



## SECURING U.S. ENERGY IN A CHANGING WORLD

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### **CHAS. W. FREEMAN, JR., president, Middle East Policy Council**

As the election campaign began to develop, energy issues, given the rising price of oil and gas, seemed to loom larger and larger. For anyone who follows these issues closely, however, much of the public discussion was at best disgraceful and at worst appalling in terms of its premises. Therefore, we thought it would be useful to have an informed discussion of energy, oil and gas. It's certainly appropriate for the Middle East Policy Council to convene such a meeting since energy is at the center of U.S.-Arab relations. Many milestones in that centerpiece of the relationship exist. Saudi Aramco, the largest oil company in the world, is in a sense a monument to a unique experiment of the private-sector integrated development of an entire region of the Arab world. Aramco took the lead in midwifing the prosperity and modernization of an entire region. Saudi Arabia and Kuwait, the United Arab Emirates, and, of course, Qatar through its gas revenues, financed the first Gulf War. So this is a region of great wealth whose recirculation of petrodollars in the international economic system is very important to us.

In the run-up to our current misadventures in Iraq, Deputy Secretary of Defense Paul Wolfowitz famously demonstrated his ignorance of the region and lack of understanding of oil economics when he predicted that the Iraqi oil industry would finance Iraq's reconstruction and pay for the costs of the war. He managed to persuade a credulous administration and Congress of this, but it proved to be fundamentally in error.

OPEC and Arab oil producers generally have emerged as the stereotypical villains of Hollywood films and the morality plays of American politics. John Kerry, the Democratic candidate, can't make a campaign speech without taking a slap-shot or two at the Saudi royal family. It is a matter of faith in our body politic that dependence on the Middle East as a source of oil is peculiarly dangerous in security terms, notwithstanding the fact that in recent years all of the disruptions, other than those in occupied Iraq, have come from other places, like Nigeria and Venezuela. Now there are various schemes being put about for achieving some measure of so-called energy independence, though of course only if it



costs the consumers of oil nothing and is thus politically cost-free.

Behind all these issues rests a whole series of questions. Are oil prices in fact controlled by an evil cabal that can move them up and down at will? Are oil and gas supplies in the oil and gas trade truly bilateral so that one has to worry about whether one is “dependent” on a particular source, or is that not an accurate description of the market? Are the oil companies the manipulative monsters that the left wing would have us believe? Is Michael Moore right about this element of the Bush administration’s policy inspiration? Who makes money on oil and gas and how? And, more important, what are the trends in production and in our consumption of energy? Are high prices here to stay, or are they a flash in the pan? What are the prospects in the United States for a measure of independence, not just from the Middle East but from imports of oil and gas?

**FRANK A. VERRASTRO, director, Energy Program, Center for Strategic and International Studies**

Let me begin with a bit of stage setting for our discussion this morning. Chas. spoke about energy independence, and that has indeed been the focus of a lot of the current political discussion. I would argue that what we are really dealing with is energy interdependence; it’s a global economy. So I’m going to start with a view from 30,000 feet of the world supply-demand balance and then bring it back home to the United States and discuss how we secure U.S. energy in a changing world.

There’s been a lot of discussion about energy and the critical role it plays in our global economy and its implications for the environment, geopolitics and capital flows. Given the critical importance of energy as a strategic commodity, the question is posed as to whether or not we should be managing it differently. And if so, can we do it, and do we have the political will to do it?

As we moved into the twenty-first century, we were using the same five fuel sources that we used in the twentieth century: oil, gas, coal and nuclear, as well as that broad grouping of what we call renewables, as aggregated by the EIA and IEA. At the turn of the century, 85 percent of our fuel needs were met with fossil fuels, with oil being king and renewables and nuclear playing only very minor roles. So when you talk about the growth of renewables, think about it coming from a very small base even though the increase may be significant.

In North America, since we make up about 30 percent of the market, the numbers are almost essentially the same: 85-percent fossil fuels. As you go to Western Europe, because of the increased use of nuclear, the amount of coal and fossil fuels is down, but when you look at the developing countries, the use of fossil fuels is up over 90 percent. More important, if you look out to 2025, you find that the numbers don’t change much. The relative demand (percentages) of the various fuels basically stays the same. Since this is a very short time period in which to bring on new production or alternative sources – absent an economic catastrophe or a foreign-policy problem, environmental catastrophe or a technological breakthrough – this is basically the forecast.

When you look at the developing nations, the percentage use of fossil fuels actually increases slightly although the total energy usage actually doubles. This causes concerns not



only for capital flows but also for emissions, because 70 percent of the new emissions growth is going to come from the developing world. No matter where you are on global climate change, you're going to have to deal with hyperurbanization and the emissions problem.

How do we consume this energy? About 40 percent worldwide goes to power generation and another 20 percent to transportation. Half the world's oil – that's half of an 80-million-barrel-a-day market – goes for transportation uses. Unless you can attack those two uses, there's no way of measurably reducing energy demand.

Now let's look at the United States. We have about 5 percent of the population and produce 17 percent of the energy, and yet we consume almost a quarter of the world's energy. We're also responsible for about a quarter of the world's GDP. The EIA forecast indicates that energy usage in this country will predictably increase over the next 20 years. If you look at petroleum specifically, all forms of fuel except for the bottom of the barrel also increase, but the gasoline total goes up dramatically – after having been stable over the last 10 or 15 years. If domestic oil production continues going down, and refineries are running at 96-percent utilization, we're going to rely increasingly on imported oil, both crude and, in the future, refined product.

Oil import levels will range between 65 and 75 percent of total demand by 2025. The natural gas situation is almost the same. After a significant increase in domestic gas production, we've plateaued and are now in the decline stage. If demand continues to grow – and we're projecting an increased use of natural gas – we're looking at increased imports of liquefied natural gas (LNG), which poses both security questions and, I would argue, some foreign-policy questions as well.

So, who has the energy resources we consume? Two-thirds of the proven oil resources are in the Middle East, though there are other non-OPEC producers that continue to play significant roles: the United States, Russia, Mexico, Norway, etc. The international oil companies are involved in a lot of places around the world, mostly in non-OPEC countries. But, when we look at some of the OPEC production, we find that we have the least transparency and the biggest problem with actually getting a handle on reserve numbers. Most of our forecasts are demand-based; that is, we add up the demand numbers over time and then plug in needed supply. Bottom-up supply models are few and far between, which should cause some concern.

When we look at proven global reserves for natural gas, we find a decidedly different cast of characters. Russia, Iran and Qatar contain almost 60 percent of the world's natural-gas reserves. So when people talk about increasing supplies of LNG, look at the sources. The United States may be able to get some supply from Trinidad and Tobago, for example, but when you start looking down the list of who has natural gas, you immediately see two things: (1) there's a lot of gas in the world, and (2) it needs to be moved to get to consumption centers. If you can't move it via overland pipelines, liquefying it and moving it in tankers is probably the way to go. As for coal reserves, the United States is frequently described as the Saudi Arabia of coal. To the extent we are able to get a clean coal technology and effectively deal with the environmental concerns related to mining and mining waste, we could improve coal's role in power generation, reduce our gas demand and improve efficiency.



Using 2002 numbers – the 2003 data isn't available yet – we can see who the major consumers in the oil market are. China has recently moved into the number-two spot, both in terms of consumption (behind the United States) and also in imports. Chinese imports this year have grown about 40 percent over last year's (2003) levels.

There's been a lot of discussion about Saudi Arabia being overtaken by Russia in terms of production. Russia's consumption is about 2.5 million barrels a day (mmb/d) so even if they're on parity in terms of production, their export capability is less in Russia than it is in Saudi Arabia. Saudi Arabia is probably producing about 9.7 mmb/d now with capacity to go to 10.5 mmb/d. Russia is probably capped out, at least currently, at about 9.5 mmb/d.

There's a common misconception, partly through political campaigns, that the United States is overly reliant on Middle East oil or, more specifically, on Saudi oil. In fact, three of the top four suppliers to the United States are in the Western Hemisphere – Canada, Mexico and Venezuela – and Nigeria is threatening to displace Saudi Arabia as a major U.S. supplier of crude.

At CSIS, when we look at the major oil-producer players going forward, we can easily identify Saudi Arabia and Russia. Russia has vast oil and gas resources, as we've shown. But there's an infrastructure problem, and the domestic industry is controlled by state-owned monopolies. Exportability is going to be an issue going forward. There are also ethnic conflict, environmental questions, regional instability, and concerns over democracy and reform and the pace thereof.

As for Iraq, the speculation early on within the administration was that Iraq would soon become a major oil producer and exporter and that oil export revenues would fund the reconstruction effort. A lot of people outside of government told the Defense Department and the State Department early on that it was going to be years before Iraq was a reliable supplier. We believe there's reservoir damage to the oilfields both in the south (Rumaila) and in the north (Kirkuk). The country is saddled with significant external debt. There are obvious ongoing governance and security issues. Pipelines in Iraq have been blown up over 150 times since the president's declaration of the cessation of major hostilities last May.

There are also other groups of emerging producers. For example, the Caspian region will see additional oil coming on in mid-2005, when the Baku-Ceyhan pipeline is complete. Kazakhstan and Azerbaijan have substantial resources to put in the market. The key here has always been the need for infrastructure to get the oil out of the Caspian region and move it to a hard-currency market. Libya has just put tenders on the table. There's a chance that they can increase production, but the terms in the past have been really difficult, and sanctions have retarded their development over time. But Libya is now an area where companies are starting to look to go. West Africa is another area. Unconventional supplies in Canada and Venezuela are significant, but the Canadian supplies of heavy oil will require a lot of water and natural gas. And then, of course, we have LNG production.

Consumer wildcards are the United States and Asia at this point. There has been a lot of discussion of China, but actually if you look at India, Korea and China together, a huge



portion of internal consumption has increased their demand for oil. Now there is a geopolitical question as to whether the United States will compete with China, for example, over Middle East oil supplies in the future. Geopolitically, do you want the Middle East and China, or Russia and Asia to form diplomatic alliances and bilateral relationships? What would that do to the United States? People are increasingly concerned about what this will mean for our foreign-policy choices down the road.

More important, as you go forward in time, energy dependence in Japan and China increases. Part of this supply will come from Russia, but a lot of it will come from the Middle East. Only about a week and a half ago we saw that the Chinese and the Saudis decided to engage in diplomatic relations and, on a consultative basis, to decide what economic objectives and bilateral relations they want to pursue.

We think that the most recent period in the past has been characterized by volatile oil prices, but it's been the rule, not the exception. If you go back 30 years, we've had a variety of price spikes, mostly tied to disruptions and political upheaval. Some are targeted embargoes. The big price drop after 1980 was a result of overproduction. With high prices, demand came down and prices plummeted right after that. That's something we see over and over again. In the oil patch, it's a situation where investments made seven to ten years ago bring on production today. Periods of high prices usually bring on efficiency, technology and reduced demand, which then cause lower prices going forward.

These are the "pillars" of U.S. security policy, tools the United States has relied on for about the past 30 years. One, we've looked at increasing supply, both domestically and internationally, to the point of actually increasing investment in infrastructure to move oil out of the Caspian. Two, we advocate improved efficiency and conservation, fuel switching and the like, though we haven't done much in terms of demand restraint recently because it's not politically popular. Three, we maintain strategic stockpiles – the strategic petroleum reserve (SPR) was formed in the aftermath of the targeted embargo in 1973. Four, finally, we have come to rely on Saudi Arabia to moderate prices and maintain spare capacity. Five, and then, as a last resort, to protect the supply lines we call on the military.

With respect to global oil supply availability, it's interesting to note that in 1979, 25 years ago, OPEC's capacity was 38-39 mmb/d. Today it's about 31 mmb/d. If you look for the loss of the 8 mmb/d, you need to look no further than Iran, Iraq and Libya. Dramatic political change, wars, instability and sanctions have caused it. I would suggest that, if part of our energy policy were to increase supplies across the world and it wasn't subordinate to foreign policy, economic policy, environmental policy and local politics, we'd have a different world.

As for oil's role in the financial market, just to give you an idea of what we're talking about, there's an 80-mmb/d market, but about 35 million barrels are actually transferred on a daily basis. At current prices, that's a billion-and-a-half dollars a day – a remarkable cash flow. OPEC's net export revenues over this period have gone from \$30 billion to \$300 billion. The GCC countries estimate that they'll have export revenues in excess of \$200 billion this year alone. Revenues have doubled for every OPEC member in the last 10 years, and they've actually tripled for Qatar.

For those of you who think that we're still in the \$22-\$28 price range, since 2001, this



trajectory has been going up. We can talk about speculation and the role it's had on price, but over the last five years we've been increasing prices, and that band of \$22-\$28 a barrel is no longer operative.

**AMB. FREEMAN:** Three statements that you made struck me. One, demand drives supply; two, when prices rise, demand goes down; and three, we are in the ironic situation now, after having castigated OPEC, of demanding that OPEC come to our rescue with additional supply.

**JAMES A. PLACKE, senior associate, Cambridge Energy Research Associates**

I'm going to talk about trends in U.S. oil-import dependence, then focus specifically on the Middle East since that's the area that draws so much political heat, and then conclude with some comments about OPEC's unsuccessful struggle to control oil prices.

The United States became a net crude-oil importer in 1974. Since that time we've become increasingly dependent on foreign sources of oil. But you really need to take into account not just oil but the liquids that are added to oil, such as natural gas liquids, condensate and so on. On that basis, the United States became 50 percent dependent on foreign imports of hydrocarbon liquids in 1993. U.S. consumption in '74 was 16.5 mmb/d; now it's 25 percent greater at 20.5 mmb/d. During this decade, which is only four years old, U.S. crude-oil production has stabilized and will even increase as we move further into the decade, with growing production from the deep-water Gulf of Mexico. That's probably our last large reserve to be exploited, unless we do many more intelligent things with Alaska than we've done till now – and I don't mean just exploiting the Alaska National Wildlife Refuge. There are a lot of other things that should be done, in particular a gas pipeline from Alaska, but that's a whole other set of issues.

Even though our crude-oil production domestically will increase slightly – less than 100,000 barrels a day over the course of this decade – total liquids production is going to continue to decline for the reason that Frank suggested. Our natural-gas production domestically – again, Alaska – is in decline and has been for some time. Therefore, the total liquids, including those extracted from natural gas, continue to drop. So our dependence on foreign sources is inevitably going to grow unless we suddenly cut back consumption, and that doesn't seem very likely. By the end of the decade, crude-oil production itself will again go into decline, and that will be the long-term trend. There is nothing really on the horizon that I can see at this point, or anyone that I have spoken with can see, that's likely to turn that around.

Meanwhile, as Frank has already indicated, North American gas will become less and less available as more Canadian gas has to be used to extract oil from the tar sands. I was very pleased to see on one of Frank's slides that the reserve figure for Canada at 180 billion barrels, especially since it's graven in stone in this town that Iraq is this enormous treasure trove of crude oil. Canada is much bigger than Iraq by at least 100 billion barrels. The reason for that is the tar sands in Western Canada are now commercially viable. Twenty-five years ago, when production began there, that was not the case. They were heavily subsidized both by the Canadian national government and by the province of Alberta. They're now commercial, so you can put them down as booked reserves. That's



made an enormous difference. But it's sand; it's not liquid oil. Extracting oil from it requires both a lot of gas and a lot of water.

So our imports of natural gas from Canada are going to decline rather than grow. U.S. consumption of gas, of course, will continue to grow, especially for electric power, and that means imports of LNG via tanker. And, as Frank also has already indicated, you tend to find gas in the same places where you find oil, so our dependence is not going to diversify; it is going to narrow, and it is going to increase.

The only way that might be countered is, first, something that we began seriously in the 1970s and then forgot about by the mid-'80s, and that is increasing energy efficiency. Today, fortunately, it takes about one-half as much energy to produce a given unit of GDP as it did shortly after the first oil shock in 1973-74. That's why, as prices have escalated so sharply over the last year, the economic effects have been manageable, though not inconsequential. We simply don't use as much energy to produce the output that we're now putting on the market. But we really stopped expanding our energy efficiency by about 1988. Oil prices had dropped, and there was plenty of oil on the market, so the incentives went away. The consequence is that we've forgotten how to do that. We should turn back to it.

The second thing would be a consumption shift away from oil and gas, which could be forced by regulation, but that's very unlikely and probably not wise. Ultimately I think the answer is technological change, but probably the hardest thing to predict – certainly in the oil sector – is technological change. We know it's going to happen; we know the general direction in which it's likely to move. We don't know what the technology is going to be, however, and we don't know when the breakthrough is going to happen. Is it going to be hydrogen fuel cells? Maybe for stationary use in buildings like this or large apartment blocks, shopping centers and so forth, but probably not automobiles. At least that's what the auto industry thinks. What is it going to be – something like what Toyota has already done with the Prius? Maybe. We'll see more of those on the road, I think. There is an array of possibilities, and it's the market that will ultimately select which one – or which combination of them – prevails.

Let me turn to U.S. dependence on Middle East oil. U.S. imports of Middle East oil actually began to decline with the unrest in Iran in 1979 that preceded the overthrow of the shah in the following year. Then the Iran-Iraq War followed in 1980, taking more Middle East oil off the market, and we simply began to expand imports from other sources, including the North Sea, which is now also in decline. Saudi Arabia, as a deliberate policy, had maintained itself pretty consistently as the number-one crude oil supplier to the United States – except for a little dip in the late '90s, when they slipped slightly. Beyond that, Saudi Arabia consciously maintained itself as the number-one crude-oil supplier to the United States, viewing that as important to the “special relationship,” as it's often been termed.

Since late 2002, Saudi oil exports to the United States have dropped like a rock. What happened at the end of 2002? We were getting ready to invade Iraq, and the Saudis were less than enthusiastic about that. Is this political retribution? No. It's simply their recognition of the political fact that the special relationship isn't so special anymore. What they



did was simply to go where the market took them. They were discounting their price of crude into the United States by around 30 cents a barrel through much of the '80s and '90s in order to maintain themselves as the primary supplier. That's easy to do. They were forgoing a greater netback of about 30 cents a barrel, which they could have gotten above the U.S. market by selling more into East Asia. That's what they're now doing, principally to China. As Frank has already indicated, China's imports of oil this year will expand about 40 percent. This year, Saudi Arabia became China's principal oil supplier. There is a growing network of commercial relationships between the two countries, and I expect those to expand. By the end of the decade, China will have displaced both the United States and Japan as Saudi Arabia's principal trading partner. It's just the reality of the market.

I don't think it's anything to be alarmed about. It means that the price of oil to American consumers went up slightly, not noticeably, because that built-in subsidy from Saudi Arabia isn't there anymore. Saudi Arabia is going to continue to decline as an exporter into the U.S. market. I expect by this year it will be below Nigeria, the bottom of the top-five foreign suppliers.

Finally, a word on OPEC. The events that have driven prices have been mainly political wars, revolutions, disruptions of various kinds – until we get to the very recent period, where OPEC engaged in market management. That's when OPEC, for the first time, took control of prices when they collapsed in '97-'98 as a result of the Asian financial crisis. OPEC cut back production dramatically. Prices increased from a low of around \$10 to back up into the high teens as a result, but even OPEC has not been able to manage the market in the last 18 months. Demand and supply have gotten so close together that, in relative terms, we have less spare capacity in the world today than we did in 1974, at the time of the first oil-price spike. We're now in about the same shape on natural gas as we were on oil in 1974. So the picture is not an encouraging one. OPEC is not the answer, nor is it the problem; it's simply supply and demand.

**AMB. FREEMAN:** The policy choices we face in this country, as you suggest – adjusting demand downward, thereby reducing dependence on particular forms of energy – we can either address through regulation or through the market, which usually our philosophy tells us is a far better way of doing things. Somehow, however, in the area of gasoline and SUVs, the market is something we don't want; we want the government to decree efficiency standards for automobiles. It's a very peculiar thing. I question whether this preference for regulation, for big government over markets, is a good idea and can survive the next presidential term.

The second matter – far more grave in many ways – is the demonstration of the end of some aspects of the special relationship with Saudi Arabia: the end of the discounts and the end of the Saudi emphasis on primacy in the American market. There's another issue you didn't mention, which we will get into, and that is the defense of the dollar by the Saudis. Twice within OPEC, other members, Iran in particular, have moved to eliminate the dollar as the unit of account for the oil trade. Were this to occur in the current context of massive U.S. budget, balance-of-trade and balance-of-payments deficits, the results could be absolutely devastating for the global economy and our own.



The reason the Saudis defended the dollar on the two previous occasions was not economic analysis but political affinity for the United States. Question: If that affinity is no longer there, will they play that role? This is a large issue, with people like Paul Volcker saying there is a very substantial danger within the next five years of some sort of dollar collapse. This is not a minor matter.

Finally, you didn't mention, in terms of our dependence, although Frank alluded to it, the fact that we haven't built a new refinery in 30 years. Increasingly, we are importing gasoline and product rather than crude, simply because no one will allow refineries to be placed in their backyard. Similarly, although we want to import a lot more gas, no one seems to be terribly eager to have gas-handling facilities or large ships full of highly volatile liquefied natural gas coming into their neighborhood. So we're going to have to address this issue as well because it accounts in no small measure for the shortage of gasoline at the local level at various points in the recent past.

**ALAN S. HEGBURG, senior fellow, Energy Program, Center for Strategic and International Studies**

I would like to make three points to try to set the stage for our policy discussion. The first has to do with the forecast on supply and demand, particularly for oil but for hydrocarbons in general. As Frank Verrastro is fond of saying, and I think it's true, "The Stone Age didn't end because we ran out of stones." It's the same with hydrocarbons. Whether or not we're running out, the question really is, should there be a transition away from hydrocarbons and fossil fuels to something else?

That question is a fundamental one. In the past, when we have undergone a transition from one energy source to another, it's usually been to the cheaper, more efficient, more fungible energy source, coal to oil being the best example. If there is another source out there that's cheaper and more efficient than gasoline, we have to find it. So far we haven't found it, so we are in the replacement mode through some kind of transition of which we're not quite sure.

The second point is, does this whole question of U.S. oil-import dependence help or hinder any transition that we might pursue? If prices remain high, is that good for us over the long haul for oil, or does it have the financial consequences Chas. talked about, of which there are several ramifications – not just the Saudi side; the continuing import dependence translates into financial-market problems at some level.

A subset of those questions is, have the higher oil and natural-gas prices set the stage for a continuing high level of prices? There were periods in the 1970s when prices jumped and then leveled off at a higher level. I think the chairman of the Federal Reserve believes that is the case with natural gas, that we are now in \$5 natural gas at the Henry Hub or maybe \$10 at the City Gate in New York. We may not be at \$50-per-barrel oil, but are we at \$35 or \$40. And if that's the case, does that help or hurt us in the transition?

The third question is, of course, what are the ramifications of our policy and how can policy be formulated? Do we go down the road that we went down in the '70s with some success and some failures, or do we find an alternative?

The long-term conventional wisdom for oil supply and demand is that demand will



grow, although not at the rate that everyone says it will grow, but that supply will then meet demand because there are adequate resources in the world. There is a minority view that supply, over time, is not going to be adequate. There have been discussions at CSIS and various other places by people who believe that non-OPEC supply will peak relatively quickly, say 2010-15, and that OPEC supply capacity will peak somewhere in the 2020s. If that's the case, then we should be thinking about the transition immediately, given the leads and lags in terms of the oil market in particular. I'm not saying this is a dire issue at the moment, but at the same time I think it is worth some thought. The question really is, how much risk should the economy take on in the event we're facing this kind of marketplace as opposed to the one we think we are facing?

Second, in terms of bringing supply on, is a question of timing. The investment often lags behind the demand. It's happened this year as the surge capacity has disappeared, and it's made some investors, both public and private, skeptical about investing at this stage. OPEC countries have been hesitant to invest at a high price, because, as swing producers, they can put a lot of money into additional capacity. Then, all of a sudden they have surplus capacity that they can't sell because the market doesn't demand it.

Chas. has referred to the lack of investment in the refining sector in the United States. It's true; no new refining capacity has been built. But refining capacity has gone up in the United States because investors invest in their existing refining capacity. It's the quickest, easiest way to get a return. But even there, refiners are hesitant to invest at prices at these levels, as perhaps the market will turn on them. This is, after all, a commodity market. Those who can predict commodity prices should be extremely wealthy and be doing something as opposed to talking about it. You have to understand the economics of the oil market in particular; it is highly competitive and highly risky. It's amazing at one level that people do actually invest in this marketplace, given the economic risks associated with it.

Finally, on the policy framework, let me make two comments. In the 1970s, the Carter administration deserves a lot of credit for at least one decision it made: to deregulate oil prices. It actually encouraged the boom in investment in non-OPEC oil production that has occurred over the past 20-plus years. If you look around the world, non-OPEC production was increasing while OPEC production was declining. For those investors in non-OPEC, or wherever they have a major investment, they continue to reinvest in that exploration, that production facility. Once the infrastructure is in place, it is the cheapest place to invest. There is some indication that this kind of investment cycle is coming to an end, and that is, I suspect, one of the reasons the non-OPEC production peak will come sooner rather than later. If, in fact, we are now seeing more concentrated investment in three or four places around the world, what is it we should do on the supply side? And on the demand side, contrary to what Chas. has mentioned, I don't think it's mandates. But I think we have to encourage the marketplace, which is already signaling things on transportation. Hydrocarbons probably can lose some of their control over the transportation market. That is something that we should encourage as a policy framework. We should also encourage the financial markets or make sure the financial markets value these kinds of investments as much as they value investments in the oil sector.



## Q&A

**AMB. FREEMAN:** Given the tremendous growth in demand that is projected over the coming 15 to 20 years, and given the requirement for Saudi Arabia to make major new investment in production capacity to increase supply and to make investments beyond that in excess production capacity in order to maintain the surge or controlling capability in the market, does Saudi Arabia have the access to capital and technology that it needs to meet this requirement? Will it have to turn to foreign sources of capital and technology again? We're talking 15-20 years. If it does turn to foreign partners, are they going to be – as they were in the past – American?

**MR. PLACKE:** Our projections of Saudi oil-production increase are fairly modest. We only show them rising to a little above 11 mmb/d of capacity by the end of this decade and to about 14 mmb/d by 2020. I suspect that will be too low, but demand is the hardest thing in the equation to forecast. If demand projections are along the lines that are generally considered by the U.S. Department of Energy and the IEA and others, Saudi Arabia is going to have to grow faster than that. The reserve base is there to do it. There's been a lot of public discussion about whether Saudi reserves are real. They're a lot more real than those in Iraq and Iran, I assure you. They have a tradition going back to the old Aramco days. They don't really fool around with numbers the way some other countries do from time to time. So I would take their reserve estimates as being quite confident.

Where would the capital and technology come from? Aramco, the world's largest oil company, is a technological marvel as it stands today. They don't have the best of everything in every field, but they know who does and simply contract for it. As long as you have the management structure to integrate it and utilize it efficiently, which they do, you can get what you need. The expected budgetary surplus for Saudi Arabia this year is \$30 billion. In terms of the Saudi economy, that's very large.

**AMB. FREEMAN:** About 15 percent of GDP, the equivalent of about \$1.7 trillion in budget surplus for the United States.

**MR. PLACKE:** If oil prices stay in the midterm in the upper \$30 range, as we think they will, that will generate sufficient capital for Saudi Arabia to have the wherewithal to do the investment. Might they bring back foreign oil companies? Possibly. In March they signed a series of contracts for gas exploration and production, none of them with American companies. Chevron bid on two of the four in the package and came in second in both of them. They lost out to, I think, Lukoil in one case and to Sinopec – a Chinese company – in the other. That's an indicator of the future, I think. That's a policy issue that the Saudis would have to wrestle with. I don't see the imperative that would drive them to do it, but it may be a question of market efficiency, and there may be some advantages to doing it.

**AMB. FREEMAN:** So, in a sense, you think that whether we achieve energy independence or not, Saudi Arabia has achieved its independence and its capacity to develop its own facilities.

**MR. VERRASTRO:** Our experience with forecasting demand out 20 years has been less than stellar. I would argue that estimating demand out 18 months is extremely difficult. If you take the IEA's forecast – and that's what a lot of people use, either IEA or EIA – it



initially predicted a 120-mmb/d global oil demand in 2025 or 2030. That was predicated on our being at 90 mmb/d by 2005. We're sitting at about 82 mmb/d halfway through 2004. So even if you readjust the forecast and bring it down 10 mmb/d (to 110 mmb/d), it's not actually a straight-line projection. I don't think anyone anticipated Chinese growth being as fast as it is, certainly at the end of 2003, beginning of 2004. Is that kind of growth sustainable? For how long? Will it be victimized by current and sustained high prices?

If you take OPEC or Saudi reinvestment, you have to look to the past when you plan for the future. In February of this year, the IEA forecast was for global demand on the order of about 77.5 mmb/d. That was predicated on the fact that every spring, demand turns down because we're coming out of the winter heating season in the Northern hemisphere, but we're not quite in the driving season yet, when demand increases. If you assume that non-OPEC production could supply 50 mmb/d and there are 4 mmb/d of natural gas liquids (NGLs), the "call" on OPEC reserves was going to be about 24 mmb/d. Their quota in the spring was 23.5 mmb/d, so that assumed no stock build. The IEA has gone back now and revised their demand forecast eight times in the last eight months. It's now 3.8 mmb/d higher for the second quarter. If you're shooting at a target, and you're 3 mmb/d or 4 mmb/d low, it takes you time to make up that deficit.

Since February, OPEC has been producing over quota. The Saudis' production is up to 9.5 mmb/d, maybe close to 10 mmb/d. We're starting to see stock build again. If you look at the most current month, where demand was 82 mmb/d – with no contribution at all from Iraq – the world's supply was in excess of 83 mmb/d. That accounts for the stock build; it may account for some of the recent reduction in prices.

When you start looking forward, though, I think the Saudis' biggest concern is Chinese demand, whether it can continue. If you go back to a 60-mmb/d market, a surplus capacity of 3 or 4 mmb/d (in excess of 5 percent), that is a pretty good cushion. If something happens in Venezuela or Norway, you can accommodate for the loss, and the market works. When you go to an 82-mmb/d market with a surplus capacity of 1.5 mmb/d, you have a very small margin of error, and that's part of the problem we are seeing today. But if you continue with sustained prices in excess of \$40 or \$45, demand inevitably will be reduced. If it's dampened and we have an economic recession of some sort, if you're Saudi Arabia and you're sitting on spare capacity, you certainly hesitate to build more. I think Saudi Arabia has the reserves and resources. I was in Dhahran in March of this year, and the technology that Saudi Aramco uses is simply phenomenal because they can spread the cost over all these barrels. And their shareholder is the Saudi government. It's not what we deal with in the United States.

That being the case, you wonder how much more money you'd invest in a situation where maybe Iraq comes back, Russian production starts to increase, Nigeria and Angola do pretty well, we spend money on nonconventional fuels in Venezuela and Canada, and then demand goes down. Under this scenario, the Saudis could be sitting on 4 mmb/d of spare capacity that's in the ground that they can't use. How quickly do you want to bring that forward?

On a policy point regarding refining capacity, one of the disconnects is that for private-sector companies, prudent business decisions don't necessarily dovetail with good



public policy in the right time frame. Refiners and producers are very leery of investing in production and putting money in the ground and increasing capital expenditures to produce something that demand may not be there for in the future.

**MR. HEBBURG:** Three quick points on China and Saudi Arabia. Chas.'s distinction between Saudis and Saudi Aramco is important because Saudi Aramco is clearly intent upon preserving and exploiting its position in China. It is very aggressive; it will not cede market share to the Russians, who cannot begin to deliver oil to the Chinese market as competitively as the Saudis can. Aramco is now in a refinery deal in China that actually helps solidify its position in that marketplace. At present, the Chinese retail market is not a world market, so there are a lot of uncertainties about the Chinese energy market as well as Chinese economic performance. The real question is, how does the Chinese economy develop, and how does their energy economy develop? There's a fairly substantial risk for any investor in China.

Second, the crude marketplace seems to be dividing up into regional markets. If the Saudis remove themselves from the U.S. market over the next period, they might sell their interest in their refining assets in the United States. But they may desire to do that in exchange for the Asian market. And the Russians, assuming the port at Murmansk can be built, can actually be in the U.S. market in a very competitive way, at least on the east coast. So the Russians can actually come into the U.S. east-coast market competitively at the expense perhaps of the Saudis, who probably cannot compete in this market.

Third, the quantity of surge capacity is important, but the quality of surge capacity is also extremely important. In the latter part of August, when the Saudis were offering heavy (sour) crudes to the marketplace, the marketplace did not want them. The marketplace was looking for a better quality crude than you can find in the Gulf and were buying Urals crude. As a result, the Saudis had to discount some of their additional capacity because it did not fit with the refinery requirements in the marketplace.

**AMB. FREEMAN:** Regarding the special relationship between the United States and Saudi Arabia and what that means to the U.S. government in terms of its strategic relationships with other nations, is this a good thing or a bad thing? Should this be something we should be alarmed about or is it just a matter of market fundamentals working themselves out?

**MR. PLACKE:** There are three things that make Saudi Arabia of international importance. First, it is the home of Islam. The two most sacred sites in Islam are in Saudi Arabia; the religion was founded there. Second, is it's strategic location. That was critical to the United States during the Cold War. Its strategic location hasn't changed. It's still a very important consideration. Finally, of course, it's the world's largest oil-reserve holder and the world's largest oil producer.

Having a barrel of oil available when you need it or want it is much more important than where that barrel comes from. In 1974, when we had gasoline lines, you couldn't fill up your car, at least not conveniently. So it's a question of availability, not where it comes from.

But the political importance of Saudi Arabia remains, and I would not want to be referred to as having said that the special relationship has ended. I think the special relationship simply isn't as special as it once was, in part because of the end of the Cold War. The one thing that formed a common view between the United States and Saudi



Arabia, from the end of World War II, right up to the end of the Cold War at the beginning of the '90s, was a common enemy. To the Saudis, it was godless communism; to the United States, it was the Soviet menace. But we were looking at the world in at least a parallel way.

That is over. We don't have a common enemy anymore. In this country, what happened on 9/11 is an overriding consideration that colors everything else. So there are more bumps in the relationship than there have been in the past. Oil is going to be a reduced factor, but it is important to the United States to have a confident relationship with Saudi Arabia. I don't think that has changed.

**AMB. FREEMAN:** I'd like to make explicit the emergence of a fourth and very important common interest, which is in combating Islamic terrorists. My sense is that the kingdom is winning its war against its domestic terrorists, but we are losing ours in the broader arena, leading to an interesting and somewhat ironic situation.

**MR. VERRASTRO:** I think it would be tragic if the relationship were gone. It's been damaged, but I think it's certainly recoverable. We need to tone down the political rhetoric from both sides. We've demonized Saudi Arabia because it's effective politically and there's no downside. It's not smart going forward as a broader policy tool, however.

**Q:** Is the Persian Gulf area going to be predominant again in the oil business? And what are the prospects for the hydrogen cell?

**MR. VERRASTRO:** There's a group of people who clearly subscribes to the idea of the Hubbard peak: that oil production will peak and then you'll see a steep decline. In my personal view, the curve works extremely well for mature basins. In the United States, we've got over 100 years of exploratory work and production. Some people take an overly simplistic view of this, however. They take the global reserve numbers that are listed, they subtract actual production that's occurred over 60 or 70 years and say, this is what's left. But in practice, when you go to some of these fields, we have already produced more than the initial reserve estimate. The Gawar field in Saudi Arabia has been in production for 70 years and is still producing several million barrels a day.

Lack of data and transparency for those areas is a problem. In the United States, you can make that (decline-curve) case for the lower-48 states because we've got good data. When you try to expand that to the rest of the world and extrapolate, it's dangerous. The PFC (Petrofinance Company) analysis was presented at CSIS a couple of weeks ago. They had better data on non-OPEC reserves – from a variety of sources, some of their own analysis and some from company data. What that drives you towards is a greater reliance on OPEC in the future, probably 15 years out.

When you get to the OPEC numbers, however, there may be a problem with those types of predictive tools, and that's where the predominance of oil and gas reserves are. In that case, production increases and declines have largely been related to price. When price goes up and demand goes up, we've seen people enter fields. For a lot of the production in Saudi Arabia, the reserve estimate is just based on primary production; they haven't even done water flood yet. So I don't think we're going to see the end of oil in my lifetime.



On the issue of hydrogen fuels, people have asked what would it take to ensure that a child born today drives a hydrogen car. My answer is, raise the driving age. I don't see it by 2020. A lot of things have to fall into place, including advancement of the technology. One of my largest concerns with some administration policy is that they're relying a lot on hydrogen, carbon sequestration and clean gen (clean coal projects) – but these technologies don't yet exist.

Maybe 15 years out, with a lot of work and a lot of money and a lot of research, we can get there, but we need to be smarter and look at practical applications in the near term to make that transition. Technology and consumer preferences may drive a lot of this, but it requires long lead times and a lot of money.

**MR. HEBURG:** I have no idea what the supply-demand balance is going to look like in the future. Because there is some uncertainty, why should the United States assume all of the risk that there will be adequate low-cost fossil energy reserves available to the marketplace for the foreseeable future, to 2040? That doesn't mean you immediately go out and transfer into solar power, but it does mean you think about how you can actually begin the transition.

The question isn't whether you go from this energy economy to a new energy economy within 10 years. It is, what are those steps that could actually add competition to the marketplace, what technologies can be tested, find acceptance in a price and on a clean basis that the society will want to buy and use? That really seems to be the challenge. It's a step-by-step process.

Finally, in terms of supply additions, if you go back to the published data from the private companies, the equity investors, the large oil investors in the world, you will see that the way in which they add reserves lately is through revisions, additions – step-out wells – production and acquisitions. Exploration has not really carried them over the last several years, and exploration budgets in the large companies tend to be very constrained now. They're all looking at acquisitions in various parts of the world. That means we're not adding to the broader stock of oil reserves; they all work on the same existing reserve base.

**AMB. FREEMAN:** In China, which faces a particular challenge in meeting its energy requirements in the future, the focus of most of the research and development does seem to be on coal conversion, through gas into liquid or into hydrogen. There are rumors of some innovative new technologies emerging, but one never knows until that actually happens.

**MR. PLACKE:** Let me add to what Frank has already said about the question of converting the automobile fleet to hydrogen fuel. About once or twice a year, I attend a meeting of the chief economists of the major automobile manufacturers in North America and some of the major oil companies. What I'm reflecting here is not an independent view, but a view that I've acquired from knowledgeable people in the automobile industry. It takes an average of seven years for the U.S. automobile fleet to turn over. The technology to put a hydrogen fuel cell into automobiles on a large scale, let alone provide access to the hydrogen to fuel them, isn't even on the horizon in the industry's judgment. So by 2025, it's almost certainly not going to happen. Could there be a technological breakthrough that



would change this? Yes. Technology is unpredictable, and breakthroughs happen when they happen; you can't forecast them.

The industry was more optimistic about hydrogen-fueled automobiles 10 years ago than it is today. I think they've realized increasingly that there are just too many inherent problems in handling hydrogen, in distributing it, in treating it as a fuel on a mass basis. Therefore, it's relatively unlikely that that will be the solution, but nobody can say with certainty.

Will hydrogen fuel cells find a place? Yes, almost certainly, probably in stationary uses. The U.S. administration is putting money into a program to develop hydrogen fuel cells for the transportation industry, but, then, in the 1970s we had something called Project Independence, which was energy independence. It's been around a long time. Under that rubric the U.S. government spent \$2 billion trying to figure out how to convert oil shale to crude oil. What the \$2 billion expenditure proved was what most people realized at the beginning: it can't be done economically. We may do the same with hydrogen fuel cells.

**Q:** Professor Samuel Huntington made a comment that he was four years at the National Security Council and the president talked about democracy and human rights in all countries except Saudi Arabia, and the reason he gave was oil. Do the people who are now attacking Saudi Arabia because they don't have enough freedom and democracy really believe that an elected government there would be more manageable? Or is there something else that is driving this sudden attack on Saudi Arabia?

**AMB. FREEMAN:** I don't think it's a secret that we're having an election in this country and that Saudi Arabia has been successfully vilified by its detractors. It is, as I think Jim said, a country that you can attack at no cost and with considerable gain politically. What's happened is not that anybody has particularly gone on the attack against Saudi Arabia, but that the White House, which traditionally protected Saudi Arabia against this kind of declaratory diplomacy, has chosen not to do so. There is an election judgment, presumably, in the White House that the cost of defending Saudi Arabia was greater than the benefit.

Having said that, I will make several comments on the issue itself. First, I think declaratory diplomacy of this kind, putting labels on countries, is generally counterproductive. It infuriates rather than persuades. I don't think this will be an exception. I don't expect the Saudi government to take our words to heart any more than we took to heart the words of Europeans who condemned our system of segregation. When they said that, we simply got angry; when we finally did change, it was for our own reasons.

Second, substantively, the accusation is correct: there is no religious freedom in Saudi Arabia. No one has ever disputed that. But, in recent years, the trend in Saudi Arabia has been toward greater freedom of religion than before, as Shia have been admitted to the national religious dialogue and accorded a place of honor in national policy making. So it's very ironic that at this moment of expanding religious freedom, albeit in a minor way, in Saudi Arabia, we should choose to issue this denunciation. Why do we do this? Because there are groups in the United States that feel passionately on the issue, either for reasons



of deep religious conviction or because they don't believe that we should have Saudi Arabia as a friend and are delighted to see our two countries divided.

What's the prognosis? This action will not help advance the cause of religious freedom in Saudi Arabia. It probably won't harm it very much either. It simply will add to the estrangement between ordinary Saudis and Americans, and it will lead to counter-charges – in fact, it already has – by Saudis against American persecution of Muslims. This, sad to say, is not an entirely groundless charge in the post-9/11 atmosphere.

This is all about electoral politics and the lack of courage to defend an old friend, based upon a silly notion of how one should conduct foreign relations that is, unfortunately, deeply rooted in the American psyche.

**Q:** How viable and how genuine was Saudi Oil Minister Naimi's offer this past spring to help build a new refinery on U.S. soil? Second, considering that Saudi external political relations follow economic relationships, what does the kingdom's increased interdependence with China mean for U.S. businesses as well as U.S. policy in the Gulf region and the larger Middle East?

**MR. VERRASTRO:** Let me start with the refinery question. Minister Naimi actually made that offer at one of our conferences, and we had the deputy secretary of energy on the same panel. Secretary McSlarrow basically said, good luck; have at it. I think the Saudis may have rethought the offer, since there was no movement on the U.S. side. In terms of economics, just as American companies look at it, there's probably going to be a delay in new investment until it's clear what the market is going to look like.

When you ask some of the refiners in this country what would be the incentive, they point to 20 years in the past of low performance on refining assets in the United States. Why would you make an additional investment now? If you tell them that increasingly it looks like we're going to meet our demand through imported product in addition to imported crude and so double our vulnerability, their answer is, that's the market adjusting. But if you start talking about some of the policy answers – encouraging alternative fuels, restraining demand, increasing inventories to smooth out the bumps in the price cycle – those are the three things that they find most objectionable. They think that those are disincentives to investment. So we're talking past each other.

I think the next Saudi refining investment will probably be in Asia. If you're looking to move your crude in that direction, you lock up the market by building a refinery that's configured to handle your crude and make products that they demand. That may be a home for the heavier oils; it just makes a lot of sense.

**MR. PLACKE:** Saudi Arabia, nearly 20 years ago, offered to build a refinery in China but the Chinese weren't interested. My understanding is that there is now a discussion going on between Saudi Arabia and SINOPEC, which signed the gas exploration agreement with Saudi Arabia and is also the largest refinery operator in China, about selling an interest in a plant, which would then be expanded, to Saudi Aramco. I think that's much more likely than investment in the United States.

I made the observation earlier that I would expect by the end of this decade that China would have replaced both the United States and Japan in being the number-one



trading partner for Saudi Arabia. That's just the way the trend is going. It's partially oil, but it's also the things that China produces. What do you see when you go to K-Mart? Things are made in China. You see the same things in Saudi Arabia or anywhere else.

What we have done since 9/11 to protect the country has in some cases alienated the Middle Eastern part of the Muslim world and made business much more difficult. There is disinvestment of Arab investment, and particularly Saudi disinvestment, in the United States. The membership of the American Chamber of Commerce in Saudi Arabia has declined. The number of American children attending the international school there is down. All the indicators that I can identify suggest to me that the business relationship is in decline. What will turn it around? Probably policy considerations, but Chas.'s earlier comments don't make one very optimistic.

**AMB. FREEMAN:** I would note that you also have the virtual end of the flow of students from Saudi Arabia to the United States, the decline in business travel as well as the American foreign-worker presence in Saudi Arabia, and a radical decrease in the ability of American companies to make sales presentations because they can't bring customers from the region to the United States through the visa gauntlet and the risk of humiliation at the airport. So I think we have to separate the two issues. The U.S. business relationship with Saudi Arabia and the Gulf generally is in fairly rapid decline for reasons that have to do with us, not China. China's relationships are very rapidly on the rise, for reasons that have to do with China, not with us. Therefore I don't see it as a zero-sum game. I just find it unfortunate that we would be allowing our relationships to deteriorate in the fashion that they have.

**Q:** Two things that I find disturbingly missing from the discussion are, number one, the lack of responsibility of some elements within the free-market corporate sector, evidenced by things like the Enron fiasco in California, Shell's falsification of reserve data and things like that, all in the interest of near-term shareholder-benefit stock prices. Second, there's an underestimation of what I would call the lunatic-fringe factor in American politics, namely that the same neocon apparatus that was responsible for the Iraq War seems to be gunning for Iran. There have been accusations of encouragement of instability in the Caucasus region, and there are major areas of the oil-producing sectors of the world that seem to be much more unstable.

But my question is on public policy, looking towards posterity and not the near term. It seems obvious that within less than a generation we're headed for a much larger energy crisis. What kinds of fundamental things need to be done to confront a transition to a whole new array of energy technologies?

**AMB. FREEMAN:** I will prove that I'm not a politician by giving you a straight answer. We ought to tax the hell out of oil, gas and gasoline and apply the taxes to the infrastructure and other problems, while simultaneously reducing demand and dependence on foreign energy.

**MR. HEGBURG:** This is the core of the public-policy issue: how do you actually try to initiate the transition if you can't move the political system to use mandates and tax policy and fiscal policy to achieve those objectives? How do you encourage the market to take



the lead, and how does the political system support the market system? That usually gets into tax and fiscal policy, and very strong entrenched interests will protect themselves forever. If you just follow the debate over the energy bill that's taking place in the Congress, it is a very, very significant issue for those who are already in the marketplace and don't want to cede any of their position. I think I would do the same thing if I were in their place.

The other thing that makes change very difficult in this political system now, as opposed to the 1970s, is that there are a lot more political actors involved. If the federal government – either the Congress or the executive branch – doesn't preemptively make decisions, they are ceded to the courts, to the regulatory bodies and to the states, and the states are actually engaged in legislation and regulation on their own. This means that the marketplace, which had been known for its efficiency – particularly in gasoline, as we saw in the summer, is becoming less efficient. That there's a confederal market for energy, which means there are a whole lot of players who have different perspectives on this.

Third, the environmental issues are real and important and have yet to be accommodated in any way in the political system that you can reach consensus on. They are still confrontational. If we can't go to some sort of cooperative arrangement on energy policy, we are going to be stuck in this place for quite a while.

**AMB. FREEMAN:** We have increasing reports in the scientific literature and in the press suggesting that the increase in hurricanes is related to a rise of water temperature, and yet we have an administration that, until very recently, had forced its scientists to deny that there was a problem of climate change. Probably it's going too far to blame Florida on the administration, but there is a connection. There is generally a default on a range of public-policy issues. Among them are issues of corporate governance which have not been addressed squarely and which have greatly reduced the attractiveness of the American market to foreign investors, among other things.

Second, as you said, the erratic behavior and unpredictable nature of the neocon mind as it threatens Iran, Syria and a range of other potential targets is also probably a factor in making things considerably less stable and retarding answers to the problems we have been talking about.

**MR. VERRASTRO:** I agree with your assessment on some of the corporate malfeasance that has gone on. I think we need to make the distinction between the near term and the long term. We have moved away from long-term planning. Even in the industry, where I spent 20 years, a lot of the companies used to be run by geologists and engineers in the oil sector. Increasingly, the people that run these companies today came up the ranks on the financial side because they can guarantee increased performance or improved performance on Wall Street. To make your quarterly target, sometimes you forgo investment. You don't do the spending when your income is rising. So quarter-to-quarter you can look really good, and that is good for bonuses and for performance. It probably doesn't help the longevity of the company, and if you get a group of those people operating the same way, it doesn't help the long-term situation of the country.

On the policy side, I have seen the same thing: Balkanization because of these single-

issue special-interest groups. I have nothing against lobbyists or special interests. We all have special interests, but this means you can push one issue, whether it's environment or tax or just stopping something from happening. You don't have to work on the solution, and we don't hold everyone accountable for the solution. When we were talking about the gasoline problem earlier this year we tried to get a group together to talk about what the actual situation was – was it crude quality, was it availability, was it pricing, was it regulation, was it boutique fuels? And the regulators would point at the refiners and the refiners would point at the environmentalists, and everyone pointed at Wall Street – but no one wanted to work together to come up with a solution, even in an off-the-record session. We have got to get beyond that, and I think part of the reason that forums like this are important is to raise the level of education so people understand what the issues are and how soon they are coming forward. Then maybe we can get the word out and discuss it better.

**Q:** Would someone address the issue of synthetic and renewable fuels?

**AMB. FREEMAN:** I think ethanol is heavily subsidized by tax policy, to the point where there are serious questions now being raised about whether the acreage planted in corn and the chemicals used to produce it do not create more problems than the ethanol produced solves. These issues all need to be addressed. Diesel and sulfur are a technical issue. Conservation is of course key, and that gets to how to depress demand. Personally, I have always thought that there is an interesting equation between prices and demand that we shouldn't forget.

**MR. PLACKE:** There are two ways to deal with the narrowing of available oil-production capacity and rapidly growing demand, apart from just expanding capacity. You can apply measures to encourage conservation, through regulatory measures and tax policy. You can also use tax policy to encourage fuel efficiency, which we did in the '70s. It had a very pronounced effect and was a good thing to do. We have stopped doing it, and we ought to consider going back to it. It is a less painful way, because it's an incentive rather than a regulatory barrier. But it's all part of the same picture. The other avenue, of course, is technological change, but none of us knows with any degree of confidence or precision exactly where that is going.

**MR. VERRASTRO:** When demand started declining in the early 1980s because prices had been too high, both the Reagan administration and the Congress decided to stop funding the Synfuels Corporation because they thought it made no sense to subsidize backstop technologies when conventional fuels were so inexpensive. So it was a short-term change in policy priority versus spending the money to save you from paying down the road. We seem to do that all the time.

**AMB. FREEMAN:** Because this is the Middle East Policy Council, we try to focus on the implications of things for U.S.-Arab relations. The major oil producers in the Persian Gulf – Saudi Arabia most notable among them – do not take kindly to the idea of raising prices through taxes if the taxes go to the governments that levy them rather than the producers of oil. This is, in fact, a major point of dispute between the Saudis and various European governments, which have chosen to tax gasoline at the pump at very high levels. They do



this both in order to raise revenue for roads and mass-transit systems and to reduce demand for energy, and thereby preserve a measure of independence from foreign supply, but also for other purposes, none of which are particularly congenial to the oil producers.

In the case of the United States, the reasons we don't tax at significant levels have absolutely nothing to do with doing favors for Arabs. It has to do with our own gluttony and greed and our infatuation with the automobile and our belief in consumerism as a philosophy. When I advocate higher prices, I am talking about how I see American interests. I also recognize that my viewpoint is not likely to be welcomed by Ali Naimi, but he may rest assured that no one is going to listen to my advocacy on this point anyway.

**Q:** I would like to add two more aspects to the special relationship between the United States and Saudi Arabia. The kingdom is a founding member of nine different organizations where we are vulnerable, in which they carry water for us on far more days than they do not: the United Nations, the International Court of Justice, the World Bank, the IMF, the Organization of the Islamic Conference, OPEC, the League of Arab States, the Organization of Arab Petroleum Exporting Countries and the GCC. We have needs, concerns, interests and objectives in all nine of those, and the Saudis are significant players. Of 140 developing countries in the world, none of them carry the weight that Saudi Arabia does.

That was a matter of no small significance with Operation Earnest Will in the ending of the Iran-Iraq War, where we put our flag on Kuwait's tankers and some two-dozen countries formed that coalition. Saudi Arabia was a key player in bringing a number of those on board, as we were. In the reversal of the aggression against Kuwait, it also played an enormous role at the geopolitical level in terms of the League of Arab States, in the twelve to nine votes that we got twice and needed very much.

In addition, more than 200,000 Saudis are graduates of American universities. They are all in place in the kingdom; most of them return our phone calls. Each of them would return us courage-for-courage or creativity-for-creativity on breakthroughs in the Israeli-Palestinian conflict, as they did with regard to the unanimous Arab League vote of March 31, 2002, on Prince Abdullah's peace proposal, which has yet to be answered decisively.

My question is on petrodollars. Would one of the panel elaborate on the implications of the dollar as the oil currency? This has been key to the ongoing preeminence of the American financial system worldwide. What if they switched, as Kuwait has been doing, to a basket of currencies within which the dollar may be the single biggest piece? What if the euro grows in importance? Or what if there is other tinkering, perhaps with the withdrawal of the \$400 billion of Saudi Arabian investments of the United States?

On energy, people talk about a GUPEC (Gulf Organization of Exporting Countries) of Kuwait, Saudi Arabia, Qatar and the UAE. Under what scenario could you see a tightening of these four if there is further alienation from U.S. policies?

**AMB. FREEMAN:** I would note that it is a matter of convenience rather than law, a matter of custom rather than of well-considered principle, that international commodity markets based in London use the dollar not only for oil but for all other commodities with one exception, which is still traded in sterling. There is no inherent reason for this. It has



been the case because of the unique role of the dollar as an international reserve currency and the willingness of the American people to refrain from saving and to consume gluttonously, thus exporting dollars in large numbers, which we persuaded the Arab oil producers in the mid-'70s to recycle into investments in the United States.

If the cycle were broken, and the dollar were not the medium of account for the oil trade, it would cease to be the medium of account for cotton and copper and aluminum and all the other commodities – some 200 of them, which we are dependent upon. We would then actually have to pay for those things by doing something other than printing dollars. That is the problem, in essence. How real the danger is, I'm not sure. How acute the problem would be, I would like to hear an economist address.

**MR. PLACKE:** You referred to the recycling of petrodollars, as they were called in the 1970s, into U.S. Treasury bills. By the early '80s, Saudi Arabia was the largest holder of U.S. Treasury bills because of various things that happened in the course of the '80s with oil prices – until the first Gulf War, which was largely financed by Saudi Arabia. There is even a suggestion that we made a profit on that war, which we certainly haven't on this one. That's over. Saudi Arabia is a modest holder, if at all, of Treasury bills, which is generally true for the other principal oil exporters as well.

If we are today on the verge of another so-called oil boom analogous to the 1970s, with large amounts of capital then to be accumulated by the principal oil exporters, where will that capital go? Given the way the dollar looks today, it probably isn't going to go into Treasury bills. What does that mean for the U.S. economy? This is an area of very broad macroeconomic and financial analysis that is pretty murky, and I think all you can say with any high degree of confidence is, it's not good.

The Bergsten theory about a potential dollar collapse, which you referred to earlier and I'm acquainted with as well, may then become a more imminent and real prospect. We haven't experienced that since the nineteenth century. I don't know what our twenty-first century economy would do in response to it, and I hope we don't find out.

**MR. VERRASTRO:** On the supply side, my gut instinct would be that as long as the United States maintains its position as a huge consumer of oil – and maybe of liquefied natural gas – instead of energy independence we are looking at interdependence. So it's good for producers and good for consumers as well. To the extent that you buy into the PFC analysis, for example, that by the middle of the next decade a lot more of the production capacity shifts to OPEC and out of non-OPEC countries, then it puts OPEC members in a stronger position. I don't think there is any question about that. Whether that restricts our foreign-policy objectives or our military options or our financial incentives, I would argue that this influx of oil revenue probably reduces our leverage to promote democracy in this part of the world. If these countries now are given an awful lot of money – \$200 billion this year – I think that slows the process down rather than speeding it up.

**MR. HEGBURG:** On the medium of exchange for contracts, I don't know what the incentive would be to get out of dollars. There would have to be an equal incentive to get into something else, and I just don't see that in the marketplace. But that doesn't mean it can't happen. On the question of holding dollars as reserves, there certainly are a lot held by the Chinese. It has always astounded me how our foreign policy on China often



ignores the financial linkages that the United States has with China, both on the trade side and the financial side, and of course they are linked.

**AMB. FREEMAN:** There has been a massive withdrawal of Arab private investment money from the U.S. economy and an absence of new inflows. This is reflected in the virtual collapse of net new foreign direct investment in the United States relative to historic levels. You have figures that show almost a catastrophic drop over the past year in inflows of private money. This has been masked, as Alan mentioned, because the Japanese Central Bank has, in the interim, purchased a trillion dollars in dollar instruments in order to prevent the yen from revaluing. The Chinese are charged with manipulating their currency. To the extent that they have done so, they have done it by buying almost half a trillion dollars worth of our national debt. We find ourselves in the strange position of having our increasing national debt funded by China as well as Japan and to a much lesser extent now, the Arabs.

What is it that could produce a rational economic decision to turn away from the dollar? I think Alan has mentioned one factor, and that would be the availability of alternative reserve currencies. The euro has not yet developed to the point where it is a credible alternative to the dollar, sterling is punching above its weight in that game, and the Chinese yuan has not yet emerged as a hard currency. So at the moment there are very few alternatives to the dollar. However, if you are Saudi Arabia or a Gulf country and you look at your shifting terms of trade, if you find that instead of the situation in the past, in which most of your imports are denominated in dollars, now your imports are increasingly dominated in euros or yuan or some other currency, you then have less of a stake in maintaining your linkage to the dollar. In these circumstances you could see, as one of the unintended consequences of the deterioration of U.S. exports to the region and the shift of oil trade away from the United States, the emergence of some basket of currencies as an alternative to the dollar in terms of setting the rival exchange rate thereby determining what the unit of account for the oil trade would be.

But at this point all of this is quite speculative, and I share the hopes of everyone else on the panel that we will not see any of these things happen. I also hope that we will find a basis for repairing the increasing estrangement between the United States and Arabs and the broader Muslim world rather than exacerbating it, as I'm afraid is the case at present.

**Q:** The State Department's designation of Saudi Arabia as a violator of religious freedom adversely affects the special relationship. But I'm wondering if it has a concrete, discernable impact on oil prices. Or have things already been so affected that they couldn't be affected any more? And do you think that Bush's evinced support of Putin is in anticipation of creating a new special relationship with Russia in terms of oil? What might that mean? My understanding is that at least for transport, a lot of the transportation has to take place through what they call the "Stans," so you may be going from one costly, very volatile situation into another.

**MR. PLACKE:** There has not been much effect on oil prices of the continuing estrangement between Saudi Arabia and the United States, at least relative to the relationship that



we've had in the past. Saudi production, as Frank mentioned earlier, has increased markedly. It has grown from about a million and a half barrels a day from April to the current month of this year. That's adding a large amount of oil to the market with the purpose of trying to contain the price spike that we've experienced. I think the Saudi objective is to get the price back under \$40. That has to do with Saudi interests, not the relationship with the United States or any one other major consumer. Their interest, as the world's largest reserve holder and largest exporter, is in having oil be a major commodity for a long time into the future. Having erratic markets and price spikes is a disincentive. They have seen it that way since the 1970s, and I don't think that view is likely to change.

On your second point, I think you would have to ask the president because he said he had "looked into Putin's soul," and it was on that basis that he concluded, as Maggie Thatcher did a generation earlier with Gorbachev, that here's somebody we can deal with. I don't know what he saw there.

Back in the real world, there was mention of constructing an oil-export terminal at Murmansk, which is an ice-free port in Siberia that played a large role during World War II. It does not look like it's going to happen. Mr. Putin's government has reasserted more and more control over the hydrocarbon sector. It already has a monopoly on gas, and it's rebuilding its government position in the oil area, as you see played out with Yukos almost on a daily basis. A Murmansk oil terminal doesn't look like it's going to happen, which means Russian crude cannot be imported competitively into the American market. Russia seems to be oriented much more toward China and Japan as major long-term purchasers, outside of the present oil-export framework, as Russian crude-oil production expands. Two years ago, we anticipated that by the end of the decade Russian production would be about 12 mmb/d, possibly higher than Saudi Arabia's. We have had to cut that back. Our estimate now would probably be about 10 mmb/d, and that's only about a half-million b/d above where it is now. So Russian industry, as the Putin-led government reshapes it and bends it to the purposes of the Russian government, is going to look quite different than it has in the past few years or than we thought it would a few years ago.

**MR. HEGBURG:** On the Putin-Bush relationship, I think it's fair to say: "There's no there there." I don't think there's much in the way of bilateral discussions or cooperative arrangements or anything at the professional level between the two governments. In fact, there are stories that even the ministers don't talk to each other. So I don't think there's much to the special relationship on oil. Obviously Russia's largest exports of oil go to Western Europe by pipeline, and at least a million barrels a day. They also export through the Black Sea out into the Med, and there are train tanker-car deliveries to Dajing, but China takes very little.

If Russia or the companies thought about pursuing a real economic opportunity, they would do Murmansk and probably not do the pipeline to Nakhodka unless someone like the Japanese pay for it. They might because the really big market opportunities in terms of efficiency are in the United States, in the Med and, it seems to me, later on in China. But it seems, as Jim has said, that the decision-making process at the political level in Russia has more to do with reasserting authority and control over the sector than exploiting the



resource and transportation base that it has.

**AMB. FREEMAN:** I would like to note your reference to Central Asia, meaning the so-called “Stans.” The key to their exports of oil and, more likely, gas is not Russia. Russia is already a means of export through existing pipelines. The key to getting those resources out is probably an oil and gas swap through Iran, which has been barred by U.S. policy. Since the U.S. government does not control the governments of China or India or other countries that have rapidly rising requirements for oil and gas, one can confidently expect that at some point this economic opportunity will be seized, even if not by Americans. Similarly, Central Asia has a bright future as an exporter of oil and gas to Chinese Central Asia and thence by pipeline to the Yellow Sea and perhaps to as far away as Korea and Japan. Indeed, the Chinese are committed, with the government of Kazakhstan, to putting in place the first pipeline of that sort. Down the road – quite a bit down the road – I would expect a similar gas pipeline from Turkmenistan to China could be cobbled together. But Russia is seen by those countries as only one route and a route they can already use. They’re looking to develop others and probably will find non-American partners, mainly, to do that.

**MR. HEBURG:** The Chinese have been very aggressive investors in oil-producing countries. They have a large arrangement with Nigeria. They are bidding on acreage in Iran, and, as Chas. said, there are real Chinese efforts to find oil they can swap out for deliveries into China. This is a strategy that other countries have pursued in the past, particularly Korea and Japan, so it’s not new. But the Chinese are the latest to aggressively pursue it.

**MR. VERRASTRO:** There was a belief at least two years ago by some people in this town that a combination of a resurgent Iraq and increased Russian production could be a substitute for Saudi oil. I hope folks are disabused of that idea now, because it’s not going to happen.

**AMB. FREEMAN:** As we close, I am left convinced that Saudi Arabia is acquiring a measure of independence from the United States, but I don’t think I have seen it demonstrated that we are acquiring independence from international oil and gas suppliers. This is not working out exactly the way our politicians would have had us believe or hope, and perhaps this is one of the utilities of an organization like the Middle East Policy Council: we can occasionally play a useful role by reminding folks in Washington that there is a reality beyond the beltway and beyond our borders that is not subject to manipulation and has to be confronted as it is, even if that is not the way we would like it to be.