Kuwait; OPEC reduced supply in 1999; and then the natural gas dis-

ruption in California in 2000.

"For the entire OPEC era," Dr Oligney noted, "there has never been a negative job growth period that wasn't preceded 3-12 months by a major oil supply crunch."

Two negative job growth rates resulted in about 10 million job losses. The first was the Gulf War in 1991 when 4 million barrels of oil per day were lost from the market, albeit for only a short period. However, 10 million jobs were lost as a result.

The 1999 OPEC supply cuts disrupted employment by about 10 million workers also, and the number is actually closer to 20 million people with the acceleration of events since September 11, 2001, Dr Oligney said.

"How many things can disrupt 2 million barrels a day on the world market?" he asks. "That's the major issue."

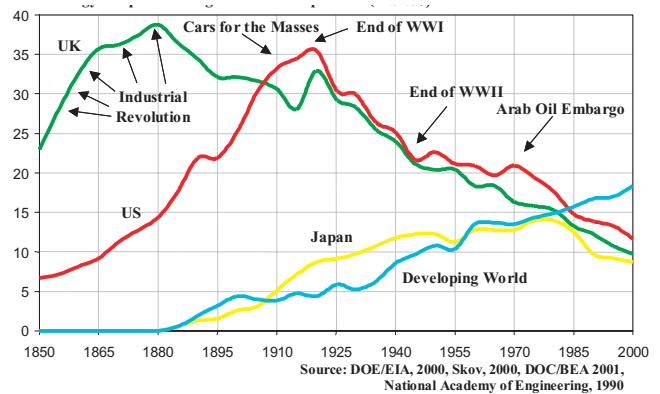
"We are moving 120 million barrels per day and if you include gas, a 2 million barrel disruption is enough to cost 10 million jobs in America. That is a significant issue for the country."

CONSUMPTION AND GDP

Dr Oligney pointed out that energy consumption per dollar of gross domestic product (GDP) is declining in the US. In other words, more GDP is created per barrel of oil consumed today than previously.

However, he also points out that most people believe that means US energy dependence is also declining. In fact, he says, that is exactly backward.

Energy Consumption per Dollar of GDP



"If you can create more GDP with one barrel of oil," Dr Oligney said, "then what that means is your efficiency must be going up and you can, in fact, create more and more economy with one barrel."

That means that the loss of one barrel of oil in today's economy is much more important than previously when the economy wasn't as efficient.

"Dependency is measured with how much you create with each barrel," he continued, "and we create a whole lot of economy with one barrel in this country."

Energy consumption is also closely related to per capita income. The US ranks as the world's wealthiest nation in terms of per capita income as well as per capita oil consumption in the number of barrels per year.

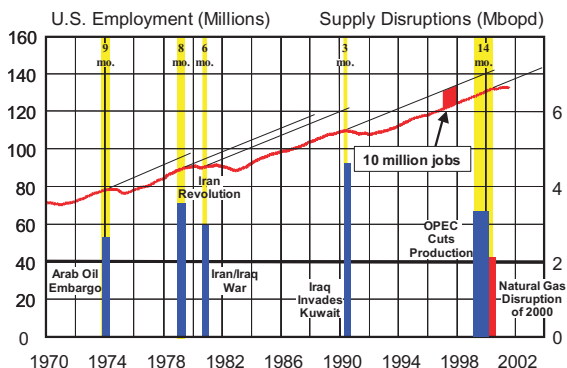
Conversely, India, according to Dr Oligney, is at the bottom of per capita income and is also at the bottom of per capita energy consumption. From India to the United States is a linear correlation.

"You should be thoughtful in conservation," Dr Oligney said, "but it won't solve the problem."

The question is how badly people want to solve the problem.

"Would you like to solve it in India where they don't even have a refrigerator to keep medicine cold to save their child from diarrhea," Dr Oligney asked, "while in the US we have \$3,000 environmentally friendly bicycles and we

US Employment and Major Energy Supply Disruptions in OPEC Era



say we are going to save the world.”

“Energy consumption is the real deal,” he continued. “People are dying over the lack of energy.”

”There is no way to get out of this by burning less energy. That is not the solution. Conservation will not solve any problems.”

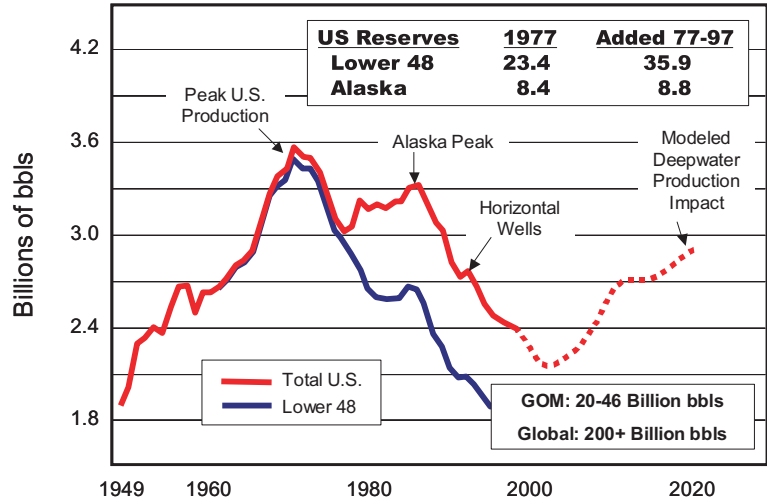
DEEPWATER

“Deepwater is absolutely cutting edge and there is a lot of money to be made there,” Dr Oligney said.

In 1999 he wrote an opinion piece in the Houston Chronicle that said deepwater exploration and production is in the national interest, and that the Gulf of Mexico is the one place where the industry has access to deepwater areas.

The deepwater Gulf of Mexico has several times the resources of Alaska, Dr Oligney said, but technology is restricting the industry’s access.

Ultra-deepwater market potential



Partly as a result, Dr Oligney and the industry were involved in the Offshore Technology Roadmap for the Ultra Deepwater Gulf of Mexico.

The roadmap explained what was nec-

essary to dramatically reduce the cost of deepwater exploration and production that would unleash “in our estimation somewhere between \$100 and \$200 billion of new capital.”