After all, this is the greatest country ever created in the history of the world, and I have no doubt that the future is limitless for us as Americans.

I am proud to yield back the balance of my time and turn the floor over to my good friend, my colleague, someone I admire immensely, a fellow Jeffersonian, ROSCOE BARTLETT of Maryland.

MESSAGE FROM THE PRESIDENT

A message in writing from the President of the United States was communicated to the House by Mr. Sherman Williams, one of his secretaries.

PEAK OIL

The SPEAKER pro tempore (Mr. ALTMIRE). Under the Speaker's announced policy of January 18, 2007, the gentleman from Maryland (Mr. BARTLETT) is recognized for 60 minutes.

Mr. BARTLETT of Maryland. Mr. Speaker, if Thomas Jefferson could be resurrected today, he would be surprised by many things that he found. As my good friend from Texas just indicated, he would be enormously surprised by the size of our Federal Government, because he had envisioned a country in which we had a very limited Federal Government.

But there is something else that I remember about Thomas Jefferson that would really surprise him today. What he wanted for his new country was a largely agrarian society, with just enough cities to provide the manufacturing necessary to sustain an agricultural economy. He wanted this, he said, because he didn't want his new country to be blighted by the decadence of cities, as were the countries of Europe and the British Isles that they came from. He really, really would be quite surprised if he could be resurrected and come to our country today, wouldn't he, where far, far more than half of our people live in cities far larger than any he could have imagined at that time.

Mr. Speaker, this, I believe, is the 42nd time that I have come here to the floor to talk about energy and primarily about oil. The first time I came here was a little over 3 years ago. Oil was just over $50 a barrel then, and I was talking about a history that, had we paid attention to it, would have told us that today, or sometime roughly near this, we would be here with oil at $115 a barrel, that is what it touched in Asia overnight, and with gasoline at the pump out there averaging somewhere near $3.50 a gallon.

It was absolutely inevitable that we would be here. It was predicted that we would be here. And with all of these warnings, we really should have been doing something about that, and why we weren't is a very interesting subject.

There were two speeches given on energy in the last century that I think will be increasingly recognized, one of them as the most important speech given, and the other one the most insightful speech given.

I have here a quote from what I think was perhaps the most insightful speech given on energy. It was a speech given by Admiral Hyman Rickover, the father of our nuclear submarine, to a group of physicians in St. Paul, Minnesota, on the 14th day of May, 1957.

He says, ''In the 8,000 years from the beginning of history to the year 2000 A.D.,'' he was looking ahead, ''world population will have grown from 10 million to 4 billion.'' He really missed that, didn't he? It is nearly 7 billion. He really had a pretty good concept of what energy was doing for us, but he had underestimated the contribution that energy would make to the growth of our population, because we are now somewhere near 7 billion people, with 90 percent of that growth, more than 90 percent, taking place during the last 5 percent of that period, in 400 years. It took the first 3,000 years of recorded history to accomplish the first doubling of population, 100 years for the first doubling, but the next doubling will require only 50 years. And, of course, it required less than that, because we are now far more than doubled.

The next chart kind of depicts what Hyman Rickover was talking about. What this shows is the last part of that 8,000 years of recorded history. We have here only about 400 years of it. But if you went back the rest of the 8,000 years, the graph would look about the same. The production of energy was down there so near zero that it looked like it was on the zero line.

Here we see the beginning of the Industrial Revolution. It began with wood, of course. That is the brown line there. Then we discovered coal and we produced considerably more energy. Then we discovered gas and oil, and, boy, it shot up. Now, if I had a curve of the growth in population, it would just track almost precisely this curve in the increase in energy available.

This is an interesting curve, and I would like to spend just a moment looking at it. It is a very steep curve. Now, we can make this curve much less steep if we spread out the abscissa and compress the ordinate, and a little later we will have some curves that are that way. But you can still see the essentials of what this curve shows you.

Here is the oil price spike hikes of the seventies. You will see it resulted in a worldwide recession that actually reduced the use of oil. And now, after recovery from that recession, with a great deal more respect for efficiency, we are now increasing our use of energy at a very much lesser slope.

Now, in this chart where we have such a compressed abscissa, that is not as evident. It will be later. Later when we come to that I will point to the fact that this very steep curve, were it to have continued, we would be off the top of the chart and we would be in considerably more trouble relative to energy than we are today.

The next chart is another quote from this great speech that Hyman Rickover gave a little over 50 years ago. ''There is nothing that man can do to rebuild exhausted fossil fuel reserves.'' When they are gone, they are gone. You can't recycle energy. When it is used, it is gone. They were created by solar energy a very long time ago, he says 50 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—I want you to listen to this statement, so insightful—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 of living off renewable or substitute energy sources and to adjust our economy to the vast changes which we can expect from such a shift.

Fifty-one years ago. Tremendous advice. He recognized this. And he says we were living in a golden age. Exactly how long this golden age lasted would be only important in one regard. The longer it lasted, the more time we would have to shift to alternative sources of fuel, because fossil fuels, oil, gas and coal, are not infinite. They are finite. They will run out. The only question was not if, it was when will they run out. He said the longer they lasted, the more time we would have to invent ways of living off renewable or substitute energy sources.

The world has done essentially none of that in the 51 years since he made that statement and gave that counsel. We have behaved in our use of fossil fuels as if they were in fact infinite, as if they would always be there. Tomorrow there will be another huge find, and we can just go on using as much energy as we wish for as long as we wish.

The next chart is another quote from Hyman Rickover. ''Whether this golden age will continue depends entirely upon our ability to keep energy supplies in balance with the needs of our growing population.'' And oil is $115 a barrel and gas is $3.50 a gallon at the pump because we have not been able to keep energy supplies in balance with the needs of our growing population and our growing economies in this country and around the world, and we now have an imbalance between supply and demand. The demand is greater than the supply, and whenever that happens, of course, the price goes up, and the price has gone up.

The next chart is a quote from one of four studies that have been paid for by your government and have been pretty much ignored by your government. All four of these studies have said essentially the same thing, that peaking of oil is either present or imminent, with potentially devastating consequences, and we really need to be doing something about that.

The Corps of Engineers was one of those studies, the second one, in September of 2005. An earlier one, the Hirsch Report, was in February of 2005.

Then last year there were two more reports, one by the Government Accountability Office, and the other by the National Petroleum Council.

Oil, they said, is the most important form of energy in the world today. Historically, no other energy source equals oil's intrinsic qualities of extractability, transportability, versatility and cost. It has been really cheap. One barrel of oil represents the work output of 12 people working all year, 25,000 man-hours of effort.

When I first saw that statistic, I said, gee, that can't be true. Then I thought about it, how far that gallon of gas, still cheaper than water in the grocery store, carries my Prius; about 47–48 miles.

□ 1600

I know I could pull my Prius 47, 48 miles with a come-along and using guardrails and trees and so forth. How long would it take me to pull my Prius 47 miles?

Certainly it is true that historically no other energy resource equals oil's qualities. Its quality of energy and the quantity of energy in these fossil fuels, particularly, oil is just incredible. That's one of the big challenges we face in finding alternatives for these fossil fuels is something that has the quality and the quantity of the energy in these fossil fuels.

The next chart is a cartoon that asked the question ''Just why is gas so expensive?'' You can see here a tiny little supply and a huge demand, and that, of course, is why oil is so expensive. It's because the demand exceeds the supply.

This problem is an even more demanding problem than just a supply and demand, because as the next chart shows us, the major supplies of oil come, as the President said in one of his State of the Union messages from countries that don't even like us, this is a chart which shows what the world would look like if the size of the country was relative to how much oil it had in the ground.

You see here that Saudi Arabia dominates the landscape. Saudi Arabia represents about 22 percent of all the reserves of oil in the world, and you see how large the reserves are in countries like Iraq and tiny little Kuwait and the United Arab Emirates. You almost have to have a magnifying glass to see them, they are so small. Look how huge they are relative to oil, then Iran huge. Russia, just a couple of days ago, Russia had indicated that had they had reached a maximum capacity for producing oil.

The United States, we have 2 percent of the known reserves of oil in the world. We use a fourth of the world's oil. What I really would like to focus on is the size of India and China over their more than a third of the world's population, and they have less oil than we have, and we have only 2 percent of the known reserves of oil in the world.

The next chart has this in some numbers, and these numbers inspired 30 of our prominent Americans, Jim Woolsey, McFarland, Boyden Gray and 27 others to write several years ago a letter to the President saying, Mr. President, the fact that we have only 2 percent of the world's oil reserves, and we used 25 percent of the world's oil and import almost two-thirds of what we use is an almost totally unacceptable national security risk, and we really have got to do something about that. That's true that this represents a huge national security risk.

This was recognized in our next chart by the Secretary of State in a comment that she made before a Senate committee just a bit over 2 years, April 5, 2006. ''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 politics of the way 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.'' In that all-out rush, China is scouring the world and buying up oil reserves wherever they can find them.

The next chart looks again at the geopolitical picture. Why is oil just so expensive? Many people believe that OPEC is gouging us. Others believe that our oil companies are gouging us.

The truth, of course, is that the price of oil is determined by the relationship between the supply of oil and the demand for oil.

Our large companies and the countries that are producing oil just happen to be happy recipients of this confluence of events which demands more oil than is available and so the price is up.

What this chart looks at is the top 10 of the oil and gas companies on the basis of how much oil they have. You see that 98 percent of these top 10 are all countries, they are not companies.

Most of the oil in the world is not owned by companies, it's own by countries. LUKOIL, which is kind of an independent oil company in Russia, is only 2 percent at the top of this bar.

The bar here looks at the top 10 oil and gas companies on the basis of production. Now, we have huge oil companies. ExxonMobil, the largest one in the world, Royal Dutch/Shell, BP, collectively, they produce only 22 percent of the oil, and these state-owned fields produce only 78 percent of the oil.

The next chart I mentioned, China's interest in scouring the world and looking for oil, wherever you see a dollar sign on this chart, we have bought some oil. Here I see a dollar sign here, I see a dollar sign, not very many of them. When you see this little Chinese symbol kind of a sign here that's where China has bought oil.

Here is one, they tried to buy Unocal in our country. You see their symbol all over the world. They are aggressively buying oil all over the world.

In today's world it really doesn't make any difference who owns the oil, the person who has the dollars. It's an auction, a bidding process. The person who has the dollars buys the oil.

Why would China be buying up oil if they simply come with the dollars and you buy all the oil they need on the world market? Well, it's hard to get inside another person's head, but it may just be that they are looking to the day when they will not be able to share their oil with the world.

Now, all the oil in all the world is shared with all of the world. It's all a huge auction pool and everybody contributes and everybody buys. That happy day may end.

The next chart. If you had only one chart to look at to inform yourself about where we are and what the challenge is, I think this would be the chart. This chart shows bars that represent the amount of oil that we discovered year by year. You see that we had huge, huge discoveries back in the 1960s and 1970s.

Then from about the 1980s, I am really starting about the 1970s on, we progressively found, choppy up and down, but less and less and less oil. That's in spite of ever-better techniques for finding oil.

The solid black line here represents the oil that we have used. Here is the 1970s, and notice the reduction in use there as a result of a worldwide recession brought on by the oil price spike hikes then.

Now, this is an expansion of the abscissa—and I indicated earlier we would have a chart where there is a huge difference in slope. Remember we had that red one just going straight up. If we could compress this abscissa we could make that one go almost straight up.

But notice how much less the slope is after the recession of the 1970s. That's because the world woke up and said, gee, oil is expensive, isn't it, and we can do better, and let's be more efficient.

The air conditioner you have today may be two or three more times more efficient, as is your refrigerator. We now have fluorescent lights, and they are very much more efficient than incandescent lights. So this lesser slope of the curve represents increased efficiency. Were it not for that, notice where we would be on the curve now, we would be off the top of the chart now, wouldn't we, if this kept going.

By the way, I want to just make one observation about exponential growth. This is, of course, exponential growth. Albert Einstein was asked, Dr. Einstein, what will be the next big force we find after nuclear energy? His response, the most powerful force in the universe is the power of compound interest.

Just 2 percent growth, that's so anemic, that our market doesn't like it. It really kind of teeters, it stutters a little and doesn't grow with 2 percent growth. Things tend to be pessimistic, but 2 percent growth doubles in 35 years, it's 4 times bigger in 70 years,

it's 9 times bigger in 105 years and it's 16 times bigger in 140 years, just 2 percent growth, compound growth. So if this compound growth had continued, this will be off the top of the page.

That was kind of a trauma going through the 1970, but we really should look back on it and say how lucky we were that we had a wake-up call because look what happened? We got much more efficient, and so now we are in much less trouble than we would have been had we not had this chalk, and we would have continued along this curve.

The next chart, the next chart is one from the U.S. Corps of Engineers. 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, this is one of the four studies your government paid for and is now ignoring. It's not whether the production will peak but when. Oil is not infinite in its supply, it is finite. There is only so much.

One day we will reach our maximum capabilities for producing oil. There are many estimates of recoverable petroleum reserves giving rise to many estimates of when peak oil will occur and how high the peak will be. A careful review of all the estimates leads to the conclusion that world oil production may peak within a few short years, after which it will decline.

Once peak oil curves, then the historic patterns of world oil demand and price cycles will cease. They might have gone on to explain what that's going to do to our economy.

The next slide—and I have to go back more than 50 years to put this in context—on the 8th day of March in 1956, the most important speech, what I think will certainly recognize will be the most important speech of the last century was given, and this speech was given by a Shell Oil Company scientist, M. King Hubbert, to a group of physicians in St. Paul, Minnesota.

At that time, the United States was king of oil. We were producing more oil, consuming more oil and shipping more oil than any country in the world. What M. King Hubbert told them was that in 16 short years, 14 short years, you are going to reach your maximum production of oil. He made that prediction in 1956. And sure enough in 1970, the yellow symbols here we reached our maximum production.

Now, the actual maximum production was a little bit higher, it was the green squares there, and they tended to be a little bit higher going down the slope on the other side of Hubbert's peak. Some would have you believe the difference between M. King Hubbert's predictions the gold triangles and the oil that we actually pump indicate that he didn't really know what he was talking about.

Well, it did peak in 1970, and it did go down after that. If you aren't a statistician, I think the average person would look at that and say, gee, he really got it pretty right didn't he.

Now the red squares there on the other side represent the total amount of oil that we pump, because he had only predicted the lower 48, and we added huge amounts of oil from Alaska, a fourth of our total production for the last several years, and from the Gulf of Mexico. Even with those hugely large extra supplies, there was still just a blip in the slope down the other side of Hubbert's peak.

Now the same person that predicted that the United States would be peaking in 1970. In 1979, he predicted that the world would be peaking about now.

We have kind of blown, not kind of, we have blown the last 28 years, because by 1980, here we are in 1980, we looked back and, boy, M. King Hubbert was right about the United States. We did peak in 1970. In spite of drilling more oil wells than all the rest of the world put together, we have not been able to make a liar out of M. King Hubbert.

Today we produce about half of the oil we produced in 1970. In the lower 48 we produce way less than half of the oil that we produced then.

□ 1615

Now in 1979 he predicted that the world would be peaking about now.

The next chart has data from two entities in our world that are pretty good at tracking how much oil we pump and use. By the way, we use all we pump. There are no big reservoirs of oil waiting to be used. I would caution that I don't think these entities have the same fidelity in predicting how much more we will find in the future, but they do a very good job of tracking what we've used. This is the EIA and the IEA. The IEA is the International Energy Agency. You hear them referred to. They are the ones that are tracking what is going on in Iran with their nuclear thing. And the EIA is the Energy Information Administration and is a part of our own Department of Energy. Both of those have oil production plateauing; one of them for about 3 years, and the other for about a year and a half.

What happens when demand keeps going up and supply stagnates? This price curve shows you what happens. We had a comfortable dip here in prices less than a year ago, but now they are skyrocketing, and $115 is off the top of the chart. We need to make a new chart to show where 115.

The question I ask myself and audiences is: If M. King Hubbert was right about the United States, which is a microcosm of the world, we did peak in 1970, and it is clear every year after that we have less and less oil, why wouldn't the United States be a microcosm of the world, and he predicted the world would be peaking about now, why wouldn't we have done something about that? Why have we continued to behave as if gas and oil and coal were forever, that they would never run out? What we want to do now is to rush out to our public lands to offshore, to ANWR, and to drill. I asked them, if you can drill ANWR tomorrow, what will you do the day after tomorrow? And there will be a day after tomorrow.

I think about that. I have 10 kids and 16 grandkids and 2 great-grandkids. They are going to be here the day after tomorrow. We are leaving them a huge debt. Check my voting record, it is not my fault. We are leaving them a huge debt, and I asked them, Wouldn't it be nice if we left them a little oil. And they smile, and the next thing they are asking, Would you vote to drill in ANWR. No, I won't. Or on our public lands or offshore until you commit to me that you will use every bit of energy you get from those sites to invest in alternative energy because we have now run out of surplus energy. If we had any surplus oil, it wouldn't be $115 a barrel today, would it. So I will vote to drill there when I have a commitment that we will use all of the energy we get there and invest it in the development of alternatives.

The next chart is a detailed chart of our production and decline. Here is what M. King Hubbert predicted of Texas and the rest of the United States. And then we have learned to get some gas from natural gas liquids, a huge find in Alaska, a big find in the Gulf of Mexico, just a blip in the slide down the other side of Hubbert's peak.

The next chart shows some projections of what we will find in the future. Although with really good techniques and a lot of energy, we have gone out there, a lot of incentives, we have looked for the last remaining oil deposits and we have found less and less and less as time goes on. What this curve does is smooth out the big bars we saw before. Here we are at this point. They were projecting how much more we were going to find. We don't have time, but there is a really interesting metamorphosis that took place here.

The USGS, in trying to predict how much more oil we would find, has several computer models. They put different data into those models, and they get different results out. They have run many simulations, and they put all of those simulations on a chart and they get the mean of the simulations. They think that they are putting in good data and so they should be getting out good data. They take the mean of those, and they say this is the most probable amount of oil we will find.

Somehow that ''F'' for frequency, maybe it was a bad font, but somehow it showed up as a ''P'' or probability when it got to EIA. And then they make some bizarre applications of statistics.

They say that the 50 percent probability, the green one here, which they say is the mean, and of course 50 percent probability is not a mean, it is 50 percent probability. They say the 50 percent probability is more likely than

the 95 percent probability. Of course that defies logic in that it obviously is not more probable because the actual data points have been following, as you expect they would follow, the 95 percent probability.

I will say again: These two agencies, the IEA and the EIA do a really good job of tracking what we produce and use. I would be careful about accepting their prognostications of what we are going to find.

The next chart is one from the first big study that I mentioned, one of the four that your government paid for and it is largely ignoring. This is called the Hirsch Report done by SAIC, a huge, international, very prestigious, scientific engineering organization.

I have highlighted this phrase because it is so shocking. ''The world has never faced a problem like this. There is no precedent in history to guide us.''

We have never faced a problem like this. You cannot go back in history and find any problem that will help you decide how you are going to get through this. The world has never faced a problem like this.

The next chart. They say that the peaking of world oil production presents the United States and the world with an unprecedented risk management problem. They say that the economic, social and political cost will be unprecedented. Wow, strong words. The world has never faced a problem like this, unprecedented risk management problem. Nothing like it in history. Nothing to guide you. The economic, social and political cost will be unprecedented.

The next chart is a schematic. This shows what we have been talking about, a 2 percent rate of growth, doubles in 35 years. The yellow there is 35 years. I think we are about here. Notice the shortfall occurs a little before peaking, although the IEA and the EIA both have oil peaking, so we may be about at that point.

Most people when they look at that chart say we have to fill that yellow space because we have to have all of the liquid fuels that we would like to use. I will submit, Mr. Speaker, that it is exceedingly unlikely that we will be able to fill that blank to make up for the deficit between what we would like to use and what will be available. Filling the gap, I think, is not feasible. And what Hyman Rickover cautioned 50 years ago, 51 years ago now, we should note today, and that is we need to plan in an orderly fashion to move from fossil fuels to sustainable renewables because geology will demand it. We will move when the oil is not there, when the gas is not there, and when the coal is not there. Then we will have moved to alternatives. Whether that is a bumpy ride or a really bumpy ride will depend on what we do now and in the immediate future.

The next chart is a really interesting one because it shows us again this rapidly accelerating use of oil, then the recession of the 1970s, and a lesser slope after that. This chart assumes that we may find as much more oil as all the recoverable oil we now know exists. Most experts believe that roughly, at the end of the day, there will have been roughly two trillion barrels of oil pumped. We have pumped about a trillion barrels now. Most experts believe we have another trillion barrels to pump. This assumes that we are going to have a total of three trillion barrels.

Now if we have one trillion barrels remaining of the two original, we have pumped one and if there is a total of three, that means that they are presuming that we are going to find another trillion barrels of oil. If we do that, by their own calculations it will simply move the peak out from around 2000 or a little after 2000 to 2016. That is not very far. That is the effect of exponential growth.

During the Carter years, every decade we used as much oil as had been used in all of previous history. That is a stunning statistic. Thank goodness for those oil price spike shocks and the efficiency that resulted from that or else we would be in a really troubled world today.

What that means is if you use as much each decade as you use in all of previous history, when you have used half of the world's oil, which is where we are, then you would have 10 years of oil remaining. We have slowed down so if you do those calculations, the 88 million barrels a day, a trillion barrels remaining, that comes out to roughly 30 years. It is not going to be 30 years of constant production and then fall off the cliff because it is going to be harder and harder to get, more and more expensive, and getting less and less each year no matter what we do.

The next chart is a quote, very recent quote, January 22 of this year, by the CEO of Shell Oil, Royal Dutch Shell. ''By the year 2100, the world's energy system will be radically different from today's. The world's current predicament limits our maneuvering room. We are experiencing a step change in the growth rate of energy demand and Shell estimates after 2015, supplies of easy-to-access oil and gas will no longer keep up with demand.'' That may have already happened, as we noted from that former chart and as we see with gas over $10 and oil over $115 a barrel.

''As a result'' he says, ''society has no choice but to add other energy sources.''

Have you noticed society doing that at any aggressive clip?

The next chart, and I want to spend some meaningful amount of time looking at what are those alternatives. We are very much like the young couple whose grandparents have died and left them a big inheritance. The young couple has now established a really lavish life style. They are living it up. Eighty-five percent of all the money they spend comes from their grandparents' inheritance—coal, petroleum, natural gas—and only 15 percent of it comes from their income. Now they look at how old they are, they look at their grandparents' inheritance, and see it is going to run out before they retire. They have to spend less or make more. That's exactly where we are.

Eighty-five percent of all of the energy we use is the equivalent of our grandparents' inheritance. We inherited it. It is there in the ground, coal, oil and gas. And only 15 percent of the energy we use is something else.

Now this 85 percent is going away. We have reached the maximum production, and if the world is going to follow the model of the United States, no matter what we do, the production in the world is going to be less and less, harder and harder to get, more and more expensive. That has happened in our country. And in spite of drilling more oil wells than all of the rest of the world together, and in spite of having the best oil people in all of the world, we have not been able to make M. King Hubbert out to be a liar because we still today, with all of that technology, with 530,000 producing oil wells, we still are producing only about half of the oil that we produced in 1970.

□ 1630

Well, what are the alternatives? What will we be using at the end of this magnificent age of oil?

And Hyman Rickover didn't know how long it would last. They were about 100 years into the age of oil. Oil had not peaked then. It wouldn't peak for another 50 years, 51 years or so, so he had no idea how long it lasted. But he said how long it lasted was important in only one regard; that the longer it lasted, the more time we would have to plan a rational transition from oil to other sustainable renewable sources of fuel.

Well, here we are today, and what have we done?

The President said in one of his State of the Union addresses that we are hooked on oil. We are indeed. And I think that rushing out there to drill in public lands, to drill in ANWR, to drill offshore is exactly the equivalent of giving a dope addict another fix. As the President says, we really, really do have to wean ourselves from these fossil fuels.

By the way, there are three groups out there that want to do this for very different reasons. One of those groups is the national security group that I mentioned that is really concerned that we have only 2 percent of the oil, and use 25 percent of the oil, and import almost two-thirds of what we use. Our second largest importer now is Saudi Arabia. It was Mexico. They've fallen back. That really places us in a very precarious position.

The President has indicated that we really must transition from these fossil fuels to renewables. What will they be?

And here we have a brief listing, and I think that this subtends about all of the possible renewables. By the way, we get more than the non fossil fuel energy nuclear power. 8 percent of the 15

percent is nuclear. We get about 20 percent of our electricity from nuclear. It's down just a little. Now 19 something, roughly 20.

The French get about 75, 80 percent. But we still produce more nuclear than France because we have a whole lot bigger economy than France has. We're the largest nuclear power producers in the world. That could and probably should grow. Only 7 percent in other renewables.

The things that I'm very fond of are solar and wind. I have a place off-grid, and I have solar panels and I have wind machines and batteries for storage, and so I'm a huge fan of solar and wind.

But these were 1 percent of 7 percent in 2000. They're really growing, growing maybe 30, 40 percent a year. That's huge growth. So they're four or five times bigger. .28 percent, big deal because this is only .07 percent. So these things that will be important sources of energy in the future are now very small, growing; rapidly, but still very small.

Wood, this is the paper industry and the timber industry wisely using what would otherwise be a waste product, and there's not a huge potential for growth there without doing what North Korea, has done, for instance. They're just cutting down their forests.

Waste energy, that's very popular. And there's a great facility up here in Northern Montgomery County. I've been by. I would be proud to have it by my church. It looks really nice. The waste comes in in big containers and in railroad cars and I don't even see it. And they handle it very well. I didn't even smell it when I was there.

But I want to caution that this huge waste stream is the result, largely the result of profligate use of fossil fuels. Look at it. Almost everything in that waste stream was the result of using oil, gas or coal. It's a really great idea now. Recycle what you can, burn what's left, better than burying it in the ground somewhere. But that's not a silver bullet, not a solution to our problem because in an energy-deficient world, this is really going to shrink because the energy just isn't going to be there to create all this waste.

Conventional hydro. Huge. We've tapped out on that in our country. We've probably dammed up some rivers we shouldn't have dammed up. But some people believe we could get as much from micro hydro. There's some really good small pelt wheels and turbines and so forth.

Alcohol fuel. 1 percent back then. Now, we've had a huge push for alcohol fuel.

There have been two big bubbles that have broken, two big hopes. One of them was the hydrogen economy. You don't hear very many people talking about it anymore. I think it's probably sunk in that hydrogen is not free for the having. There's no place you can go, like you can go for coal or gas or oil and drill a hole and get hydrogen.

You get hydrogen by using one energy source, using another energy source to create the hydrogen. You split water, or you use electricity, or you get it from natural gas. But you will always use more energy getting the hydrogen than you will get out of the hydrogen. That's the second law of thermodynamics. And if we can violate that law, why we can set aside the law of gravity, and then we won't have the kind of problems that we have today with energy, will we? That's an inviolate law that won't change.

So why are we talking about hydrogen if you will never get as much energy out of the hydrogen as it took to make the hydrogen? For two reasons. One, when you finally burn it, the product you get is the oxide of hydrogen. It's burned hydrogen. We call it water. When you look at water, it's burned hydrogen is what it is. And it's really clean, isn't it?

And the second thing is it's a great candidate for a fuel cell, which is probably at least two decades off. So you don't hear much talk about hydrogen. It may 1 day be an important part of our energy economy, but that day must await, I think, the development of the fuel cell because if you're simply going to put hydrogen in a reciprocating engine, why wouldn't you put the fuel from which you made the hydrogen in your reciprocating engine and save that fuel loss in the transition?

The second big bubble that broke was the corn ethanol bubble. And I really had high hopes for this before I did some back of the envelope computations, because I saw our farmers who were getting too little for their crops, huge energy represented in these crops, and I think they will make a meaningful contribution to our energy future. But not in the dimensions that were anticipated for corn ethanol.

The National Academy of Sciences, and this isn't ROSCOE BARTLETT, this is National Academy of Sciences, although my back of the envelope computations came to the same conclusion. The National Academy of Sciences says if we use all of our corn for ethanol, every bit of it, use all of it for ethanol, and discounted it for the fossil fuel input, which is huge, in fact, some people believe if you really cost account all the fossil fuel energy that goes into producing ethanol, more energy goes in than you get out of this. They were using 80 percent, which is probably not bad; that that would displace 2.4 percent of our gasoline. That's all of our corn, displace 2.4 percent of our gasoline.

They noted wryly that you could save as much gas if you tuned up your car and put air in the tires. And by the way, you would save half your gas if there was two people in every vehicle out there instead of one which is in most vehicles. You would save half your gas if your vehicle got 40 miles per gallon, rather than 20 miles per gallon, both of which are very doable with a little planning and buying the right car, by the way.

I think was 2 or 3 days ago there was a major headline above the fold in the New York Times saying that Third World leaders were complaining to us that we were starving their people because the high price of corn incented our farmers to shift land from wheat and soybeans to corn. That drove up the price of wheat and soybeans. There have been some problems producing rice around the world and, anyway, these commodities tend to more together. So the four basic foods of the poorest people in the world, they said, have been driven up drastically, essentially doubled in price, because we're making corn ethanol.

Hyman Rickover, by the way, I don't have that quote here but please do a Google search for Rickover and energy speech, and it'll pop up. He cautioned that you probably shouldn't be eating your food. 51 years ago. Maybe we should have listened.

Geothermal. That's true geothermal. That's not hooking your heat pump to ground temperature, which is a really good idea. If you think about what you're asking that heat pump to do this winter, if it wasn't hooked to ground temperature, you were asking it to cool the outside air, which might have been 10 degrees, so that it could warm up your air in the house. That's what you're doing.

How much easier its job would have been if it had been looking at 56 degrees, rather than 10 degrees, because 56 degrees is what ground temperature in here, it's mean annual temperature, it's what the water is that comes out of the wells.

Now, this summer, if you have an air conditioner in your window, and it's not a heat pump tied to the ground, what that air conditioner is going to be trying to do is heating up the 100 degree air outside so it can cool your house inside. Pretty tough job.

But if you had tied that air conditioner to ground temperature, now it's looking at 56, which looks really cool, compared to 100, doesn't it?

I didn't understand this phenomenon as a 7-year old, and I grew up without electricity and an inside toilet on a farm, and we kept our food in a spring house. And I thought there was something magic in that spring house and I didn't understand it, but I knew it was magic because I went in that spring house in the summertime and it was so cool. And I went in that spring house in the winter time and it was so warm.

Of course, when it was 100 outside, that spring house, which was maybe 65, that was Pennsylvania, it'd be a little colder than here, maybe 60 or so, that really seemed cool. In the winter time 60 seemed really warm compared to the zero or 10 degrees outside, so I thought there was something magic in that spring house.

The next chart takes a little deeper look at some of our alternatives. Now, we do have some finite resources, and we can exploit those, and we will exploit those, and we should exploit those, but they are finite. Some of them are huge.

The first of these are the tar sands in Canada. They are huge. There's as much potential oil in those tar sands as there is in all of the known reserves of oil in the world, more actually.

So why aren't we euphoric over that? It's because it's very difficult to get.

The Canadians are now using natural gas, which will run out. They're pumping water, which will run out. They're creating a huge tailings pond, which is kind of an environmental disaster, and they're producing a million barrels a day. That's a lot. It's a little over 1 percent of what the world uses. We use about 88 million barrels a day.

But they know it's not sustainable because they're going to run out of gas, they're going to run out of water, and what they're now exploiting is kind of on the surface, and it will soon kind of duck under an overlay, so they have to develop it in situ, and they aren't quite sure how to do that.

So there's a huge amount of energy there, potential. But there's also a huge amount of potential energy in the tides. The moon lifts the whole darned ocean 2 or 3 feet. That's a huge amount of energy.

But, you know, getting that in your gas tank is quite another thing. Energy, to be effective, must be concentrated, and in the tides it certainly isn't concentrated.

Now in our west we have oil shales, and they are really huge, maybe even bigger than the tar sands in Canada. Nobody yet is commercially exploiting those. There are some vigorous attempts today, and there may be some exploitation of those. There's at least a trillion barrels, maybe a trillion and a half, two trillion barrels there. And different experts differ on how much of that may be recoverable. But, again, because it's there, it's not in your gas tank, we will recover some of that.

As oil goes up, Goldman Sachs says by the end of the year it could be 150, $200 a barrel. Who knows?

The more expensive oil gets, the more sources there are of oil because you can now use oil which would have been prohibitive in cost with oil at lower prices.

Coal. I know a lot of people who say, don't worry about the future; we have sure supplies of coal. We have 250 years of coal, at current usage rates.

Be very careful, calibrate what people say when they tell you at current use rates. Now, if we had 250 years of coal, and we don't, I'll come to that in a moment. But if we had 250 years of coal at current use rates, if you increase that use only 2 percent, that's not much, we will have to do more than that. But if you increase it only 2 percent it shrinks to 85 years. The power of compound growth.

And if you use some of the energy coal to make it a gas or a liquid, because you can't put coal in the trunk of your car and go down the road, it now shrinks to 50 years.

And when one other observation. We have no alternative but to share it with the world. Let me tell you why. Because if we get oil from coal, we're then not buying some Saudi oil, which somebody else can buy, so it has the exact effect of sharing it with the world. That is inescapable. There is no way to avoid that.

So now that 50 years, since we use a fourth of the world's supply, and that 250 years was at current use rates for us in this country, not the whole world, now that 50 years, divided by four, shrinks to 12½ years. So if we had 250 years of coal and we increased its use only 2 percent, converted it to a gas or a liquid and shared it with the world, and we have no alternative, it'll last 12½ years.

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But the National Academy of Sciences says we haven't looked at the coal reserves since the 1970s and they believe there is more like 100 years at current use rates. So that 85 years and 50 years now shrink to something roughly half of that, and the 12½ years sharing it with the world may shrink to something like 5 or 6 or so years sharing it with the world.

The coal is there. It is huge. But our use of energy in the world is huge, huge. Eighty-eight million barrels a day, each barrel having the energy equivalent of 12 people working all year. That's an incredible amount of energy. Just look at the road you travel home on tonight and see the cars there, and that's replicated 1,000 times in our country and thousands of times around the world.

I was in Beijing a little while ago and they banned bicycles in parts of Beijing. There is no room for them. So many cars on the road. I was late to an appointment in Beijing because of traffic jams, late to an appointment in Moscow because of traffic jams there. I was there in 1973, and the streets were almost devoid of cars. You saw a military vehicle now and then. That's all you saw then. A whole different world now.

Well, there's nuclear, and we now get 8 percent of our total energy, almost 20 percent of our electricity from nuclear that could and probably should grow. But the nuclear we're now using, which is whitewater reactors using fissionable uranium is limited because there is a limited supply of fissionable uranium. That won't last forever.

There are breeder reactors. Nobody uses them for energy production. The breeder reactors, as the name implies, make more fuel than they use. You buy some problems with those, like you have to enrich the fuel and it's weapon's grade stuff and you have to move it around and there's challenges for terrorists getting it and such; but you get energy from it.

Then there is the only silver bullet that gets us home free, and that is nuclear fusion. I happily vote for the roughly $250 million a year that we spend developing that. We're joining with other countries in helping to develop that. I think the probability is low that we will ever be able to exploit that on a commercial scale.

Now, if you're sanguine believing that we're going to solve our energy problem with nuclear fusion, you probably think you can solve your personal financial problems by winning the lottery. You might do it. But the odds of you solving your personal financial problems by winning the lottery are about the same as our solving our energy problems by using fusion.

But because it is such an incredible source, the only thing that gets us home free, I happily support, and I would support more money if we had more skilled people out there who could be looking at this.

The next big bubble that we're talking about now is biomass, and I would caution, how much more energy you think that we can get from wastelands out there that aren't good enough to grow corn and soybeans on, that we could get from all of our corn and all of our soybeans?

I would like to take the last couple of minutes to note a couple of things that we have been doing.

I have a bill, and this is going to give a prize to the first farm that can be totally energy independent. If our farms can't be energy independent, we're really in trouble, aren't we?

The next chart is a bill, the Drive Act. That will encourage the development of vehicles that are more efficient that are flex-fuel. You can use any fuel. Not corn ethanol, but any of the alternative fuels.

I would just like to note that I find this whole challenge exhilarating. There is no exhilaration like meeting and overcoming a huge challenge. I spent some time going over these potential alternatives. I just want realistic expectations. There's no silver bullet out there. It's going to be a little of this and a little of that. And America is very good at that.

What we need in this country is a program that has a total commitment of World War II. I lived through that war. I'll be 82 years old on my next birthday, about 6 weeks from now. I lived through that war.

We need the technology commitment that we had when we put a man on the moon, that focus, and we need the urgency of the Manhattan Project. And I think that Americans are up to this challenge. I think we can lead the world in developing the technology to take us away from the fossil fuels to these other sources of energy.

The next chart I have already gone through. I will indulge for just a moment with the last chart. This is a great one to end on.

Mr. Speaker, this is a chart that shows how satisfied you are with life and how much energy you use. There are 22 countries, some of them using half the energy that we use that are happier with life than we are. There's lots and lots of opportunities out there to live really well using less energy,

and that's our challenge, and with proper leadership, America is up to it.

EXTENDING LEAST-DEVELOPED BENEFICIARY DEVELOPING COUNTRY BENEFITS TO THE SOLOMON ISLANDS—MESSAGE FROM THE PRESIDENT OF THE UNITED STATES (H. DOC. NO. 110–105)

The SPEAKER pro tempore (Mr. YARMUTH) laid before the House the following message from the President of the United States; which was read and, together with the accompanying papers, without objection, referred to the Committee on Ways and Means and ordered to be printed:

To the Congress of the United States:

In accordance with section 502(f)(1)(B) of the Trade Act of 1974, as amended (the ''Act''), I am providing notification of my intent to add the Solomon Islands to the list of least-developed beneficiary developing countries under the Generalized System of Preferences (GSP) program. In Executive Order 12302 of April 1, 1981, the Solomon Islands was designated as a beneficiary developing country for purposes of the GSP program. After considering the criteria set forth in sections 501 and 502 of the Act, I have determined that it is appropriate to extend least-developed beneficiary developing country benefits to the Solomon Islands.

GEORGE W. BUSH.

THE WHITE HOUSE, *April 17, 2008*.

HOUSE BILLS APPROVED BY THE PRESIDENT

The President notified the Clerk of the House that on the following dates, he had approved and signed bills of the following titles:

January 7, 2008:

H.R. 660. An Act to amend title 18, United States Code, to protect judges, prosecutors, witnesses, victims, and their family members, and for other purposes.

H.R. 3690. An Act to provide for the transfer of the Library of Congress police to the United States Capitol Police, and for other purposes.

January 8, 2008:

H.R. 2640. An Act to improve the National Instant Criminal Background Check System, and for other purposes.

January 28, 2008:

H.R. 4986. An Act to provide for the enactment of the National Defense Authorization Act for Fiscal Year 2008, as previously enrolled, with certain modifications to address the foreign sovereign immunities provisions of title 28, United States Code, with respect to the attachment of property in certain judgements against Iraq, the lapse of statutory authorities for the payment of bonuses, special pays, and similar benefits for members of the uniformed services, and for other purposes.

January 31, 2008:

H.R. 5104. An Act to extend the Protect America Act of 2007 for 15 days.

February 5, 2008:

H.R. 3432. An Act to establish the Commission on the Abolition of the Transatlantic Slave Trade.

February 13, 2008:

H.R. 5140. An Act to provide economic stimulus through recovery rebates to individuals, incentives for business investment, and an increase in conforming and FHA loan limits.

February 14, 2008:

H.R. 4253. An Act to improve and expand small business assistance programs for veterans of the armed forces and military reservists, and for other purposes.

February 15, 2008:

H.R. 3541. An Act to amend the Do-not-call Implementation Act to eliminate the automatic removal of telephone numbers registered on the Federal ''do-not-call'' registry.

February 28, 2008:

H.R. 1216. An Act to direct the Secretary of Transportation to issue regulations to reduce the incidence of child injury and death occurring inside or outside of light motor vehicles, and for other purposes.

H.R. 5270. An Act to amend the Internal Revenue Code of 1986 to extend the funding and expenditure authority of the Airport and Airway Trust Fund, and for other purposes.

February 29, 2008:

H.R. 5264. An Act to extend the Andean Trade Preference Act, and for other purposes.

H.R. 5478. An Act to provide for the continued minting and issuance of certain $1 coins in 2008.

SENATE BILLS APPROVED BY THE PRESIDENT

The President notified the Clerk of the House that on the following dates, he had approved and signed bills of the Senate of the following titles:

January 4, 2008:

S. 2436. An Act to amend the Internal Revenue Code of 1986 to clarify the term of the Commissioner of Internal Revenue.

January 7, 2008:

S. 863. An Act to amend title 18, United States Code, with respect to fraud in connection with major disaster or emergency funds.

February 6, 2008:

S. 2110. An Act to designate the facility of the United States Postal Service located at 427 North Street in Taft, California, as the ''Larry S. Pierce Post Office''.

March 6, 2008:

S. 2571. An Act to make technical corrections to the Federal Insecticide, Fungicide, and Rodenticide Act.

S. 781. An Act to extend the authority of the Federal Trade Commission to collect Do-Not-Call Registry fees to fiscal years after fiscal year 2007.

March 11, 2008:

S. 2478. To designate the facility of the United States Postal Service located at 59 Colby Corner in East Hampstead, New Hampshire, as the ''Captain Jonathan D. Grassbaugh Post Office''.

March 12, 2008:

S. 2272. An Act to designate the facility of the United States Postal Service known as the Southpark Station in Alexandria, Louisiana, as the John ''Marty'' Thiels Southpark Station, in honor and memory of Thiels, a Louisiana postal worker who was killed in the line of duty on October 4, 2007.

March 14, 2008:

S. 2745. An Act to extend agricultural programs beyond March 15, 2008, to suspend permanent price support authorities beyond that date, and for other purposes.

S.J. Res. 25. Joint Resolution providing for the appointment of John W. McCarter as a citizen regent of the Board of Regents of the Smithsonian Institution.

March 24, 2008:

S. 2733. An Act to temporarily extend the programs under the Higher Education Act of 1965.

LEAVE OF ABSENCE

By unanimous consent, leave of absence was granted to:

Mr. PALLONE (at the request of Mr. HOYER) for today.

Ms. GINNY BROWN-WAITE of Florida (at the request of Mr. BOEHNER) for today through April 24 on account of a family medical emergency.

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 Ms. WOOLSEY) to revise and extend their remarks and include extraneous material:)

Ms. WOOLSEY, for 5 minutes, today.

Mr. DEFAZIO, for 5 minutes, today.

Mr. SCHIFF, for 5 minutes, today.

Ms. JACKSON-LEE of Texas, for 5 minutes, today.

(The following Members (at the request of Mr. PRICE of Georgia) to revise and extend their remarks and include extraneous material:)

Mr. TANCREDO, for 5 minutes, today.

Mr. POE, for 5 minutes, April 24.

Mr. JONES of North Carolina, for 5 minutes, April 24.

Mr. PRICE of Georgia, for 5 minutes, today.

ENROLLED BILL SIGNED

Ms. Lorraine C. Miller, Clerk of the House, reported and found truly enrolled a bill of the House of the following title, which was thereupon signed by the Speaker:

H.R. 5813. An act to amend Public Law 110–196 to provide for a temporary extension of programs authorized by the Farm Security and Rural Investment Act of 2002 beyond April 18, 2008.

SENATE ENROLLED BILL SIGNED

The Speaker announced her signature to an enrolled bill of the Senate of the following title:

S. 793—An act to provide for the expansion and improvement of traumatic brain injury programs.

ADJOURNMENT

Mr. BARTLETT of Maryland. Mr. Speaker, I move that the House do now adjourn.

The motion was agreed to; accordingly (at 4 o'clock and 54 minutes p.m.), under its previous order, the House adjourned until tomorrow, Friday, April 18, 2008, at 9 a.m.

EXECUTIVE COMMUNICATIONS, ETC.

Under clause 8 of rule XII, executive communications were taken from the Speaker's table and referred as follows:

6138. A letter from the Director, Regulatory Management Division, Environmental