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SPECIAL ORDERS

The SPEAKER pro tempore. Under the Speaker's announced policy of January 4, 2005, and under a previous order of the House, the following Members will be recognized for 5 minutes each.

The SPEAKER pro tempore. Under a previous order of the House, the gentlewoman from New York (Mrs. MCCARTHY) is recognized for 5 minutes.

(Mrs. MCCARTHY addressed the House. Her remarks will appear hereafter in the Extensions of Remarks.)

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

(Mr. BILIRAKIS addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

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

(Mr. DEFAZIO addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

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

(Mr. HUNTER addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

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

(Mr. EMANUEL addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from North Carolina (Mr. JONES) is recognized for 5 minutes.

(Mr. JONES of North Carolina addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from New Jersey (Mr. PALLONE) is recognized for 5 minutes.

(Mr. PALLONE addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

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

(Mr. BROWN of Ohio addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

The SPEAKER pro tempore. Under a previous order of the House, the gentlewoman from California (Ms. WOOLSEY) is recognized for 5 minutes.

(Ms. WOOLSEY addressed the House. Her remarks will appear hereafter in the Extensions of Remarks.)

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

(Mr. OSBORNE addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from California (Mr. GEORGE MILLER) is recognized for 5 minutes.

(Mr. GEORGE MILLER of California addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from North Carolina (Mr. MCHENRY) is recognized for 5 minutes.

(Mr. MCHENRY addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

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

(Mr. BURTON of Indiana addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

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

(Mr. GOHMERT addressed the House. His remarks will appear hereafter in the Extensions of Remarks.)

ENERGY PRODUCTION AND SUPPLY

The SPEAKER pro tempore. Under the Speaker's announced policy of January 4, 2005, the gentleman from Maryland (Mr. BARTLETT) is recognized for 60 minutes as the designee of the majority leader.

Mr. BARTLETT of Maryland. Mr. Speaker, recently our Secretary of State, Condoleezza Rice, made a statement that I would like to read. In this statement she said: ''We do have to do something about the energy problem. I can tell you that nothing has really taken me aback more as Secretary of State than the way that the politics of energy is, I will use the word 'warping diplomacy,' around the world. We have simply got to do something about the warping now of diplomatic effort by the all-out rush for energy supply.''

Mr. Speaker, the 8th of this March was a really historic date, and it passed and really very few people knew how historic it was. It was 50 years since a report given in San Antonio, Texas, by a world-famous scientist. And I will talk about that a bit more in a few minutes.

The 15th of March of this year marked one year from the date that I first came to this floor to talk about the problem that Condoleezza Rice was talking about, about the energy problem; and since that time I have been to the floor several times to talk about that. Since then, there have been two major government studies on this same topic. One of them is known as the ''Hirsch Report,'' from Robert Hirsch, who was the principal investigator for SAIC, a very large prestigious scientific engineering organization.

This study was sponsored by the Department of Energy; and for several months after the report was available, it was kind of bottled up inside the agency and we were kind of asking the question, why wasn't it out on the street sooner because it really makes some very significant points.

A second study was done at the request of the Army by the Corps of Engineers. And I have those two reports here. Here is the ''Peaking of World Oil Production: Impacts, Mitigation and Risk Management.'' The project leader was Dr. Robert Hirsch. And here is that report, paid for by our Department of Energy and done by SAIC. That was dated February of 2005.

A few months later, in September of 2005, a report by the Corps of Engineers, and here is a copy of that report, which just got out to the street about 3 months ago, by the way. So for a number of months this was bottled up inside the Pentagon. Both of these reports say essentially the same thing, and I would like to spend a few minutes this afternoon talking about what these two reports say.

The first is a quote from the ''Energy Trends and Their Implications, U.S. Army Installations.'' And, Mr. Speaker, anywhere in this report that the Army is mentioned, you could put the United States in, or for that matter the world, and it would have the same meaning. But since they are a part of the Army and this was an Army study, they talk about the Army.

This first statement: ''In general, all nonrenewable resources,'' and fossil fuels are generally perceived of as being in the time scale that we are concerned about, nonrenewable. ''In general, all nonrenewable resources follow a natural supply curve. Production increases rapidly, slows, reaches a peak, and then declines at a rapid pace similar to its initial increase. The major question for petroleum is not whether production will peak, but when. There are many estimates of recoverable petroleum reserves, giving rise to many estimates of when peak will occur and how high the peak will be. A careful review of all of the estimates leads to the conclusion that world oil production may peak within a few short years, after which it will decline. Once a peak occurs, then historic patterns of world oil demand and price cycles will cease.''

And the next is a quote from the ''Hirsch Report'': ''World oil peaking is going to happen,'' saying the same thing as the Army Corps of Engineers. And, by the way, we have no reason to believe that there was any interchange between these two groups that were doing the study. ''World oil production is going to peak. World production of conventional oil will reach a maximum and decline thereafter.'' Exactly the same thing that the Army Corps of Engineers was saying. ''That maximum is called the peak. A number of competent forecasters project peaking within a decade, others contend it will be later. Prediction of the peaking is extremely difficult because of geological complexities, measurement problems, pricing variations, demand elasticity, and political influences. Peaking will happen, but the timing is uncertain.''

''Oil peaking presents a unique challenge,'' they say. And then this astounding statement: ''The world has never faced a problem like this.'' There is no precedent. You cannot go back in history to find a problem like this. They say: ''The world has never faced a problem like this. Without massive mitigation more than a decade before the fact, '' and most of the world experts believe we do not have a decade, in fact, we may be there, ''without massive mitigation more than a decade before the fact, the problem will be pervasive and will not be temporary. Previous energy transitions, wood to coal and coal to oil, were gradual and evolutionary. Oil peaking will be abrupt and revolutionary.''

The next chart shows that these same data inspired 30 prominent Americans, Boyden Gray, Jim Woolsey, and Frank Gaffney, and 27 other very prominent people, among them several retired four-star generals and admirals, to write a letter to the President. In effect what they said was, Mr. President, the fact that we have only about 2 percent of the world's reserves of oil, and we use 25 percent of the world's oil and we import about two-thirds of what we use, presents a totally unacceptable national security risk. We really have to do something about that.

As the chart shows here, we represent a bit less than 5 percent of the world's population, about 1 person out of 22. And we are really good at pumping our oil. We have only 2 percent of the reserves, which from that 2 percent of the reserves we are pumping 8 percent of the world's oil, which means we are pumping our wells four times faster than the average.

Now, what are they talking about? As the next chart shows, this was all predicted quite awhile ago. To understand the history of this, to put it in context, we have to go back more than half a century to the 1940s and 1950s. A scientist by the name of M. King Hubbert was working for the Shell Oil Company, and he observed the pumping and the exhaustion of individual oil fields. The United States was pretty much first on the scene in any large way. At one time we were the world's largest producer of oil, and I believe the world's largest exporter of oil. And right when we were in our heyday in 1956, M. King Hubbert went to San Antonio, Texas, and gave that famous paper I referred to a few minutes ago, saying that in just 14 years, in about 1970, the United States would peak in oil production; we would reach a maximum.

Shell Oil Company did not believe that was going to happen and cautioned that he would make himself a fool and them a fool for hiring him if he went to give that paper and published it. And he went anyway. Then 14 years later, right on schedule, we peaked in oil production.

The smooth green curve here was the M. King Hubbert's curve. The more ragged green curve with the larger symbols is the actual production data. And you see that that peaked in 1970 and then fell off. Now, this is the lower 48. In just a moment, we will put another chart up here which shows what happens when you include the Alaskan oil finds.

This is the lower 48, and this is what has happened in the lower 48. The red curve there, by the way, is the former Soviet Union, and they kind of came unglued when the Soviet Union fell apart. You see that their production did not reach the potential. They are already on the downside, by the way. They have somewhat more oil than we. They peaked a little bit later. They had a second small peak, but then it is all downhill after that.

The next chart shows where our oil has come from in our country. And the rest of the U.S. and Texas, the dark blue and light blue, are what M. King Hubbert was talking about, and these are the actual data points from 1935 to now. We have added to this now the natural gas liquids and the Alaskan oil find, that big oil find in Alaska, Prudhoe Bay, Dead Horse. I have been there, at the very beginning of that 4-foot pipeline through which about a fourth of our domestic production has been flowing. That is on the downside now, by the way, and it is becoming less and less. Notice that there was just a blip and the slide down the other side of Hubbert's Peak with that big Alaska oil find.

The thing on this chart, Mr. Speaker, which interests me is that little yellow there on the downside. Just a blip. A small blip. That is the famed Gulf of Mexico oil find. You may remember that. It wasn't all that many years ago we found that, and, boy, that was a lot of oil. There are now 4,000 oil wells out there in the Gulf of Mexico. And that was to save us. It just barely, barely is a ripple in our slide down the other side of Hubbert's Peak.

The next chart puts this in world perspective. We have been talking about the United States, and now this takes us to the world. The big bars here are the discovery of oil, and you will notice some of that was found way back in the 1940s, some big discoveries, then the 1950s, and, boy, the 1970s and the 1980s. But notice that since 1980, the finds of oil have been ever less and less, and that is in spite of really good techniques for finding oil.

We now have 3D seismic, we have computer modeling, and we have been very aggressive. You see, since about 1980, we have been finding less oil than we are using, because the consumption curve here is this solid black line. At about 1980, you see there the consumption of oil exceeded the oil that we were finding. So for that period between 1980 and now, the deficit between what we found and what we are using has been filled with reserves that we have. Worldwide, pretty big reserves.

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Not much in our country because we have been pumping our oil for a long time, very aggressively.

This is an interesting chart, and anyone who works with these charts knows that the area under one of these curves represents the total amount available. So if you add up all of these little bars, we made a smooth curve through the discovery here. The area under that discovery curve would represent the total amount of oil that we have discovered. Similarly, the area under the consumption curve will represent the total amount of oil that we have consumed.

Now, what is very obvious is that you can't consume oil that you haven't found. So what does that mean? Now, you can have any projection for the future that you like. You can assume that we are going to do a lot of enhanced oil recovery, that we are going to find a little bit of oil, most experts believe there isn't that much left, the little bit of oil that remains and pump it very quickly.

But one thing is certain: you cannot pump what you haven't found. And so ultimately the area under the consumption curve cannot be greater than the area under the discovery curve.

Notice that they are suggesting in this little chart that peaking is going to be at about 2010. Some believe that it may have already occurred.

The next chart is an interesting one from the Energy Information Agency, and they use a very strange, in a way, bizarre application of statistics. We have the 95 percent probability in statistics which is the most probable, and something is significant if it is the 95 percent probability. It is highly significant at 97. You can go on down with the 50 percent probability or a 5 percent probability.

You can get a little sense of these probabilities when you look at the little chart they draw about a hurricane's path. You notice that for the next 24 hours it is a fairly narrow funnel, and then it gets wider and wider as they go out because of the increased uncertainty as you go out.

Well, here the Energy Information Agency has drawn the oil curve, and you see that they peaked in 1970. We have been going downhill ever since. And back there, a little bit before 2000 I guess on this graph they made a projection of where we were going. Now, they are using these statistics you see at the bottom down there, the past, which is the red line, and then the 95 percent probability and the mean, which is the 50 percent.

The 50 percent probability is not the mean, Mr. Speaker. If you were going to draw this chart realistically, you would have to have another green line that came as far below the yellow line as that one is above it like here, and another blue line that is down here. They are using the 50 percent probability as if it were the mean and saying that is the most probable. Of course in statistics, 95 percent probability is obviously more probable than the 50 percent probability.

Well, this bizarre use of statistics results in something that the next chart will show. But just a moment on this one. Notice what has happened since they made this projection. Notice where the red line has been going. It has of course been following the 95 percent probability, although they believe that it should be following the 50 percent probability, or the green line. In other words, we should be finding more and more oil.

The next chart looks at that in another way. By the way, they say here the probability, they say 95 percent is low probability. That is the highest probability. I have no idea how you get this warped statistic; 95 percent is the highest probability. The 50 percent probability is not the mean, and the lowest probability is 5 percent.

Well, they mean that the lowest amount of oil you would find is a 95 percent probability. The highest amount is 5 percent. But the 5 percent could just as well be the other side of the 95 percent probability which would be really, really low.

Well, here is a graph that they have drawn, and this graph points out something very interesting, the peak for the 95 percent probability, which says that the world had totally about 2,000 gigabarrels of oil. By the way, we use ''giga'' rather than billion because in England a million million is a billion. In our country it is a thousand million, which is a billion. But giga means the same thing to everybody world around, so we use gigabarrels.

If we have in fact 2,000 gigabarrels total, we have used about a thousand of that, and about a thousand remains, which means that we are at this point here; and this should start sliding downhill after that. But they have imagined another thousand gigabarrels of oil to be found; and if that is true, notice that moves the peak out only to 2016.

We are using oil at such a horrendous rate in the world, that even if we found 50 percent more oil than we have ever found, that moves the peak out only that far. And then they show what happens if you go out to 2037. If you have enhanced oil recovery and so forth and get that much more, look what happens. Look at the way it drops there.

The next chart is an interesting one. It shows the same thing pretty much that we showed in that big oil chart that showed the discovery curve. And these are, this is the relationship of discovery to use. Notice, in about 1980 here, we started using more than we had discovered. So this curve says the same kind of thing that the previous one said, only this shows the relationship of discoveries to use.

The next chart is another statement from the ''Hirsch Report,'' and I want to spend a few minutes now on these two reports because they are really very meaningful reports. I will note, Mr. Speaker, that both of these reports have come out in the past year after we gave our first discussion here a year ago, the 14th of March.

This again is from the ''Hirsch Report.'' The peaking of world oil production presents the United States and the world with an unprecedented risk management problem. As peaking is approached, liquid fuel prices and price volatility will increase dramatically. And without timely mitigation, the economic, social and political cost will be unprecedented. Viable mitigation options exist on both the supply and demand side, but to have substantial impact they must be initiated more than a decade in advance of peaking.

Mr. Speaker, we probably do not have a decade. As a matter of fact, we may be here. Dealing with world oil production peaking will be extremely complex, involve literally trillions of dollars, and require many years of intense effort.

Mr. Speaker, the question I am asking is, If this is true, and if this report was paid for by the Department of Energy, why aren't the leaders in our country telling the American people this?

Now, if they didn't believe this report, just a few months later came the report from the Corps of Engineers that says essentially the same thing as we will see from some following charts. The next chart is another quote from the ''Hirsch Report'': ''We cannot conceive of any affordable government-sponsored crash program to accelerate normal replacement schedules.'' They are talking now about what will we do to make sure that there is enough oil available when we have reached peak production; what can we fill that gap with.

They are saying they can't conceive of any affordable government-sponsored crash program to make this happen, so as to incorporate higher energy efficiency technologies in the privately owned transportation sectors. Significant improvements in energy efficiency will thus be inherently time consuming on the order of a decade or more. For some things like efficient automobiles, the average light trucks and cars out there, some 16 to 18 years in the fleet, the big 18-wheelers are out there 28 years. So if you are going to make any impact on efficiency in that market, you have to really wait awhile unless you think people are going to scrap their newly purchased SUV.

The next chart is from the Corps of Engineers study, and this is really an interesting chart. Remember the date of this was September '05. The current price of oil is in the $45 to $57 per-barrel range and is expected to stay in that range for several years. Mr. Speaker, I don't think $70 a barrel is within the range of 45 to 57. And it has been less than a year.

So what this shows is that even the experts, these people who spend a long while studying this, when they look at the picture, they didn't anticipate the extent, the seriousness of this problem.

Oil prices may go significantly higher and some have predicted prices ranging up to $180 a barrel in a few years. Mr. Speaker, if that is true, why aren't the leaders of our country telling the American people this?

Friends, we have got a problem ahead of us. It is not an insoluble problem; but the longer we wait, the tougher it is going to be to get through it. We really need to get started now. I don't here our leadership telling us that, Mr. Speaker. And in view of these two reports both saying essentially the same thing, I am wondering why.

Another chart from the Army Corps of Engineers study: oil is the most important form of energy in the world today. I think few would deny that. In addition to transportation, and we use 70 percent of our oil in transportation, it is the feed stock from a really large petrochemical industry. We live in a plastic world. Just look around you at all the things made of plastic. Without oil, most of them wouldn't be here.

Historically, no other energy source equals oil's intrinsic qualities of extractability, transportability, versatility, and cost. The qualities that enabled oil to take over from coal as the front-line energy source for the industrialized world in the middle of the 20th century are as relevant today as they were then.

And another chart from this same Corps of Engineers study, over and over, Mr. Speaker, they are saying the same thing: we face a big challenge.

Petroleum experts Colin Campbell, John LaHerrere, Brian Fleay, Roger Blanchard, Richard Duncan, Walter Youngquist and Albert Bartlett, no relative of mine, but you can pull up on the Web Albert Bartlett, do a Google search for Albert Bartlett and he gives the most interesting 1-hour lecture I have ever heard on energy and the exponential principle, have all estimated that a peak in conventional oil production will occur around 2005. This is 2006.

The corporate executive officers, CEOs at Eni SPA Italian oil companies and ARCO have also published estimates of a peak in 2005. So the problem may already be here.

The next chart shows a very interesting quote from one of the experts in this area, and this really focuses on a chart that we had just a few minutes ago. Jean LaHerrere made an assessment of the USGS report that concludes, now, USGS says that we are going to find half again the oil that we have already found. We have found about 2,000 gigabarrels, used about 1,000 of that. They say we are going to find another 1,000 gigabarrels. This is what Dr. LaHerrere says. The USGS estimate implies a fivefold increase in discovery that is over the present anemic discovery, a fivefold increase in discovery rate and reserve addition, for which no evidence is presented.

Such an improvement in performance is in fact utterly implausible, given the great technological achievements of the industry over the past 20 years, the worldwide search, and the deliberate effort to find the largest remaining prospects.

In other words, he is saying that we have been looking really hard with really good technique and we haven't found it for the last decade. There is just no justification to this euphemistic projection that we are going to find another 1,000 gigabarrels of oil.

The next chart puts this in kind of a global and time perspective. The chart on the top shows the last 400 of 5,000 years of recorded history. And it shows the beginning of the Industrial Revolution with wood, and it did begin with wood. We were making steel with wood, with charcoal, denuded the hills of New England, carrying it to England to make steel. You can visit Little Catoctin Furnace up here in Frederick County, and we denuded the hills of Northern Frederick County to make charcoal for that little furnace there.

And then we discovered coal. And on the ordinate here is quadrillion Btus. That is the amount of energy you produce. Not very much from wood down there. You see the brown.

It really got six or eight times bigger with coal. And look what happened when we found oil and gas. That is the red curve there which seems to go almost straight up. This is only about a 2 percent increase.

Albert Einstein said that the force of compound interest is the most powerful force in the universe which, after discovering nuclear energy he was asked, Dr. Einstein, what will be the next great force in the universe? And he said that it was the power of compound interest, which is exponential growth, of course.

Notice what happened in the 1970s there, and the downturn. There really was a world recession. We used less oil, fortunately, because what was happening up until that time, Mr. Speaker, is really quite phenomenal. Every decade we were using as much oil as had been used in all of previous history. What that means is that when we used half of all the oil, only one decade of oil remained at current-use rates.

Of course that is not the rate at which oil will be used. We are now about 150 years into the age of oil; 5,000 years of recorded history. That curve is now coming down. It is peaking and will be coming down. And it will come down for about another 100, 150 years. So in 200, 300 years we will have been through the age of oil.

It is interesting, Mr. Speaker, to put this in this perspective: 5,000 years of recorded history, we found this incredible wealth under the ground. It really was incredible wealth. Just one barrel of this oil provides you the energy of 12 people working all year for you; 12 people working all year. You can buy that for a little more than $100, 42 gallons, a little more than $100 at the pump.

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If you produce electricity with it, for less than 25 cents a day, an electric motor will do more work than a hardworking, athletic worker. Really incredible wealth.

What the world should have done when we discovered this, realizing that it could not be infinite, that there just had to be an end to it, that the world is not made of oil and even if it was made of oil, there would still be an end to it by and by, but it is not made of oil; we should have stopped and said, what can we do with this incredible wealth to provide the most good for the most people for the longest time? That clearly is not what we did. As this chart shows here, we just pigged out like kids who found the cookie jar, with no thought for tomorrow. We behaved as if oil was infinite, that it would be there absolutely forever. And, of course, that could not be true.

I started asking myself these questions maybe 40 years ago. I knew that oil and gas and coal could not be forever, and I asked myself what does that mean? Is it something that we need to worry about in 10 years, 100 years, 1,000 years, 1 million years? What does it mean? And a number of people have been asking themselves this question.

The next chart is interesting, and it kind of simplifies this curve. By the way, this is the same curve that we saw before, the red curve going up very steeply. All we have done here is to compress the scale on the ordinate and expand the scale on the abscissa so that now we have a more gradual curve. But it is still a 2 percent growth rate. That doubles in 35 years.

At the beginning of the little yellow there, which is the difference between what we would like to use, that is, the demand curve, and the supply curve, which is the blue-green curve, that is doubled at the end over there. So we know that took 35 years to get there because it doubles in 35 years. If we are there, and there should be a question mark after that because we are not dead certain, what this shows is that the shortage actually starts to occur a bit before the peak occurs, as you are breaking away from that nice, smooth curve. And, of course, there are going to be ups and downs, as we have seen in the price of oil. It is up $5 and down $4 and up another $5 and down $4, but ever up and up as we go through. We face some big challenges.

What most people want to do since we are, as the President says, hooked on oil, we would like to keep that habit. We do not want to kick that habit. We would like to keep that habit. So what most people are focusing on is how do we fill the gap? The gap is that yellow. The gap is the difference between what we have and what we would like to use. And as time goes on, that gets bigger and bigger.

I would like to make the argument, and we will come back to that in a few minutes, that we probably should not be trying to fill the gap, for a couple of reasons. One is that I do not think that we can fill the gap. And the second thing is that there will be a future and we do have kids and we do have grandkids, and to the extent that we are successful today in finding and pumping what oil remains, we are dooming them to an increased crisis where they are going to have less and less opportunity to live like we have lived because our incredibly lavish lifestyle is in large measure built on this really high-quality fossil fuel energy.

The next chart shows us what we will ultimately transition to, and there is no escaping this, oil is finite. There will be a peaking. It could be now; it could be in a few years. It is not if, it is when. And there are some finite resources that we can have that we can work with, but they are finite, although they are enormous in volume. For instance, the tar sands, the Canadians would rather call them oil sands because ''tar'' does not have a good sound to it. But it is tar. It is not much better quality than the asphalt out here in the roadway, which flows with the hot sun, as you may notice. The cars sit on it and it sinks down. Put a blowtorch on it and it will really flow. The oil shales in our west and coal are all finite resources.

The Canadians are aggressively pursuing the production of oil from their tar sands, or oil sands, as they like to call them. But I understand that they are using more energy from natural gas to cook that oil sand to get the oil out and more energy from natural gas than they are getting out of the oil. From a business perspective, that makes good sense because that gas up there is stranded. It is in Alberta, Canada. There are not very many people there. Gas is hard to transport, and stranded gas is very cheap. So they use a cheap gas to produce very expensive oil. It costs them about $18 a barrel, I understand, to produce it. And they are getting $70 a barrel. That is a really good dollar/profit ratio. The energy/profit ratio is less than one; so ultimately that is not sustainable, of course, using more energy in than you get out.

The oil shales in our west, there have been some very glowing articles in the papers. I talked to the investigator there. He attended a conference out in Denver, Colorado a few months ago that I was at. And Shell Oil Company, it will be several years before they decide whether or not it is even feasible economically to get oil out of our oil shales. There is an enormous quantity there, nearly as much as the world has found, but not all recoverable. There are estimates that 800 billion barrels may be recoverable, but at what cost? What they do out there is to drill a series of holes around the periphery, and they freeze that so that the oil that they melt out in the middle will not contaminate the groundwater, and then they cook it with steam for about a year. And then after they have cooked it for about a year, heating it up, they drill a well there and they start pumping and cooking, and they do that for another year or two, and they can get meaningful amounts of oil. But the scalability of this and the economic feasibility of this are still unknown, so they are pursuing that.

I would caution, Mr. Speaker, not to be too euphoric about their prospects of getting energy out of these tar sands and oil shales. There is a lot of energy there. It will be difficult to get it out economically, particularly difficult to have a meaningful energy/profit ratio getting it out. But it is there and we have to do the best we can to get it out as efficiently as we can.

Then coal, you will hear we have 250 years of coal, and the next chart shows that is true. We do have 250 years of coal at current use rates, at no growth. But notice what happens when there is only 2 percent growth. Now, I think that as we have less oil, we are going to have to use coal more. Hitler ran his whole economy and his military on oil from coal. So did South Africa with the embargoes that we had there. With just 2 percent growth rate, this exponential growth has an incredible effect. This 2 percent, the 250 years shrinks to about 85 years. And for most of its uses, you cannot use coal. You are going to have to convert it to a gas or a liquid. And if you take the energy to do that, you have now shrunk it down to about 50 years. And that is only 2 percent growth. I believe we will have to increase the use of coal more than 2 percent.

Now, back to this chart of the potential alternative sources:

Nuclear. Nuclear produces now about 8 percent of our total energy in this country and about 20 percent of our electricity. In France it produces about 80, 85 percent of their electricity. There are three kinds of nuclear power. Two kinds of nuclear fission: the lightwater reactor and breeder reactors. We use only lightwater reactors in this country. The only breeder reactors we ever used were in producing the fuel for our nuclear missiles. The world has a limited supply. It is hard to get good numbers on that, but the world has a limited supply of fissionable uranium, and then we will have to go to breeder reactors, which, as the name implies, produce more fuel than they use. But you also buy big problems with that, transporting it around and enriching it, and some of it is weapons grade; so you have to deal with those problems if you want to go to fission with a breeder reactor.

I have friends here in the Congress who were devoutly opposed to nuclear. They are bright people, and when they are considering the alternative, which may be shivering in the dark if we do not have enough electricity, now nuclear is not looking all that bad to them if the alternative is shivering in the dark. Nuclear could and maybe should grow. But in this country it is very difficult to site a plant and to build it. It may take 10 years, and I understand that the plant has to be operating maybe 20 years before you get back the amount of fossil fuel energy that went into producing the plant.

Again, Mr. Speaker, on many of these things we need good numbers. It is hard to have a rational discussion when there is so much disagreement in numbers, and we really do need to enlist an honor broker so that we can agree on numbers because it is very difficult to have a rational discussion when there are such wide differences of opinion as to how much is out there of this and that.

Nuclear fusion. If we can discover that, we are home free. That is what the sun does to produce all the energy we get from the sun. And we are just a tiny, tiny speck in that whole sphere around the sun and the incredible amount of energy that comes from the sun. We are home free if we get there, by the way. But I think the odds of getting there are about the same as the odds of your or my solving our personal economic problems by winning the lottery. That would be nice, but I doubt, Mr. Speaker, that you are plotting your economic future on the assumption that you are going to win the lottery, and I do not think we ought to plot our energy future on the assumption that we are going to get fusion. I support all of the money, about $250 million a year or so. Of course, it goes into fusion. I hope we get there. But, frequently, my hopes and my expectations are not the same thing. In this case I would not bet the ranch that we are going to get fusion energy. If we do, we are home free, and we need to continue to invest all the money that that technology can reasonably absorb.

And now we come to the truly renewable resources. And ultimately, Mr. Speaker, after this age of oil, which will end, and when I say ''oil,'' I mean gas and coal too, which will end in about another 100, 150 years, we will be running our world on these energy sources: solar and wind and geothermal and ocean energy from tides or thermal gradients or waves. Agricultural resources, a lot of possibilities there: soy diesel, biodiesel, ethanol, methanol, biomass, cellulosic ethanol. You hear a lot of these words.

Burning our waste to get energy, that is a really good idea, and we should do more of that. We need fewer landfills, and we would have a little more electricity if we did that.

The last one here that I want to spend just a moment on, it says hydrogen from renewables. Today we are not making hydrogen from renewables. We are making hydrogen from natural gas. That is going to peak and be running down about the same curve that oil is running down. One thing is true, Mr. Speaker: We will always use more energy producing hydrogen than we get out of hydrogen. Unless we are going to suspend the second law of thermal dynamics, that will be true.

Well, if it takes more energy to produce hydrogen, why are we even thinking about hydrogen? For two reasons: One is when you finally use it, burn it, you get only water. That is not a very polluting product. And the second reason we are really interested in hydrogen is that it is one of the better things to feed a fuel cell with if we ever get economically feasible fuel cells. A fuel cell will get more than twice the efficiency of a reciprocating engine. So even though you lose some energy when you go from electricity or coal or whatever to hydrogen, you will more than get it back in the increased efficiency of the fuel cell if we ever get to the fuel cell, if it is economically feasible. And you are certainly not polluting, you are producing only water.

The next chart is an interesting look at one aspect of the agriculture, and that is the amount of energy that goes into producing a bushel of corn. On the chart we show two things: On the right is petroleum, and it shows that if you put in about 1¼ million Btus, you will get out 1 million. On the left-hand side, it shows a picture for ethanol, that if you put in three-fourths of a million Btus, you get out 1 million. And some people will tell you that this is pretty optimistic. In fact, Pimentel says it is actually negative. You use more energy producing ethanol than you get out of it. But if this is true, what that means is that today the way we produce ethanol, for every gallon of ethanol you burn, you are burning the equivalent of three-fourths of a gallon of fossil fuels, because that is the fossil fuel energy it took to produce ethanol.

The chart at the bottom shows why this is true, and it shows all of the total energy requirements of farm inputs.

□ 1615

This is BTUs per bushel of corn. The energy goes into producing a bushel of corn.

You notice that big, nearly half of it, that says nitrogen? Mr. Speaker, that is natural gas from which we make nitrogen fertilizer. Before we learned how to do that, all of our nitrogen fertilizer came from barnyard manures or guano. Guano is gone. If we wait another 10,000 or 20,000 years, there will be some more.

But most people don't know that nitrogen fertilizer today, essentially all of it comes from natural gas, almost none of it produced in our country. Natural gas is too expensive here. It is made in other countries where gas is kind of stranded.

The next chart looks at where we are. I use an analogy here which I think is very apt. We are very much like a young couple that has gotten married and their grandparents died and left them a big inheritance, and they have established a lifestyle where 85 percent of all the money they spend comes from their grandparents' inheritance and only 15 percent from their income.

They look at the inheritance, and it is not going to last until they retire. So what will they do? Obviously, they have got to do one or both of two things. They either have got to spend less or make more. I use those numbers, others may use 86–14. I use those numbers because that is exactly where we are with our energy use today. Eight-five percent of all the energy we use comes from coal and oil and natural gas, and only 15 percent of it comes from some other source.

Now, a bit more than half of that comes from nuclear electric power. That is 8 percent of our total energy, about 20 percent of our electricity. The rest, 7 percent, is the true renewables. Mr. Speaker, those are the things which we ultimately will transition to.

Now this is a chart from 2000, and the solar and the wind and so forth would be bigger today. That is 1 percent in this chart of 7 percent. That is .07 percent. It is really in the noise level. We are four times bigger than that today at .28 percent. Big deal. It is a long, long way to go from .28 percent to go to something really meaningful as a contribution. But that is what we will be turning to increasingly in the future.

Notice that on this renewable sources there, the biggest one, 46 percent, is conventional hydroelectric. That will not increase in our country. We are pretty much tapped out on that. We might go to microhydro and use little microturbines in thousands of little streams across the country without affecting the environment as much as the big ones, by the way, and get about that much more energy.

But notice that solar and wind and agriculture down here, it is just alcohol fuel there; but it could be biomass, soy diesel, biodiesel and so forth, are very small amounts. Where we can get it, we ought to be getting more of geothermal. There is not much in this country. All of Iceland's energy comes from geothermal. I don't think there is a chimney in Iceland, because they don't need it. They get it all from geothermal sources.

Notice the waste to energy up there, which is 8 percent. That could grow. Instead of putting it in a landfill, there is a very nice plant up here in Montgomery County they will be happy to show you through. It is really a very handsome plant, and they are burning waste up there to produce electricity.

Just a word of caution about energy from agriculture. We must keep two realities in mind. The first is that we must feed the world. Tonight, about 20 percent of the world will go to bed hungry, obviously not in this country. And we have to maintain our top soils. If you don't have top soils, you will not feed the world.

Now, if we would live lower on the food chain, if we ate the corn and the soybeans instead of the pig or the chicken or the cow that eat the corn and soybeans, we would have between 10 and 20 times as many calories to eat, because that is about the ratio. They say one pound of grain to three pounds of pig or chicken, but that is dry grain and wet pig and you can only eat about half of the pig. When you get down to the true ratio of dry to dry matter, it is about 10 to one for the steer. By the way, milk and eggs are very much more economically produced and really higher-quality proteins.

When it comes to things like cellulosic ethanol and biomass and so forth, be careful that we aren't using so much of that that we are mining our top soils of an essential element called humus. Humus is what gives tilts to the soil. It is why top soil is different than subsoil. It holds water; it holds the nutrients. If you take all of that out, you no longer have top soil.

We can get some energy from agriculture, but it will not fill the gap between what will be available and what we would like to use.

The next chart is a really interesting one. This shows on an interesting scale, this is how good you feel about your station in life on the ordinate here. Then the absyssa is how much energy you use. Notice where we are. We are way over there in the far right. We use more energy than any other society in the world.

You know, notice you can't feel very good about your station in life until you have used a meaningful amount of energy, but it is striking that this is all relative. China is up here. China feels really good about where they are. Notice how little energy the average man uses, so they are better off today than yesterday, so they feel good about it. They are improving. What I want to point out on this chart, you don't have to use the amount of energy we use to feel good about your position in life.

There are about a dozen countries over there that use less energy than we. Everybody above that line uses less energy than we and feels better about their station in life than we feel. We have lots of potential to use less energy and feel good.

The next chart shows a really interesting one on energy efficiency. There may not be this kind of opportunity everywhere, but on the left here is a usual incandescent bulb. If you are brooding chickens, you use a light bulb. It is not light you want; it is heat.

But notice that 90 percent of all the energy that comes out of that incandescent bulb, that is what is up here, I am looking up at them, Mr. Speaker, 90 percent of the energy that comes out of that is heat.

Now, if you go to a fluorescent, you have these little screw in fluorescents now, and notice, by the way, the green here is the same amount of light every time. Notice that you use demonstrably less energy, four times less energy. A 13-watt little spiral bulb will give you as much light as a 60-watt bulb. These fluorescents are very efficient.

Now notice what happens with a light-emitting diode. Notice that the amount of heat produced in a light-emitting diode is only about one-tenth of the light you get. No wonder much of new technology is moving to diodes.

The next chart is an interesting one from our country, and this shows the energy used per capita electricity consumption in California and the U.S.A. Remember several years ago they had some blackouts and brownouts in California, and we were predicting massive rolling brownouts or blackouts the following year. It did not happen.

The reason it didn't happen is because the Californians, without anybody telling them they had to, voluntarily reduced their consumption of electricity by 11 percent. And notice, the average Californian uses about, what, about 65 percent of electricity as the average in the rest of our country. It would be hard to argue that Californians don't live as well as we.

The next chart is a very interesting picture. We don't want to go there, and unless we do something meaningful to address this coming energy crisis, we could do what the Easter Islanders did. They had a good thing going for them there. They fished the oceans and the fish was there for the taking.

To make their boats, they cut down the trees. And the trees weren't growing as fast as the boats they were making, and they cut down more and more trees, and ultimately they cut down the last tree. And when those boats rotted and they could no longer fish, their society started deteriorating. When they were finally discovered, they were down to eating rats and living in caves and eating each other. They had a civilization before that which could indulge in such things as these very large sculptures that you see here.

What they did was to mine a nonrecoverable resource, and they had no fallback. They had no alternative to fall back on.

The next chart shows kind of where we are and where we need to go. So far, Mr. Speaker, it may not be obvious that we have a really bright future ahead of us, but I think we do. We have some big challenges here. Challenges and opportunities are two faces of the same thing, and I would like to think of them as opportunities.

I think that what we need to address this problem is the equivalent of a program that embodies the total commitment of World War II. I lived through that war. There were no automobiles made in, what, '43, '44 and '45. There was gas rationing. I can't remember people grumbling about the gas rationing.

Everybody had a victory garden who could. They were encouraged to do that. It was the patriotic thing to do. We started daylight savings time so you could have some time after work in the evening to work on your victory garden.

Everybody saved their household grease. I am still not quite sure what they did with that, but we took it to a central repository.

The point is everybody was involved. It was the last time in our country that everybody has really been involved, and we need a program that involves everybody. We also need a program that kind of has the technology focus of putting a man on the Moon, because there are some really big technology challenges here.

Thirdly, this program needs to have the kind of urgency that we had in the Manhattan Project, because time is really of the essence here. We don't have the luxury of a leisurely approach to solving this problem.

There will be an increasing deficit of oil in the world and in our country; but I will tell you, Mr. Speaker, I think the biggest deficit today is leadership, both here and in the world.

With so many experts, and these two studies, and again I go back to the two studies, here they are, paid for by our government, saying that we are at or nearly at peak oil and pointing to the dire consequences if you haven't prepared for that, I don't see our leaders in our country or in the world standing up and telling their citizens that we face this problem.

This chart shows what we need to do. The first thing we need to do is to buy some time. How do we buy time? Right now there is no surplus energy available to invest in alternatives, like building a nuclear power plant, like finding a really good way to make ethanol, to make a whole lot more solar panels, to make a whole lot more wind machines. By the way, wind machines are producing electricity at 2.5 cents a kilowatt hour. That is very competitive.

If we can have a very aggressive conservation program that you can do quickly, we can free up some oil, which buys us some time so that we can invest in these alternatives.

Then we need to use this wisely. Somehow we need an entity which is making judgments as to what is the best uses of the limited resources of both time and energy that we will have.

By the way, Mr. Speaker, we need to invest three things to get these alternatives. We need money and we need energy and we need time. Of course, in this Congress, we never worry about money, we just borrow that from our kids and our grandkids without their approval. But we can't borrow time from them, and we can't borrow energy from them.

Thinking about our children and grandchildren, Mr. Speaker, I would just like to make an argument that there is a moral dimension to the challenge we face. To the extent that we are able to go out there and get these remaining resources to fill the gap, to continue life as we know it, we are going to be denying our children and our grandchildren access to these energy sources.

Right now, we are telling them although we cannot do it, we cannot even come close to running our government on current revenue, not only will they have to run their government on current revenues, they will have to pay back all the money we borrowed from their generation.

I am having a moral problem with going out there with the techniques that we have to get this gas and oil and coal, the little that remains, more quickly. We will certainly be denying our children the opportunity to do that.

Somehow we have to have an organization which makes decisions. We have only limited time. We have only limited energy. How will we invest it? What is the wisest way to invest it?

There are many benefits that can come from this. One of the benefits, Mr. Speaker, I can imagine Americans going to bed in the evening feeling really good about the contribution they have made that day to this problem. This shouldn't be viewed as a problem; this should be viewed as a challenge. Life is really easy in our country. Most people don't have to really stretch to do well.

I think that our people would marshal. We have the most creative, innovative society in the world; and if our people only knew that there was this problem, I think that all of our energy, our creativity, our innovation could be marshaled to address this.

We have no alternative but to be a role model. We use a fourth of all the world's energy. We are a role model. We need to be a good role model for this transition.

Mr. Speaker, I yield back the balance of my time, with the realization that if every American is challenged to address this problem, that there is a way out, we will have a bright future. But the later we start, the more difficult that transformation will be. We should have started a decade ago. We can't turn back the hands of time, but we can from now on do what we should have been doing in the past.

□ 1630

RELIEF FOR SOUTHWEST LOUISIANA FROM RITA

The SPEAKER pro tempore (Mr. PRICE of Georgia). Under a previous order of the House, the gentleman from Louisiana (Mr. BOUSTANY) is recognized for 5 minutes.

Mr. BOUSTANY. Mr. Speaker, next month the Gulf Coast will prepare for yet another Hurricane season. As we prepare for this year's storm season, it is important to remember that two category 3 storms hit the gulf coast last year.

In late September, the eye of Hurricane Rita made landfall in Cameron Parish in the southwest corner of Louisiana. The storm inflicted devastating damage to my district in southwest Louisiana as well as to the districts of my colleagues from southeast Texas.

In the coming weeks, House and Senate conferees will meet to determine a final bill to provide important relief to residents on the gulf coast. Today we are not here to compete with one another, but to together ask our colleagues to consider our needs and to remember Rita.

Unfortunately, more than 6 months after Hurricane Rita hit the coast of southwest Louisiana and southeast Texas, our road to recovery is not yet complete. Hurricane Katrina is off the front pages. Hurricane Rita is off the back pages.

Mr. Speaker, it is important to note that the people of southwest Louisiana, and our friends in southeast Texas are not asking for a Federal handout. We do, however, need the Nation's support and the support of this body to recover and protect ourselves from future disasters.

This Hurricane supplemental is especially critical to my constituents in southwest Louisiana. Homes are destroyed or uninhabitable. In Cameron Parish, 90 percent of the homes were reduced to slabs of concrete. Students and teachers in southwest Louisiana are still waiting on Federal education disaster assistance to rebuild.

Our farmers are also hurting. Last year, farmers in Vermilion Parish planted 75,000 acres of rice. This year that number has been reduced to only 25,000. And this is why. This is why, right here. This is a picture just 4 weeks ago in my district, some 7 or 8 miles inland from the coast. These were rice fields that have been virtually destroyed due to tremendous saltwater damage that Hurricane Rita has left in its wake. Before Rita, this field was a thriving rice crop.

And you can see, this is another field. Same thing. All this white in here is salt deposition. This just 4 weeks ago, over 6 months from Rita. And we are still coping with this.

We owe it to these farmers to work as hard for them as they do for their families and neighbors in southwest Louisiana.

Mr. Speaker, our industries are hurting as well. The Lake Area Industry Alliance, home of a vast petrochemical complex which serves the entire U.S., reports damages to its facility of nearly $50 million. This picture here was taken in the immediate aftermath of the storm.

They show the Henry Hub, just one of the many energy facilities in my district that supply much of our Nation's energy industry. This facility alone