

This time it wasn't my husband laughing, but our three willful boys who just that second ran into our room shooting one another with Nerf guns.

"I got Evan on the butt," Noah screamed, exhilarated. "So what? That tickled." Evan recoiled on the floor with laughter, but not before he nailed Benjamin with three foam darts in the back of his head.

"Yes, technically the family rule is not to shoot at a person, but who were we were to interfere with this kind of unbridled frivolity? That was something that we would never elect to do."

I would like to thank my friend, Amy, for allowing me to share her story tonight.

It was horror stories like these that propelled this Congress to move forward on health care reform, to reform a system so that no family is put into a situation where life-saving surgery can be deemed elective.

And as we stand here at this holiday season, the Members of this Congress, the Members of this House of Representatives, all 435 of them, the Members of the United States Senate, all 100 of them, all 535 of us who are employed, who have the benefit of working for the citizens of the United States, have a duty to those citizens, at this time of year in particular, to ensure that those who don't have jobs don't see their benefits cut off so that they're not cast aside at this holiday season unable to pay their mortgage, unable to afford a gift for their children.

We spend a lot of time on the floor of this House debating the grand issues of the day, and I look forward to coming back here in January in the new Congress and having great debates about the future of our education system, about the war in Afghanistan, about the best ways to reduce our deficit, about how we reduce our dependence on foreign oil. These are important debates that we need to have. But how can we let partisan gridlock, let the obstructionism that we've seen these past few days, how can we see that stand in the way of extending unemployment benefits to those who desperately need it, stand in the way of middle class tax cuts for those whose wages have been stagnant for so long, and stand in the way of providing just a little bit for the seniors who are struggling as well in this terribly difficult economic time?

I heard a lot about what people expect we should learn from the outcome of this election. And the one thing that's perfectly clear to me, and should be clear to all of us, is that the American people want a Congress that works for them, that does their business, and that puts the Americans' interests ahead of the political interests of those of us who are privileged to serve here.

When we come back next week, let us resolve to do what needs to be done at this difficult moment to ensure that those who don't have work can get by, that those who have been getting by can get the benefit of a tax break, and

that those seniors who have given so much for so long can receive the benefit of a payment in lieu of two straight years without a cost of living adjustment.

Madam Speaker, I look forward to coming back to perform that work. I look forward to casting those votes, and I look forward to having those debates. The days in this 111th Congress are short, but the people want us to get this done. It is time that we remember why it is that we have been sent here. Working together, we have to provide what everyone knows needs to be provided and to take those first steps as soon as we can upon our return.

Madam Speaker, that's what's at stake right now. Let us not get so caught up in this holiday season to think that the joy that so many of us feel is felt all around the country—not when things are so difficult for so many. Let us be thankful for what we all have, but let us work to ensure that everyone has at least a bit of joy this holiday season.

Thank you, Madam Speaker. I yield back the balance of my time.

HONORING IKE SKELTON

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from Rhode Island (Mr. LANGEVIN) is recognized for 5 minutes.

Mr. LANGEVIN. Madam Speaker, I rise tonight with a heavy heart to pay tribute to someone who has been a valued adviser and a dear friend to me in my 10 years in this House.

Congressman IKE SKELTON has served the Fourth District of Missouri and the Nation with honor and integrity for 34 years. And let me just say that his presence will certainly be missed by me and by so many others.

As a freshman member of the House Armed Services Committee in 2001, I looked to IKE, then our ranking member, as a mentor and a guide on so many critical and complex issues facing the committee. Later, as the chairman of the House Armed Services Committee, his commitment to our troops and our security truly set the standard for all of us on the committee. And the example he set helped to bridge the partisan, geographical, and personal differences that have too often plagued us and stood in the way of progress.

□ 1940

IKE SKELTON has truly made a profound difference in advocating for and leading on behalf of our men and women in uniform to make sure that they always had the tools and the resources that they needed to do their job, do it well, and to come home safe.

Of course, as much as I have admired him as a leader on national security, let me just say that I have also felt a very separate and even more personal connection to IKE as well. IKE SKELTON, like me, has for many years lived his life with his own disability. And from those experiences, both of us have

learned at a young age that life often takes a very unexpected path. That path has led us both to a career that neither of us could have ever imagined or expected, lying in a hospital bed all those years ago and contemplating what the future might hold for us.

But clearly, IKE SKELTON overcame his own physical challenges and made a difference for others. And now, as his long and inspiring career in Congress nears its end, I wanted to offer Chairman IKE SKELTON my deepest and most profound gratitude for his leadership, his wisdom, and for his friendship.

IKE, it has been a true honor to serve with you. I thank you for the decades that you have dedicated to this House. I thank you for the difference that you have made in fighting on behalf of our soldiers, our men and women in uniform, fighting for them to make sure that they always had what they needed to continue to serve and be effective. This country and this House have been a better place because of your service.

Thank you, and God bless, and God-speed.

PEAK OIL—THE GROWING GAP

The SPEAKER pro tempore. Under the Speaker's announced policy of January 6, 2009, the gentleman from Maryland (Mr. BARTLETT) is recognized for 60 minutes.

Mr. BARTLETT. Madam Speaker, I have come to this floor nearly 50 times to talk about an energy subject. The last time that I was here in the well addressing this subject was about 2 years ago. During those nearly 50 appearances, I came here as a prophet. And now I return to the floor as a historian, because the event that I was concerned about and predicting has in fact occurred.

Let me explain. In the middle of the last century, two speeches were given by men just about a year apart. I am not sure they even knew each other. They both talked about the same subject. The first of those speeches was given in 1956. It was, I think, the most important speech of the last century. It was given by an oil geologist to a group of oil men in San Antonio, Texas, in 1956. At that time, the United States was king of oil. We produced more oil, we exported more oil, we used more oil than any other nation in the world.

M. King Hubbert predicted to that audience that in just 14 years the United States would reach its maximum oil production. That would be in 1970. And then we would produce less and less each year after that. Remember the context. The United States is in 1956 the largest oil producer in the world, the largest oil exporter in the world, the largest oil user in the world. This was an absolutely preposterous prediction. And so M. King Hubbert was relegated to the lunatic fringe.

Just a year later, about a year later, the father of our nuclear submarine

gave a speech in 1957, May 15, I believe, in St. Paul, Minnesota, to a group of physicians. The audience is irrelevant. You can Google and get this speech. It was found a few years ago, and it's now on the Internet. If you Google for "Rickover and energy speech" it will come up. His speech had nothing to do with the audience that he was talking to, because he could have been talking to any audience.

Hyman Rickover noted that we lived in what he called this golden age of oil. We had been about 100 years into that age of oil. And he noted how much of the quality of life that we enjoyed then was a result of having discovered how to exploit this resource that we found under the ground.

Every barrel of oil—and when I first heard this statistic I was unbelieving; how can it be?—every barrel of oil has the energy equivalent of 25,000 man hours of effort. That means when oil was \$12 a barrel, that wasn't all that long ago, you could buy the energy-enhancing qualities of a person working for you all year long, and you could buy it for \$1. Because there are 12 man-years of effort in a barrel of oil.

When I first heard that statistic, when I first read it, I thought, gee, that can't be true. And then I thought: I drive a Prius car, and it gets an honest, if you are careful the way you drive, about 50 miles per gallon, a little less in the winter. With the winter blends you don't get quite the same mileage. And you know, if I pushed my Prius 50 miles I could do that, but it would take me a long time to pull and push my Prius 50 miles. And just one gallon of oil, one out of the 42 gallons in a barrel of oil, will take my Prius 50 miles. So I thought, well, gee, that's probably true, isn't it, that there are 25,000 man hours of effort in one barrel of oil.

Hyman Rickover made what I think was an obvious statement. He was a scientist, of course, and he made what I think was an obvious statement, and that was that oil would not last forever. And he said that in the 8,000-year recorded history of man that the age of oil would be but a blip. He had no idea how long the age of oil would be. When he spoke, we were about 100 years into the age of oil. He did not know how long it would last, but he was certain that in the 8,000-year recorded year history of man it would be but a recorded blip.

We now know how long the age of oil will last. By the way, he made several very meaningful statements. One of them was that how long it lasted was important in only one regard. The longer it lasted, the more time we would have to plan an orderly transition to other sources of energy. Of course, we have done none of that.

We now know how long the age of oil will be. We are now about 150 years into the age of oil, and we are not going to run out of oil for a while. But what we are running out of is our ability to produce oil as fast as we would like to use it.

Back to M. King Hubbert and his speech just the year before Hyman Rickover gave his speech in St. Paul, Minnesota. Fourteen years elapsed; and sure enough in 1970, and we didn't know it in 1970 because we had to look back a few years after that to see that was it really true. But in 1970, we indeed did reach our maximum oil production in the United States. If you look back now at the oil production, it's very obvious that that was true.

By 1980, it was conspicuously true. We were really, really now moving down the other side of what is frequently called Hubbert's Peak. And so I tell audiences that we have now blown 30 years when we knew of an absolute certainty that M. King Hubbert was right about the United States: we did peak in oil production in 1970. And he predicted that the world would be peaking about now.

Now, it's very rational that the United States would be a microcosm of the world. And if he was right about the United States peaking in 1970, shouldn't we have had some concern that he might just be right about the world peaking about now?

□ 1950

We peaked in oil production in spite of the fact that we have found oil in Alaska and the Gulf of Mexico that M. King Hubbert did not include in his prediction. And in spite of the fact that we have now drilled more oil wells than all of the rest of the world put together, not only have we peaked in oil production, but we have slid so far down the other side of Hubbert's Peak that we now produce just about half the oil that we produced in 1970.

As a matter of fact, we have only 2 percent of the known reserves of oil in the world, and we use 25 percent of the world's oil. We really know how to pump oil because with that 2 percent of the world's reserves of oil, we pump 8 percent of the world's oil.

What that means, of course, is that on the average, our wells are going to run dry sooner than the average well around the world, because we are pumping our oil four times faster than the average well in the world.

I have some charts here that may illuminate what we have been talking about. I have not seen the sequence of these charts, and so we will just speak to them as they come up.

The first chart is what is known as the oil chart, "Peak Oil, the Growing Gap." If you had but a single chart to look at to tell the story of where we have come from and where we are going, this, I think, would be the chart.

As you can see it, it's a little out of date, because we were predicting the future back there in, what, about '05 and now we are at 2010. And when we get to that part of the chart, we will see how very correct this chart was in its prediction.

The vertical bars here are the discoveries of oil and when we discovered it, and notice that back in the late 1930s

and 1940s there were some meaningful discussion and, boy, they just crescendoed through the 1960s and the 1970s and some in the 1980s.

Now, this solid black line here is our consumption of oil. And, of course, the area under that curve indicates the total consumption of oil up to that time. So you can see, up until the 1980s, we were discovering oil faster than we were using it. So we were accumulating an ever bigger and bigger reserve of oil. That's all of this oil above that use line.

It's a production line and a use line. We didn't store any. We used it as we produced it, so it's both the pumping of oil and the consumption of oil.

Now, since the 1980s we have had to dip into these reserves because our discovery of oil has fallen down and down and down since the 1980s. As a matter of fact, we now find only about one barrel for every four or five or six barrels of oil that we pump.

Now, you can make some predictions about the future from this oil chart, how much oil would we be using. This is the world, by the way, oil production, and world use of oil and how much reserves do we have left and how long will they take us. You can make some guesses about how much more oil we will find, and we are now finding some meaningful reservoirs of oil. We may find a reservoir of oil that has 10 billion barrels of oil. Wow, that sounds like a lot of oil, doesn't it?

And maybe our concerns about the future of oil go away when we find 10 billion barrels of oil. We use 84 million barrels of oil a day in the world, and it's pretty simple arithmetic to figure out how many times 84 million goes into a billion, and it's a bit less than 12. What that means is that in less than 12 days the world uses a billion barrels of oil. What that means is when they tell you that we have discovered a field of 10 billion barrels of oil, that will last the world 120 days.

Now, how much more oil will we find? Much of the oil that we are finding now we are not pumping because you can't even develop those fields at, what, \$85, \$90 a barrel, wherever we are today with oil, because it has got to be more expensive than that before you can afford to develop these fields and pump the oil.

And, also in these new fields, which are generally very deep, maybe under 7,000 feet of ocean and 30,000 feet of rock—as some of the big finds in the Gulf of Mexico were—oil has to be a bit higher than it is today before you can afford to develop these fields and then one never knows how much oil you are going to get, in fact, from those fields.

Well, back to the oil chart here. If you look at, oh, here's the 1970s, remember the Arab oil embargo and the big shocks that we had in the 1970s? That produced some traumatic and very fortunate changes in the world, and its use of oil.

Notice, notice this exponential curve up to the 1980s, to the Arab oil embargo, the 1970s and 1980s. Had that continued, had that exponential curve continued, it would be now off the top of the charts. That was a real shock to the world's economy and to our country, and we developed some more efficient ways of using energy. So now with more people living better, the slope now is very much lower than that previous slope.

I just want to pause and reflect for a moment on this exponential function because it is a poorly understood function. When someone tells you that there is enough coal, for instance, to last us 250 years at current use rates, be careful to note that at current use rates.

Now the National Academy of Sciences says, in fact, we probably don't have 250 years of coal at current use rates. It's probably closer to 100 years of coal at current use rates because we haven't really looked at those reserves since the 1970s.

But let's say that we had 250 years of coal at current use rates, and we are going to increase its use only 2 percent. Now, that's not much. As a matter of fact, our stock market doesn't like an economy that's growing at only, at only 2 percent. But if we increase the use of oil just 2 percent, the 250-year supply drops to 85 years. You see, just 2 percent increase in growth doubles in 35 years; it's four times bigger in 70 years; it's eight times bigger in 105 years; it's 16 times bigger in 140 years.

There is a very interesting story about the exponential function. I don't know whether it's true or not, but it's a nice story.

Chess was invented in an ancient country, and the king was so impressed with the contribution that he told the inventor of the chess game that he would give him anything he wished up to half his kingdom. And the inventor of the chess game said I am a very simple man, I have simple needs. If you will just take my chess board and put a grain of wheat on the first block and two grains on the second and four on the third and eight on the fourth and just continue doubling those grains of wheat until you have reached the last of those, what, 64 blocks on the chess board, that will be adequate, sir.

□ 2000

The king thought to himself, silly fellow. I would have given him anything up to half my kingdom, and all he asked for is a few grains of wheat on his chess board.

Had he been able to make that contribution, of course, it would have consumed all, it would have consumed more than a decade of all the world's production of wheat. This is the exponential function, doubling it. So whenever you hear somebody say, we have so much of gas or coal or oil or whatever it is at current use rates, please calibrate that. What does it mean if we increase its use? And by the way, we

are going to be needing to use coal for things other than just coal and stoking a furnace and making electricity. We would like to make some oil out of it as Germany did during World War II and South Africa did. And you can make some gas out of coal. And if you use some of the energy from coal to convert it to a gas or a liquid, if you have this 250 years—which we don't—and it drops to 85 years at only 2 percent growth rate, it then drops to 50 years if you use some of the energy and divert it to gas or liquid.

And then there's another very interesting reality that you will deal with whether you like it or not. You will share your oil with the world. You can't avoid it because if you were using the oil you've produced from your coal, someone else will be buying the oil from Saudi Arabia that you might have bought. So the reality is that you will share it with the world. Since we use one-fourth of the world's oil, 4 goes into 50 $12\frac{1}{2}$ times. What that means is that now this 250 years of coal, reduced to 85 years with only 2 percent growth, reduce to 50 years if you use some of its energy to convert it to a gas or a liquid, and then it shrinks to $12\frac{1}{2}$ years as you share it with the world, as you must, because there is no alternative if you use oil produced from your coal; someone else will buy the oil you might have bought from Saudi Arabia or some other oil-producing country.

Well since the 1980s we have been consuming some of the reserve because we've not found enough oil to meet our needs. Now this chart, as you can see, the actual known amounts, ended in about 2005. And then you see the lighter shaded part on the other side where it shows their prediction. And they predicted that oil production worldwide was going to peak in about 2010. Here we are. Now I think a little later we will have some charts that show, in fact, that that was true.

Now what happens from now on? You can make your own guesses as to what is going to happen from now on, you can make your own assumptions. We have still much of this reserve left that we can pump, fortunately. This amount we've pumped here is just about this amount. So we have about this whole amount here covered by my hand that we can yet pump.

Now we're going to find some more oil. The chart here shows an orderly downward progression because the more you find, the less there will be to find in the future, so the less you are going to find in the future. It will not be like that. It will be up and down like this, but it is going to be down and down because most of the large fields that will be found have been found. So you can make your own assumptions about where this is going in the future by assuming how efficient can we get, how much conservation are we going to do, how much more oil will we find. But from this oil chart, you can do a lot of predicting about what the future is going to look like.

This next chart is a quote from Admiral Hyman Rickover in this talk that I mentioned that he gave to this group of physicians in 1957. There is nothing man can do to rebuild exhausted fossil fuel reserves. They were created by solar energy 500 million years ago. It took eons to grow to their present volume. In the face of the basic fact that fossil fuel reserves are finite, the exact length of time these reserves will last is important in only one respect—the longer they last, the more time that we have to invent ways to live off renewable or substitute energy sources and to adjust our economy to the vast changes which we can expect from such a shift.

Now, of course, we have done none of that. We and the world in general have behaved as if all you need to do to find more oil is to go look for more oil and it will just be there if the market incentives are appropriate.

I love this next paragraph: Fossil fuels resemble capital in the bank. A prudent and responsible parent will use his capital sparingly in order to pass on to his children as much as possible of his inheritance. A selfish and irresponsible parent will squander it in riotous living and care not one whit how his offspring will fare.

This is Hyman Rickover's statement. One might conclude looking at the behavior of our civilization that this is precisely what we have done. I have 10 children, 17 grandchildren, and two great grandchildren. Would it be okay if I wanted to leave them a little oil? We are leaving them a huge debt. And wouldn't it be nice if they had some oil, gas and coal? Now they will have some. But as we will see in future charts, it will not be what they would like to have.

This is a fairly new chart, and it shows what I predicted. I said that I was a prophet because nearly 50 times I came to the floor, the last time about 2 years ago, then I was predicting that conventional oil was going to peak. And here they show it. This is the dark blue. Look at it. 2010, it's peaked. And they recognize that the world situation will not be meaningfully different from that in the United States, that it's going to go down, down, down. And here it goes.

Now they're making an assumption here that you may or may not agree with. I hope they are right. I doubt that they are right, because what they say here, and this is crude oil fields yet to be developed, and this red is crude oil fields yet to be found. And they believe that by 2030, that's not very far in the future, that by 2030, about two-thirds of all the oil that we will be using will have come from fields yet to be developed and fields yet to be found.

Now there are many experts in oil that will tell you that this is a happy dream, that there is little chance that that is going to happen. Now we have some other sources of oil. We have natural liquids, and they see those growing. We have nonconventional oils, and

they will grow somewhat. These are heavy, sour oils, for instance, the kind that we get from Venezuela. It's the oils that we get from the oil sands in Alberta, Canada, at considerable expense of energy, environment, and so forth. Well this same chart produced 2 years ago would not have looked like this because just 2 years ago, the same people that give you this chart today would have had conventional oil production going up and up. So now there is a recognition that conventional oil production has, in fact, as predicted by M. King Hubbert, peaked in the world. It peaked in our country in 1970.

The next chart shows some detail of that peaking. There are two entities in the world that do a really good job of tracking the production of oil. They do not do as good a job in predicting the future of oil production. They do a very good job in tracking how much oil is being produced. One of those is a part of our Department of Energy, the EIA; the other is a creature of OECD, the IEA, and you see those two curves here, and they both show essentially the same thing, and that is, in the 3 years before the recession, oil production was flat across the world, 84 million barrels, a little over 84, 85 million barrels a day of oil production.

Now, pretty simple economics: With flat production and increasing demand, what happened to the price of oil? Oh, here it is. Now this chart only goes to less than 100. You remember it went to \$147 a barrel a little bit later off this chart? Well now we had the recession worldwide and demand for oil dropped conspicuously.

□ 2010

The price of oil momentarily dropped from \$147 a barrel to less than \$40 a barrel. The world's economy has begun to recover now, and the price of oil is slowly inching up. It is \$85, near \$90 a barrel.

I am reading a book brought to me by an oil scientist, an engineer from Canada, and he makes a prediction that I have been making, so I have some additional confidence that I can restate that prediction. It is that unless we do something really serious about conservation and about efficiency and about husbanding the fossil fuels that we have remaining, that the next recovery will be short lived; because as the world recovers, it will demand more oil and there will not be more oil because we have plateaued, and so the price will go from \$100 to \$150 to \$200 a barrel and the economy will be squelched.

Four years ago I led a codel of nine Members of Congress to China to talk about energy. I was stunned. They began their discussion of energy by talking about "post oil." Now, in our country and in the Congress here we have a lot of trouble thinking beyond the next election because it is really important that you get yourself re-elected. And our businesspeople have trouble thinking beyond the next quar-

terly report because, gee, that better look good or the stockholders are really unhappy and the board of directors may replace you if that doesn't look good. So it came as quite a surprise to me that here are people who are looking a long way down the road. We are not post oil yet.

By the way, I say we know how long the age of oil will be, and it will be about 300 years. Hyman Rickover said that in the 8,000-year recorded history of man, the age of oil would be but a blip. He had no idea how long it would be in 1957 because we were there on the ascending part of Hubbert's peak. But he knew that it was finite and he knew that it couldn't last forever and knew that in the 8,000-year recorded history of man that the age of oil—the golden age, he called it—would be but a blip. We now know how long the age of oil will be. It will be about 300 years.

We are about 150 years into the age of oil, and we are not running out of oil. There is a lot of oil left out there; at least as much more oil to pump as we have pumped in the last 150 years. But for the future, that oil will be ever harder and harder to get and more and more expensive. We are now slipping down the other side of Hubbert's peak.

We have talked a lot about Hubbert's peak, and here is some old data on Hubbert's peak. It went up in 1970, and then down. You see where we are today. The actual is the green squares there. We now are down to less than half the oil that we have produced in 1970. That is, again, from drilling more wells than all the rest of the world put together, from finding oil in Alaska and the Gulf of Mexico, which we didn't expect to find.

There are two other interesting things on this chart. Hubbert's prediction was the little yellow triangles here. The actual production from the lower 48 is the green. If you add the oil we found—and remember the huge find of oil in Canada and Alaska, and I have been there. I have been at the beginning of that 4-foot pipeline. It was just a blip in the downward slope of Hubbert's curve. Now, there are those who would like to convince you that Hubbert didn't know what he was talking about because there is a huge difference, they will tell you, between his actual prediction and those green rectangles.

Now, I think the average person looking at that would say, gee, he got it pretty close, didn't he. Now a statistician looking at it might say he kind of missed it. He predicted that we would peak in 1970. We peaked in 1970. We are now about half of what we were producing in 1970.

I mentioned, when we put our first chart up, that if you had only one chart, that would be it. I think if you were allowed a second chart to give you some idea of the challenges we face, this would probably be that second chart.

This is the world according to oil. This imagines a world in which the sur-

face area of a country is relative to how much oil the country has. So the more oil the country has, the bigger it appears on this map; and the less oil a country has, the smaller it appears on this map. And then the things are colored. The coloring is who uses the oil. Well, you can't read this, but yellow is the biggest users of the oil. That shouldn't surprise you. That is us. The blue is the next biggest users, and green next down the line.

Well, look at this chart. Saudi Arabia is pretty big. As a matter of fact, it is 22 percent of all of the land mass in all the world if the surface area of a country is relative to how much oil it had.

And look at little Kuwait there. It looked like a little province on the corner of Iraq to Saddam Hussein when he wanted to claim it. Wow, look at how much oil it has—just about as much Iraq has. And Iraq and Kuwait and Iran are big oil producers.

By the way, look at Iran there. It is a pretty big oil producer, and notice its color. It is blue. It uses a lot of oil. Not nearly as much as we use, but it uses a lot of oil. The truth is that, within a decade, Iran will be an oil importer if their domestic use continues at its present rate and they do not increase their production.

Just looking at production in these OPEC countries, back when the world could produce more oil than it might use, if they produced extra oil, it simply drove the price of oil down. Remember when OPEC got together and decided to reduce the production of oil so we can keep the price up. And then they said the amount of oil that you can pump is a certain percentage of your reserves of oil. So OPEC countries that wanted to pump more oil, they just suddenly had bigger reserves of oil without finding any new oil. They just said they looked at it again, the statistics, and they had more oil than they thought. Well, having said that, they could then pump more oil. So we really aren't sure what the size of these countries are, but they are big. But we aren't sure how big, because we are not sure how truthful they were in what they said about their reserves.

By the way, they pumped oil for 10 years, and they still had as much oil to pump as they had 10 years ago, without finding any new oil. So there is a lot of suspicion about how much oil is really there. But there is a lot of oil there, and the size of the countries, the oil reserves are relatively what is shown here.

Our biggest importer of oil is Canada. Until a bit ago, our second largest importer of oil was Mexico. That has been replaced now by Saudi Arabia.

Look at Canada and Mexico. They don't probably have much more oil than we have. Canada has way less than we have, maybe half to a third, yet they are our biggest importer. They can do that because they don't have very many people in Canada to use the oil.

Mexico, which has two-thirds as much as we, they were our biggest exporter of oil. We got the second largest amount of oil from Mexico until recently. They have a lot of people, but they can't afford to buy the oil, so they are exporting the oil.

□ 2020

The second-largest oil field in the world was the Cantarell oil field in Mexico. This was an interesting field. There was a Mexican fisherman by the name of Cantarell, who brought his fishing nets in, because they were fouled with oil, and took them up to Pemex, which is the national oil company in Mexico. If your fishing nets are fouled with oil, you know who to go to because all of the oil is owned by the national company there.

So they finally said, Gee, where are you finding all this oil? We didn't know we'd spilled that much oil.

He said, Come. I'll show you.

He showed them, and it was kind of bubbling up out of the ocean, and they had drilled there.

For a number of years, it was the second-largest oil field in the world. The largest, of course, is the huge Ghawar oil field in Saudi Arabia. The Cantarell oil field in Mexico is now in rapid decline, falling about 20 percent a year.

Look at Venezuela. Wow, it dwarfs us, doesn't it? Venezuela has—what?—two, three times the amount of oil that we have.

See if you can find Europe on this map. Here they are. They're tiny, tiny little countries. Lots of people. Little oil. Dependent on somebody else.

The really remarkable thing, though, is China. It is blue over there. It's getting close to yellow. Just a few months ago, China surpassed us as the largest CO₂ emitter in the world. There are 1.3 billion people in China.

Look at India. Dwarfed. Dwarfed by China. Here it is. There are a billion people in India. Through the miracle of communications, these people know the benefits of an industrialized society, and they are demanding of their leadership those benefits, so there is a huge, huge demand for energy in China and India, and they have very little.

Russia. I think Russia is now the largest exporter of oil in the world. They don't have the most oil, not by a long shot, and most Russians are too poor to use much oil. They are very aggressively developing their oil fields, and so Russia is now a major exporter of oil. But note the relative size of Russia. I would think Kuwait is probably larger than Russia, isn't it?

Well, you can imagine all of the geopolitical frictions that are going to occur in the future as the availability of oil becomes less and less, as it is harder and harder to get and as its price goes up and up. What do you think will happen with the demands and the tensions in the world?

Well, as I've said, if you had two charts to look at, the oil chart—the first one we showed, I think—would be

the first one. This would be the second one because there is an awful lot that you can conclude and surmise from this chart.

Now, this chart was implicit in the last chart that we showed you, but this shows it more dramatically. This left-hand bar is the top 10 oil and gas companies on the basis of oil production in 2004. That was a few years ago, and it would be a bit different now.

Gee, here are the big boys, those huge corporations that can have a \$1 billion profit, which is not excessive because it's a lesser percentage than the smaller, profitable, little company. Here they are: Exxon Mobil, Royal Dutch Shell, BP. They have only 22 percent of the top 10 production. Seventy-eight percent of that is all in country-owned oil facilities. Look at them: Saudi Arabia, Iran, Mexico, Venezuela, and so forth.

Now, the picture is even more distorted if you look at the right-hand bar. These are the top 10 oil and gas companies on the basis of oil reserves in 2004. The big actors in our country don't even show up on that chart. They own so little oil that they're not even among the top 10. They don't even exist on that curve. There is only one that is only kind of not national, and that's Lukoil, in Russia, which is 2 percent. Otherwise, all of the reserves, the top 10 largest reserves—all of those—are owned by countries rather than companies.

I mentioned that I went to China. I led a CODEL there—there were nine of us—to talk about energy. They began their discussion of energy by talking about “post oil.” That kind of blew me away that they were thinking this far ahead. Then they had a five-point program, and everybody knew it. It wasn't just the people concerned about energy. Everybody we talked to in China was tuned into this five-point plan:

Conservation. You know, there is a lot of conservation back in the Arab world.

Do you remember the van pools? We didn't have any cell phones then and no Internet, but we had 1-800 numbers, and you were encouraged to get in van pools.

Do you remember the little decals over the light switch? Don't be foolish—turn out the light when you're not in the room. Do you remember the decals over the thermostat? Turn it up in the summertime and down in the wintertime. Do you see any of those things now?

We knew then it was only temporary. I am having a lot of trouble understanding our collective response to these two situations. Back then, we knew it was temporary. We didn't have enough oil because the Arabs wouldn't sell us the oil. They had plenty of oil to sell. They just were unhappy with us for the moment, and they wouldn't sell us the oil. Yet we did rational things in conservation: We got more than one person in a car. We, you know, turned off the light switch. We turned up the

thermostat in the summertime and down in the wintertime.

I have no idea why, collectively now, we don't have this kind of a response when oil is more than \$80 a barrel and when there is a growing recognition that the world has reached its maximum production of conventional oil, and we will be more than lucky if we can find enough unconventional oil, or new oil, to make up for the loss that we are going to have in conventional oil as we slide down the other side of Hubbert's peak.

Conservation, what is it? Conservation is using a Prius instead of a gas-guzzling SUV. That's efficiency, I guess, too. If you put two people in it, then it's really conservation, isn't it?

I remember driving down the road, with two of us in our Prius, and we passed an SUV. I thought, gee, we're getting—what?—six times the miles per gallon, per person, in this Prius at 50 miles per gallon than that one person is getting in that SUV. We could almost immediately, if we had to, if we had the will to, drastically cut our use of energy for transportation. Drive down the road, and see how many people are in the HOV lane. Look at how many of our people are driving with one person in a pickup truck or an SUV.

A bit ago, I was in France, and I was looking at how many people were driving pickup trucks and SUVs for personal transportation. On that trip, I did not see a single SUV. On the trip before, I saw one. They weren't driving it. It was parked in the parking lot up at that church up on the hill. I don't know how long it had been there. As far as I can see, they don't even make in Europe the equivalent of our passenger pickup trucks. They have some little trucks that are about the size of ours, but they aren't vanity kinds of trucks. They are ugly, little things that are really utilitarian. They carry stuff around. It's not something you would buy to carry yourself back and forth to work.

There are enormous opportunities for conservation. This is where China says it begins.

Then they say: Domestic sources of energy and diversify as much as you can. That's what everybody is trying to do, and many of those domestic sources will be alternative sources of energy.

Then the fourth one is very interesting: Be kind to the environment. They recognize that they are a huge polluter, but they have 900 million people in rural areas who, through the miracle of communications, as I mentioned, know the benefit of an industrialized society.

They're asking, Hey, what about us?

□ 2030

And China, I believe, understands that if they can't meet the needs of those people, that they may see their empire begin to unravel the way the Soviet empire unraveled. So they understand that although there is a huge

environmental consideration, there is an even bigger consideration on their part to supply energy for these 900 million people in rural areas. So they build a coal-fired power plant, about one a week—I forget the number, a fairly large number of nuclear power plants that are presently under construction.

The fifth part of this is a really interesting one, international cooperation. They know that there is nothing really meaningful that any single country can do, and so they plead for international cooperation. I was so impressed in that picture when they looked back over their shoulder on their way to the Moon, and you saw this little spaceship that we call Earth, and that's it, that's all there is, and there's nearly 7 billion of us living on it.

And so they recognize that this has got to be a global, international cooperation; or it's going to be really tough. But while they plead for international cooperation, they plan in the event that there won't be any.

Here is a chart, a world energy picture in January—this is '05, so they would have acquired some more oil since then—and you can see the little symbol here for Chinese investment in oil and gas. They are buying oil and gas all over the world. And I asked the State Department, why would they do this because today it doesn't make any difference who owns the oil. We own only 2 percent of the oil, and we use 25 percent of the oil; that's because we go to what is in effect a global market for oil and we bid and we get 25 percent of the oil. So today there is no advantage in owning oil. So why would the Chinese be going around the world aggressively buying oil and gas? By the way, they almost bought an oil company in our country. You remember all the furor over that when they almost bought that oil company here.

Well, at the same time China is buying gas and oil around the world, they are also buying goodwill. What do you need, an airport? Hospital? Soccer fields? Roads? Watch the newspapers at what China is doing as they go around the world buying this gas and oil.

Well, at the same time they are buying gas and oil around the world, they are very aggressively building a blue water navy. Now a major concern of China is Taiwan, a little country the size of Maryland, 23 million people—we have about 5 or so—three-fourths uninhabited because it's mountainous. Oh, gee, you can inhabit mountains. But I went to Taiwan. You don't inhabit those mountains. They are really, really steep.

China has 1.3 billion people. Why are they so concerned about Taiwan? I had the privilege of spending about an hour and a quarter, an hour and a half or so and we explored that. The concern of course is that if Taiwan can declare its independence, so can a number of other provinces; and they see their empire unraveling. And so I hope, pray, please,

tonight that we can resolve Taiwan issues through diplomacy rather than war.

Well, at the same time they are buying all this gas and oil and buying goodwill around the world, they are also aggressively building a blue water navy. They don't need a blue water navy to protect their interests in Taiwan; a brown water navy will be just fine there, thank you. I believe—I hope I'm wrong—I hope I'm wrong about a lot of things, by the way—every time I came to the floor, just about 50 times, and talked about peak oil I said I hope I'm wrong, because if I'm not wrong, the world faces some real challenges. By the way, that's not all bad. There is nothing so exhilarating as meeting and overcoming a big challenge, and the energy future that we face is a huge challenge. So I find it exhilarating.

Remember the exhilaration of putting a man on the Moon? We need to have that same kind of exhilaration. What are we going to do so we can continue—not just us, but my 10 kids, my 17 grandkids and my two great-grandkids, so that they can live as well as we're living? We're going to have to be very creative and innovative, and we can do that in our country.

I hope that the day does not come when China says, gee, guys, I'm sorry, but it's our oil and we can't share it because we don't have enough for our people, and we have a navy big enough to say that we're not going to share it. I hope that day doesn't come.

There are three groups that have common cause in solving three very different problems with exactly the same remedy, and these three groups are forever harping at each other, criticizing each other's premise instead of locking arms and marching forward, because the solution to three very different problems is just about exactly the same solution.

One of those groups is the group that these statistics identify that are really concerned about our national security. We have 2 percent of the oil reserves in the world. We pump that oil, I mentioned earlier, really fast. We produce 8 percent of the oil. We have only 5 percent, a little less than 5 percent, of the world's population and we consume 25 percent of the world's oil, importing about two-thirds of what we use.

Now what is the solution to this? The solution to this is to develop more of our own oil if we can, but that's really tough because we are now really down the other side of Hubbert's Peak. So the ultimate solution to that is alternatives. So those who are concerned about national security want to free ourselves from dependency on foreign oil by using alternatives because of national security interests.

A second group we've been talking about all evening are those that are concerned that it just is not going to be there. Of course, the solution to diminishing supplies of fossil fuels is to supplement them with alternatives.

And there is a third group that we haven't talked about yet—and I am

kind of a card-carrying member in all three of these groups—and that is a group that's concerned about climate change. Now, I don't know if they're right or wrong, but what I do know is that what they want to do about that is exactly the right thing to do from a national security perspective.

It's exactly the right thing to do, if you believe in climate change or peak oil. These three groups all have exactly the same solution to very different agendas. What we ought to be doing is stop harping at each other's premise and simply lock arms, because whether you believe that the excessive use of fossil fuels is changing the climate or not is irrelevant because excessive use of fossil fuels is certainly diminishing their supply. And from our perspective, a national security perspective, we don't have enough of them. So the solution to all three of these problems is more dependency on alternative fuels.

We are near closing time, and I just want to point out—and we'll come back again because there are some wonderful quotes from these five reports—four studies, but two are reports from one study. Your government has paid for four different studies; all of them were prophetic. As I mentioned, we are now historians because peak oil has occurred. But all four of these studies were saying—they were in '05, '06 and '07. And your government didn't like the conclusions of the first one in '05, and so they had another one in '06, another one in '07. They all said the same thing.

□ 2040

The peaking of oil is either present or imminent with potentially devastating consequences. We still aren't paying much attention to this, are we? With the world's economy still floundering and oil already at more than \$80 a barrel, what do you think will happen to the price of oil when the world's economy really starts to come back?

Well, let's end our discussion here tonight. I have been pleased to spend these moments with you talking about something that's very important to me but I think even more important to my 10 kids, my 17 grandkids, and my two great grandkids.

When we come back again, we're going to talk about these reports and what they said, and we'll have some quotes from these reports.

Thank you, Madam Speaker.

LEAVE OF ABSENCE

By unanimous consent, leave of absence was granted to:

Mr. HASTINGS of Florida (at the request of Mr. HOYER) for today.

SPECIAL ORDERS GRANTED

By unanimous consent, permission to address the House, following the legislative program and any special orders heretofore entered, was granted to:

(The following Members (at the request of Mr. SMITH of Washington) to