more efficient homes. Yes, we should have more efficient production capacities in business. And yes, we should do all that, too. But we can't do it only on efficiency, we can't do it only on oil production, we can't do it only on alternatives, we need to do all three.

And what so disappoints me about the majority Democrats in this House is some of them want to do one of those, occasionally they want to do two, nobody wants to do all three on the Democratic side. But that's what we need to do.

This is a crisis; it's not going to go away soon. And the American people have the right to have us in this House react and give them the tools they need to get the price of energy down to help them lift this economy.

I thank you for the time, Mr. WESTMORELAND. I yield back to my friend from Georgia.

Mr. WESTMORELAND. Thank you, Mr. CAMPBELL. And I'm going to go back down front and play a little musical chairs here.

Mr. CAMPBELL of California. Okay. Then I will stand here until you get here so we don't have a blank blue screen. Thank you very much.

Mr. WESTMORELAND. Thank you, sir.

You know, I want to just show the American people: We're not going to immediately drill ourselves out of the spot, Mr. Speaker. But in 1995, the Congress passed drilling in ANWR. President Clinton vetoed it. Had he not vetoed it in 1995 we would be getting one million barrels of oil today out of ANWR.

So is this an immediate relief? No. It's immediate relief from, I think, the speculation and the amount of escrowing. But this is an all-of-the-above issue. We've got to start drilling. We've got to start doing alternative fuels. We've got to build refineries. We've got to be doing onshore and offshore drilling. We've got to do coal-to-liquid. There are a lot of things we have to do and not just lay here in a fetal position.

But this is what really burns me up when I think about being dependent on foreign oil. This is a picture of Mr. Chavez from Venezuela and Mr. Castro from Cuba. In a recent interview on al Jazeera, Chavez called for developing nations to unite against U.S. political and economic policies. ''What We Can Do Regarding the Imperialistic Power of the United States.'' ''We have no choice but to unite,'' he said. ''Venezuela's energy alliances with nations such as Cuba, which receives cheap oil and are an example of how we use oil in our war against neo liberalism,'' he said. If you saw it on TV this morning, you saw where he threatened the European nations with no more Venezuelan oil because they passed an immigration law that he didn't like. This guy is not our friend. The bottom, on March 15, 2005, Washington Post; or as he put it on another occasion, ''We have invaded the United States with our oil.''

Now, I'm fixing to show you something, Mr. Speaker, and I don't know if you can see it or not, but maybe you'll get a look at it. But Mr. Speaker, I'm going to show you something that's really going to burn you up. This is a copy of the check that American families and businesses write to Mr. Chavez. Every day, 365 days a year, we write him a check for $170,250,000. Mr. Speaker, that's a crime. We could be writing those checks to American men and women with the jobs that we would create if we would use our own natural resources for our own benefit.

So Mr. Speaker, I've got 5 minutes to close. And I want to put up this address, because this address, Mr. Speaker, is for real energy solutions. It's a simple address, www.house.gov/westmoreland. And you can go to that address, Mr. Speaker—and I hope you will go tonight, Mr. Speaker—and see the names on there that have signed the petition, the commonsense petition, a petition that just says ''I will vote to increase oil production to lower the price of gas for Americans.'' That's as simple as you can get, Mr. Speaker. We had 32,000 hits on this Web site either last night or the night before last. Americans want to know where their Congressman represent.

And Mr. Speaker, let me close by saying this: So many politicians today that the American people hear on TV are talking about change. And I don't know if it's the kind of change that we're thinking about because, as an American citizen, the change that I hope that Congress or that elected officials would have, Mr. Speaker, is a change that they would be honest, that they would be honest with what they tell the American people and not come to Washington and write a bunch of legislation that's very confusing about what it really means.

And I read your excerpts today, Mr. Speaker, that read what some of your colleagues had said about the legislation that they passed and what it was going to do for fuel prices. And some of that legislation was over a year ago, and it has just continued, gas is at $4.08 a gallon. But Mr. Speaker, if I could talk to the American people, I would tell them this: that there will never really be any change in this country, Mr. Speaker, until the people that get up every morning that are citizens of this land, that look in the mirror, and if that person, Mr. Speaker, that they see in the mirror will not change, then we're not going to change.

And so sometimes it takes effort, Mr. Speaker, from the men and women out there that watch us and listen to us and abide by the laws that we make to take things into their own hands and to let us know how they feel. Over a million people have signed a petition, ''Drill Here, Drill Now, Pay Less.'' We're hearing from them. We need to hear from you.

Mr. Speaker, if I could talk to the American people, I would tell them, your Congressman and your Senator need to hear from you. You need to know if they're willing to vote to increase the production of oil in this country from our own natural resources, be less dependent on foreign oil and foreign resources, and lower the price of American gas. And you can find out if your Congressman is on that petition or not by going to house.gov/westmoreland.

You're going to hear all kind of arguments of why they didn't sign it or haven't signed it, but Mr. Speaker, those arguments are so simple that the argument doesn't even hold up.

So Mr. Speaker, with that, I'm going to yield the well and yield my time here, and just thank you for your patience in listening to the truth that's been brought to you. And thank my friends that have come down tonight, my colleagues that have come down to help me, Mr. Speaker, try to explain to the American people that we're serious about bringing them some relief at the pump.

□ 1445

PEAK OIL

The SPEAKER pro tempore (Mr. LOEBSACK). 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, I am pleased that my colleagues for the last hour helped to make the point that oil is high and gasoline is high because there is an imbalance between supply and demand. There are a lot of differences of opinion as to how we got here, why we're here and what we ought to do to reduce the price of gas.

The next chart is really an historical one. This whole saga begins in 1956 when a geologist of the Shell Oil Company gave a talk to a group of physicians on the 8th day of March in San Antonio, Texas. And he made a prediction which was an audacious prediction then. At that time, the United States was the king of oil. We were producing more oil, using more oil and exporting more oil than any other country in the world. Here we were in 1956. He predicted that just 14 years later, in 1970, the United States would reach its maximum oil production. That was sheer heresy then. Nobody believed him. He was ridiculed. But right on schedule, 14 years later, in 1970, the United States peaked in oil production.

Now he was predicting this for only the lower 48 States, which is shown here, Texas plus the rest of the United States. Then we found a lot of oil in Alaska. We found some oil in the Gulf of Mexico. And we learned more and more how to get oil from natural gas liquids. By 1980, looking back, you can see, gee, M. King Hubbert was really right, wasn't he? We did reach maximum oil production in 1970. I'm going to keep coming back to that.

The next chart shows this same curve. If you will look at the red lines, that is up to 1970 and after 1970. The yellow triangles represent the prediction of M. King Hubbert for the lower 48. The red diamonds are what we actually produced because we found additional oil in Alaska and the Gulf of Mexico that he did not include in his prediction. But notice that that just produced a blip in the slide down the other side of Hubbert's peak. And there was a lot of oil. Alaska alone for several years was one-fourth of our total production of oil.

This chart is presented by Cambridge Energy Research Associates to convince you that M. King Hubbert didn't know what he was talking about. Now if you were a statistician, you might be convinced. But for the average American, they don't see this yellow triangle curve being meaningfully different from the green squares. And the intent of this presentation by CERA was to convince you that you really shouldn't believe M. King Hubbert when he predicted that the world was going to be peaking in oil about now because he was wrong about his prediction of peaking in 1970. I would think just about everybody would say, gee, he got it pretty right, didn't he? He predicted this, and this is what it was, and that seems to follow pretty closely.

Now what do we mean by ''peaking?'' By ''peaking'' we mean that the oil field, the country, the world, whatever universe you're looking at, has reached its maximum production for producing oil. And this happens in each individual oil field. And that is how M. King Hubbert was able to so accurately makes his predictions because he noticed in an individual oil field that the production of oil increased and increased until you reached a high point at about which half the oil was pumped, and the last half logically is going to be harder to get than the first half, and so it's going to be less and less oil as you went down the other side. He predicted that the United States would peak in 1970. We did right on schedule.

And then in 1979, he predicted that the world would be peaking about now. And here we have the data from the two entities, the IEA and the EIA, that track the use, production and consumption of oil. And as you can see, they are in reasonable agreement. And for roughly the past 3 years, oil production in the world has been flat. By the way, if they were drawing this chart today, it would be a much taller one. They would have to change the scale for the price of oil because they had it here about $95 a barrel. Now it's way off the top of the chart, off 130 something dollars a barrel. But these two curves are still plateaued.

The next chart is a quote from what I think will shortly be recognized as perhaps the most insightful speech given in the last century. That speech was just found a few years ago and was put on the Web. And you can get it by doing a Google search for Hyman Rickover, the Father of our Nuclear Submarine and energy speech, or you can go to our Website, and there is a link there.

It really was a very prophetic speech. Remember, that was 51 years ago, the 14th day of this past May, to a group of physicians in St. Paul, Minnesota. And these are some of the things he said in that speech. And I hope you will pull it up and read the whole speech because it's really very insightful and very prophetic. There is nothing man can do to rebuild exhausted fossil fuel reserves. They were created by solar energy 500 million years ago, he says, and took eons to grow to their present volume. The world as a whole and our country included has appeared to behave as if these fossil fuels were inexhaustible. The plea now to reduce prices is simply to drill more.

What we will see shortly is that, as everyone will know, if you stop and think about it, that oil is finite. It is not infinite. There is a limited supply. The only thing that can be argued is how limited is that supply? He says, in the face of the basic fact that fossil fuels are finite, now our behavior has been a denial of this reality. In the face of the basic fact that fossil fuel reserves are finite, the exact length of time these reserves will last is important in only one regard: The longer they last, the more time do 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.

Have you noticed anybody anywhere doing what he suggested here? I really love this next paragraph because I think it really describes us, I'm sorry to say. Fossil fuels resemble capital in the bank. A prudent and responsible parent will use his capital sparingly in order to pass on to his children as much as possible of his inheritance. A selfish and irresponsible parent will squander it in riotous living and care not one whit how his offspring will fare. I have 10 children, 16 grandchildren and 2 great grandchildren. When I am asked to vote to drill in the Arctic National Refuge and our public lands and offshore, I remind them of the fact that I have these children, grandchildren and great grandchildren. And I ask them, wouldn't it be nice if I left a little oil for my kids, my grandkids and my great grandkids? When they appeal to me to vote to drill in these places, I ask them, if you can pump ANWR tomorrow, what would you do the day after tomorrow? And there will be a day after tomorrow.

The next chart is another quote from Hyman Rickover. I suggest that this is a good time to think soberly. This is 51 years ago. I think this is a good time to think soberly about our responsibilities to our descendants, those who will ring out the Fossil Fuel Age. He may be the first person that I can find who recognizes that there would be a Fossil Fuel Age. In the 8,000 years of recorded history, Hyman Rickover noticed that the Age of Oil would be but a blip in the history of man. Wow. What a time it has been. We might give a break to these youngsters by cutting fuel and metal consumption so as to provide a safe margin for the necessary adjustments which eventually must be made in a world without fossil fuels.

And one day, friends, there will be a world without fossil fuels. Now that is not tomorrow. And we are not running out of oil. Half of all the oil that will ever be recovered is yet to be recovered. What we're running out of is our ability to pump this oil as fast as we would like to use it. We now are, I believe, at the top of Hubbert's peak. We will have a lot of oil pumped in the future, as much as all the oil we have pumped in the past. But it will be ever harder and harder to get. Less and less of it will flow. And it will come at higher and higher costs.

The next chart really helps us to put this in a perspective. I haven't gone back the 8,000 years that Hyman Rickover mentioned. I have gone back only 400 years in history because it wouldn't matter because if I went back the rest of the 8,000 years, the use of energy would not be as wide as the baseline here, and so it would still look like this chart.

This shows the beginning of the Industrial Revolution. It shows that it started with wood, then, coal, and then gas and oil. And wow, did it take off with gas and oil. Now we're going to see this curve in several other charts. In most of those charts we will have expanded the abscissa, so that this curve will look a little different.

What we have here is the incredible increase in the rate of the use of oil up through the Carter years. Every decade up through the Carter years we used as much oil as we had used in all of previous history. Now that is an incredible statistic. What that means is that when you use half of the oil, that only 10 years remain. Now that is not going to be 10 years of increasing rate and then you're going to be fall off a cliff, because that is not the way we can pump the oil.

The next chart introduces us to another reality that we really need to be cognizant of. Not only is there a limited amount of oil in the world, but how it's distributed in the world is important. The world according to oil. This is what your planet would look like if the size of the Nation was relative to how much oil it had in reserves. Saudi Arabia dominates the landscape. It should. It has about 22 percent, a bit more than one-fifth of all the reserves in the world. Iraq, Kuwait, Iran, second, third and fourth, have huge amounts of oil. Russia and Venezuela have large amounts of oil. Russia now I think is the number one exporter in the world. They don't have the most oil in the world. But they are very aggressively pumping it. We're very aggressively pumping oil by the

way. Here we are, the United States, with 2 percent of the oil in the world, and we are producing 8 percent of the oil in the world.

It is an interesting depiction here. It shows some really interesting things. The first and third largest suppliers of oil to our country are Canada and Mexico. Mexico just slipped to number 3. They used to be number 2. Now that has been taken up by Saudi Arabia. But notice that Canada and Mexico together have about as much oil as we. Canada doesn't have much oil. They can export oil because Canada doesn't have very many people. And Mexico's people are too poor to use it. So they can export oil. I read one account that said within 8 years, Mexico, our third largest supplier, will be an importer of oil. Notice that Venezuela dwarfs everything else in our hemisphere.

□ 1500

Another really interesting thing here is the size of China and India. Here they are, China and India, and together, they don't have as much oil as the United States, with more than 2.3 billion people and with rapidly growing economies.

The next chart looks at this distribution of oil, where it is in the world another way, and you could have seen most of this from that chart. Here we look at the 10 largest reserves of oil in the world. Who owns them? Ninety-eight percent of those big 10 are owned by countries, not companies. Luke Oil, in Russia, is kind of independent, and they have only 2 percent.

Now, who produces the oil?

In this country, we focus on the big 4, and some people think they're gouging us. We have legislation now to look at whether they're gouging us or not. But 78 percent of all of the oil in the world is produced by those in the top 10—this is 78 percent of the top 10—by the 98 percent of the top 10 who have the oil. The big oil companies produce only 22 percent of the oil, and the amount of oil that they own isn't even large enough to show up in the top 10. Notice they don't even show here.

The next chart is another way of looking at these realities. These numbers, by the way, inspired 30 of our leading citizens—Boyden Gray and Jim Woolsey and McFarland and 27 others, who are some retired four-star admirals and generals—to write a letter to the President, saying, ''Mr. President, the fact that we have only 2 percent of the world's oil reserves and use 25 percent of the world's oil and import two-thirds of what we use is an entirely unacceptable national security risk. You really have to do something about that.''

Subsequent to that, in a State of the Union message, the President noted very correctly that we're hooked on oil. That's a good analogy. We are as hooked on oil as the drug addict is hooked on his drug. The President made that very clear. We are less than 5 percent of the world's population—1 person in 22—and we use 25 percent of the world's oil.

As I mentioned before, we pump 8 percent of the world's oil, which means we're pumping our oil fields four times faster than the average in the world.

The next chart is one where, if you only had one chart to look at, this chart has more information on it than any other chart that I have seen relative to oil and relative to where we are and where we'll probably be.

Here is the curve that you saw before. It was a very steep curve, do you remember? I said that you would see it in subsequent charts, and here it is again. We have really spread it out here. Before, it went 400 years. Now it goes 100 years, 1930 to 2030. You will see here the recession that occurred in the 1970s.

There is an old saying: It is an ill wind that blows no good.

The good thing that came out of those oil price spike hikes in the 1970s was the reality that, gee, we could use this oil more efficiently. Boy, we've really done that. There was a recession that resulted in an actual drop in the demand for oil. Then we came out of that recession, and we were focused on efficiency. Your air conditioner is probably three times as efficient now as it was then, and so is your freezer.

So now we are growing our economies at the same rate we were growing them before, actually faster, because China and India were not really involved then in using huge amounts of energy. Now the growth is much slower. So let's be thankful for those oil price spike hikes in the 1970s, because it alerted us that we really could do better, and we really are doing better.

These bars here show when we found the oil, and we found most of it a long time ago. There were some huge finds back in the 1950s and some really, really big finds in the 1960s to 1970s. Notice that, from about this point on down, from 1980 particularly on down, it's down, down, down, down. This is with ever better techniques for discovering oil—3–D seismic and computer modeling. On the average, every year, we have found less oil than we've found the year before.

Now what will the future look like?

It's obvious on this chart that, ever since about 1980, we have not found as much oil as we're using, so now we've been dipping into the reserves. This area here, which is volume of oil, has been made up with using some of the reserves we found back here. So what will the future look like? There are two things that will determine what the future looks like:

One is how much oil we find and the rate at which we use the reserves we already have.

Now, you can make a judgment as to how much oil we will find in the future. I, personally, wouldn't have drawn this line. It won't be smooth like that; it will be up and down, but I wouldn't have drawn that line quite that high. I think it comes in a little lower if you're looking at that, but let's assume that that's what it is.

The difference between what you find and what you're using is going to have to be made up by dipping into the reserves back here. So you make your own judgment as to what the future would look like, and that will depend upon the rate at which we use these reserves and the amount of new reserves that we find.

The next chart shows a projection of discoveries, which is totally inconsistent with the chart we just saw. This is a projection of discoveries by the Energy Information Agency. This is a very interesting and kind of bizarre thing that has happened. The USGS does some computer modeling, looking at: Gee, where will we be in the future? How much oil will we find? They do some computer modeling, and they put a lot of inputs, different ones, into the computer, and then they get results out.

They took the mean frequency of that, and they compiled some data which said that the mean of what we're going to find—the F, they said—looks like this number. Well, somehow, when that got to the Energy Information Administration, that F became a P for probability. They make use of that, which, from a statistician's perspective, is just bizarre.

They make the statement that the 50 percent probability is the mean—of course it is not—and that the 50 percent probability is more probable than the 95 percent probability. This is fairly old. This is several years old now, as you can see, but they made a prediction way back here that the 50 percent probability green line is the amount of oil we were going to find in the future. We've been finding it at this rate. This is the discovery rate. They said, somehow, it's going to turn around, and it's going to go back up following that green line.

The 95 percent probability is the yellow line there. Well, obviously, 95 percent probable is more probable than 50 percent probable, and it's no surprise that the actual data points have been following the 95 percent probability.

The next chart is from one of four reports that your government has paid for and has pretty much ignored. Two of these reports came out in 2005. This is a quote from the first of those done by SAIC, a very large, prestigious, international organization. This was paid for by our government. It's called the Hirsch Report, after Robert Hirsch, who was a principal investigator on the report. Another one came out a little later in 2005 from the Corps of Engineers, and it says essentially the same thing that this report says. Then in 2007, two additional reports came out—one from the Government Accountability Office and, later in the year, another from the National Petroleum Council.

All four of these say essentially the same thing in different words, that the

peaking of oil is a certainty; it is either present or imminent with potentially devastating consequences. Now, that's the message of all four of these reports.

This is a quote from the first of those reports: ''World oil peaking is going to happen. World production of conventional oil will reach a maximum and decline thereafter.''

That happened in our country in 1970. It is inevitable. It will happen in the world. Oil is finite. The amount of oil in the world is not infinite. There will be a time when we reach the maximum production of oil, after which, it is going to be harder and harder to get, and less and less will be available at ever-increasing costs. That maximum is called the peak. A number of competent forecasters project peaking within a decade. Others are less certain when peaking will occur. There are a lot of things, a lot of complexities, that determine that: Geopolitical things, the economies of the world. A lot of things affected it. Technology affected it.

Oil peaking presents a unique challenge. Then they make a statement, a stunning statement. The world has never faced a problem like this. You cannot go back in history and find any precedent for this problem. The world has never faced a problem like this. Without massive mitigation more than a decade before the fact—and apparently from the data we just showed you, the fact is upon us. 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 things that have been happening in the last few months are quite revolutionary. I was surprised at how quickly food shortages developed around the world.

The next chart is another quote from the first of these four reports that your government has paid for: ''The peaking of world oil production presents the world with an unprecedented risk management problem. As peaking has approached, liquid fuel prices and price volatility will increase dramatically.''

Wow, that's exactly what has happened, isn't it? It will increase dramatically.

This, I believe, is the 46th time that I have come to the floor. I began, I think, on the eighth day of March in 2005. When I first came here, oil was 50-couple dollars a barrel. Now it's about $135 a barrel. Gasoline, I think, was less than $2 a gallon. Now it's over $4 a gallon. So it is true that these prices have increased dramatically. The economic, social and political costs will be unprecedented, they say.

The next chart—and I show this chart because it really depicts this very clearly. I have two charts to address this problem. I just want to make the point that drilling for oil is not the ultimate solution. This chart assumes that we are going to find as much more oil as all the reserves that now can be pumped. That's incredible. You will remember that chart of the oil that we found going down, down, down. What is going to turn that around? This chart assumes that we're going to find as much more oil as all of the oil that is yet to be recovered. This is that curve. I told you you'd see it again in several charts. Here it is again, the dip in the 1970s, and here we are a little after 2000.

This chart was made a few years ago. This red line here is the mean of 2 percent growth and 2 percent decline with what they say is the mean, the expected value, of 3 trillion barrels of oil. You will see data that varies a little bit, but it is the amount of oil that most experts believe will ever be pumped. Now, discovered oil that will ever be pumped is about 2 trillion barrels. This has it at 2.28 trillion barrels. This predicts we're going to find, roughly, 800,000 more barrels. Almost half of all of the oil that we have ever found they predict is going to be found in the future. Even if we do that, that pushes the peaking of oil out, they say, on this chart to only 2016. Wow, that's not very far out.

Now, they have another line here which says, if you extend this growth further and assure that you're going to have a very rapid decline, then you can push the point out to 2037.

The next chart looks at these same data. Here, they have, roughly, the 2 trillion again. I told you the numbers would vary a little bit. Here is the 2 trillion again. This is 1.92 trillion. We would have peaking about now if that had occurred. This is from CERA again. CERA believes that we will find as much oil as all the oil that is yet to be pumped, and they don't show me further on. I have no idea what that curve will do and how abruptly it will fall after that, but even with their predictions, they are pushing the peak out only—well, you can see it here—to about 2030, which was the peak on the other chart.

Unconventional oil. This may be a good time to spend just a moment talking about unconventional oil. We, actually, have some huge reserves of unconventional oil.

□ 1515

The most exploitable of these reserves is in Canada, it's the tar sands of Canada, and they are huge, 1.5 trillion barrels of oil. That's more oil potential there than yet all the oil yet to be recovered in all the fields of the world. And they are producing about 1 million barrels a day.

So why aren't we sanguine and the future going to be rosy? Because what they are doing there, they know they cannot continue to do it, it's not sustainable. They are using natural gas, which will run out, and then they may have to build a nuclear power plant.

They are using water, which is a limited water supply. I understand they are now using a shovel which lifts 100 tons. They dump it into a truck which hold 400 tons, and they hook that with natural gas, maybe using more energy than they get out of the oil, but, never mind, the natural gas is stranded. By that we mean that there is not many people to use it.

Natural gas is very hard to move from one place to another. It's stranded and so it's cheap. Economically they are producing this, I understand $18 to $25 a barrel and it's bringing $135 a barrel. That's a really good profit margin.

But the profit margin you really need to be looking at here is the energy profit margin. How much energy do you put in, and how much energy do you get out?

Well, soon, when they have exploited this above ground, my understanding is it ducks under an overlay and then they are going to have to decide how to develop it in situ. They don't know yet how to do that.

We have in our country huge potential reserves. It's not quite oil, but with some manipulation it can be made into oil. These are the so-called oil shales of our west. We have there at least probably 1.5 trillion barrels of oil again. But, so far, no one has found any economically feasible way to develop these potentially enormous reserves.

Now, we use, in the world, about 84, 85 or so million barrels of oil a day. In our country we use 21 million barrels of oil a day. Each barrel of that oil—and when I first saw this number, I couldn't believe it—each barrel of that oil has the energy equivalent of 12 people working all year.

I thought, wow, that can't be true, just a barrel of oil, 42 gallons. Then I thought how far that gallon of gasoline at $4 a gasoline, by the way, still about the same price as water in the grocery store, how far that gallon of gasoline took my Prius. It takes me 48 miles.

Now I can pull my Prius 48 miles, but that would take a long time with come-alongs and cables and guardrails and trees and so forth to pull it along that 28 miles.

What that means is that until very recently, when oil prices spiked up, I can remember when oil was $10, $12 a barrel. When oil was $12 a barrel you could buy the life-style improvement of one person working for you all year for $1.

At $12 a barrel, one barrel is the work equivalent of 25,000 man-hours of 12 people. No wonder Hyman Rickover in his speech said that the poorest of people live better than ancient kings. This has enabled us to establish an incredible quality of life.

When I look back at this, you know, I keep asking myself the question, why didn't somebody, when we found this incredible wealth under the ground, stop and ask, what can we do with this to provide the most good for the most people for the longest time?

That is not what we did. What we did was no more responsibility than the kids who found the cookie jar or the

hog who found the feed-room door open. We have just been pigging out. A lot of my colleagues would like to continue doing that.

What they want to do is drill. I have 10 kids, 16 grandkids, two great grandkids. I want to drill, but I want to use what we get from drilling to invest in alternatives. My wife has a great—and I see I am joined by a great friend, and I am going to yield to him in just a moment—my wife has a great observation on all of this. She uses that old country and western—it's too late now to do the right thing.

We have blown 28 years. I say that because by 1980 we knew really well of a certainty that M. King Hubbert was right about the United States peaking in 1970. By 1980 we knew that, no question about it. He predicted in 1979 that the world would be peaking about now. I keep asking myself the question, why haven't we done something about it?

I thank you, friend, for joining us. I am happy to yield to you.

Mr. YOUNG of Alaska. I thank the gentleman for yielding. I want to congratulate the gentleman for bringing this to the floor of the House many times and trying to explain to the public what peak oil mean. I have to say I was a doubter, and over the period of time that you have explained this to me I became a believer.

It looks, as you have said before, as the population growth, the consumption factor and what we have available. It's sad that we haven't addressed this issue.

Now I am one of the ones that believes in drilling as you mentioned but I also agree with you that now we should step forward and solve the problem for the future today.

We can do this with all the efforts—because if we don't, like you say, your grandchildren and your great grandchildren and possibly your greater grandchildren are going to face a great dilemma.

I am confident, as this Congress goes forth, or the people demanded that we will find solutions to this. But right now it has been too easy to buy oil from overseas, not realizing we were running out. We got accustomed to it, like you say, going to the cookie jar and not looking down the road.

Again, I want to thank the gentleman.

I mean, you are doing a great favor for this Nation to try to awaken the people that, yes, we can drill and we can solve the problem, and we may lower the prices temporarily.

But what we ought to be doing is utilizing some of our oil now and taking the revenues that are generated and put it into that—and I reluctantly say this—from Alaska, but into the bridge to the future, so that we will have those alternative forms of energy.

We can move products with other than fossil fuels. We can manufacture with other than natural gas.

There are a lot of things that we just must do. Again, I want to thank the gentleman for doing this, and I am pleased to be part of your effort and hopefully, as time goes by, this Congress will wake up. Right now, they are not. But you keep doing it and maybe the public will wake them up.

Mr. BARTLETT of Maryland. Thank you, sir. I am really honored you came to join me.

You mention doing things. The thing that you mentioned is right on our chart here. I was very pleased. I think I may be the only original cosponsor on your bill to drill in ANWR and use all of the revenues to invest in alternatives.

Because I have said for all the years now that I have voted ''no'' for drilling in ANWR, that because of my kids, my grandkids, and great grandkids and their future that I would vote to drill in ANWR when we used all the revenues we get from ANWR to invest in alternatives.

Your bill does that, and so I was proud to sign on. By the way, I will note that there will be some environmental impact in ANWR. There is always an environmental impact. When I go out the door and step on my grass there is an environmental impact. But I think that my walking on the grass is justified.

It's obviously a trade-off. If you have a dollar and you spend it for a Coca-Cola you can't spend it for a candy bar. So everything we do in life is a trade-off. I think that the environmental damages that will be done in ANWR will be minimal compared to the advantages of our country and our civilization resulting from the monies that we are going to spend on the developing alternatives.

Mr. YOUNG of Alaska. If the gentleman will yield just one more time, you are absolutely right. There is nothing that we do that doesn't have an environmental impact. The only thing we can do to stop having an environmental impact is stop living.

We can face up to that, what can be done, and we have done that, is to do it as safe as possible, and that can be done. But the trade-offs, if we don't drill, and take those dollars and put them in renewable sources of energy, the trade-off is a disaster environmentally.

I have said this, if you want to see a disaster where they haven't been able to develop, as they should, their fossil fuels, et cetera, go to the countries that cut every tree down, because it's the only source of power they have.

You go to Ethiopia, you go to other countries of Africa. There is no living thing that can be burning because there is no other forms of energy. That's what I don't want to see this Nation—let's look for, as you mention, let's recognize it as an invite. Material oil will run out, let's use the revenues now and plan for the future and have availability of energy.

If we do it now, then we are going to be in good shape in the future. Not you and I, but you and your grandkids.

Mr. BARTLETT of Maryland. Thank you, sir. I am honored you came to the floor to join me.

Here is a list of the things I have been personally involved in, the Senate 2821, Senators CANTWELL and ENSIGN, passed it 88–8. It's a bill that extends renewable energy tax credits.

Our companion bill to that, H.R. 5981, simply picks up the Senate bill. If we pass that bill in the House, then it goes directly to the President.

This is a bill I was just talking about with my good friend, DON YOUNG, renewable domestic resources, ANWR, I am happy to be I think the only original cosigner of that bill. I am honored that he gave me that opportunity.

Peak Oil Caucus and resolution, I started the Peak Oil Caucus with my good friend, TOM UDALL.

H. Res. 12 is a resolution that says that the Congress recognizes that there is such a thing as peak oil. I mean, how can you not recognize that the sun comes up and the sun comes down. Of course, there is such a good thing as peak oil.

I proudly supported a new law not yet fully supported by our administration, ARPA–E. This is patterned after the enormously successful DARPA that has brought a lot of things to fruition. We wouldn't have an Internet if it weren't for DARPA. We wouldn't have pilotless airplanes if it weren't for DARPA.

I want an ARPA–E. We are going to have very limited resources, very limited time. What are we going to invest it in? There are some things that businesses with its short sight and the next quarterly report just can't invest money in. That's what DARPA has been doing for years with such enormous success, just investing in these things that are really risky but have enormous payoff. That's what DARPA has done very successfully. That's what I hope ARPA–E will do too.

I voted to increase CAFE standards. I was driving to work the other day and one lane in front of me was an SUV with one person in it. In the lane next to it was a Prius. By the way, I bought the first one in Congress and the first one in Maryland, now driving a second one. There were two people in the Prius, and I noted to myself, the people in that Prius are getting six times the miles per gallon, per person, as compared to the people in that SUV.

We have enormous opportunities for conservation, and there is only one thing that will reduce the price of oil tomorrow. Drilling will not do it, because no oil will flow for years after we start drilling.

As a matter of fact, it will make the problem a bit worse tomorrow, because it takes energy to drill, and that will simply compete for additional energy. Only one thing will reduce the price of oil tomorrow, and that's use less of it. There are only two ways we will get there.

One of those the market will provide, and that is if we wait until oil gets so

high that it destroys the world's economies, and then those economies will collapse and the demand for oil will collapse, demand destruction, they call it, and then the price will drop. That's a very painful way to get the price down.

The only other way to get I down, by reducing demand, is to simply voluntarily reduce demand. We have a lot of opportunities to do that.

Let me run through this chart. I have a self-powered farm. If a farm can't produce all its own energy and a little bit left over for somebody else, we are in trouble for the future, aren't we, as we run down this other side of this fossil fuel curve.

Tax credits for hybrids, I would like to expand that so that more people would be encouraged to buy them, to give more tax credits for those.

Then the DRIVE Act, the DRIVE Act would require that all of our cars, for about $100 extra—maybe less than that with our max production—would be flex-fuel cars and they could use any fuel. By the way, every car produced in Brazil today is a flex-fuel car. They look just like ours. They cost just a trifling more to do. Who knows what the fuel in the next 16 years will be. A fleet turns over every 16 years, roughly. So we ought to be prepared for that. We really do need flex fuel cars.

The next chart, and this one points out another reality of the world in which we live, and this is who owns the oil? Now, we have looked at that another way previously, but this looks at the countries that are buying oil.

You can see a dollar sign there in a few places, not very—I have to look to find them, by the way, but I really don't have to look to find the symbols for China. They are everywhere. They are everywhere.

They are Russia, they were going to buy Unocal in our country. They are heavily invested in south—not only are they buying oil, they are buying goodwill. Do you need a soccer field? Hospital, how about roads? So China is out there very aggressively buying oil all over the world.

□ 1530

The next chart, and I would like to put where we are in context and look at all of the power we are using. We have been looking just at transportation. That is where the real challenge comes in the future.

This looks at U.S. energy consumption by sector. Electric power, transportation, and we have been talking primarily about liquid fuels. So 2 or 3 percent of this is produced by diesel, but we are using gas. And gas is not thought of as a liquid fuel, but you will see the city buses running on gas, and so it is appropriate to look at that.

Here is transportation, industry, residential and commercial.

The next chart looks at the reality of the future. It is very obvious that oil is finite, that it will not be here forever. Hyman Rickover was the first that I know of who in a very dramatic way called our attention to that.

We will eventually transition. Geology will ensure it. We will transition from fossil fuels to renewables. We have some finite resources to help us do that. We have already talked about the tar sands and the oil shales. I have no idea how much we will get from those. I don't know how much money I might win in the lottery, but I don't plot my future on future winnings in the lottery. And I am going to win no money in the lottery because I don't play the lottery.

So we need to have a plan B. Coal. In a few minutes I will have a chart that looks at coal. We have a lot of coal compared to the rest of the world. Our fabled 250 years of coal is not really 250 years. The National Academy of Sciences recently looked at it. They say we haven't looked at coal since 1970, and we have been using a lot of coal since 1970. They said we now probably have 100 years of coal at current use rates. But be very careful when someone says ''current use rates.''

We have great difficulty in understanding the exponential function. When Albert Einstein was asked after nuclear energy, what is going to be the next great force in the world?

He said the most powerful force in the world is the power of compound interest. Just 2 percent growth, so anemic that our stock market doesn't like it and it tends to shudder when you only have 2 percent growth, 2 percent growth doubles in 35 years. It is four times bigger in 70 years, eight times bigger in 105 years, and 16 times bigger in 140 years. That is just 2 percent growth. And so this 100 years at current use rates could easily shrink to 25–30 years with increased use rates.

Then we have nuclear. I am a fan of nuclear. It has been very safe. We produce roughly 20 percent of our electricity with it. And France produces 75–80 percent with it. We use a light water reactor using fissile uranium, and that will run out. Then we can go to breeder reactors and as the name implies, breed fuel, and we won't run out of that. But we do buy some problems with that of transporting weapons grade material for further use.

But those I think are solvable problems. The only one that gets us home free is nuclear fusion. That's harnessing the power of the hydrogen bomb. By the way, we have a great nuclear fusion plant, it's called the sun. That is how it produces its energy.

I happily vote for the $250 million a year that we spend on fusion, but I think the odds of commercializing that are relatively small. I would be delighted if we are able to do that, but I would not count on that. You have to have a plan B.

Now we look at the renewable sources. And by and by, all of our energy will come from sources like these and maybe a couple more that we might add to it. Solar and wind and true geothermal. A lot of people talk about geothermal where you are hooking your air conditioner to ground temperature. Gee, do that please because what you are trying to do in the summer when you air condition your house is heat the air outside when it is already 100 degrees outside. It is easier to warm up the ground which is 56 degrees; and in the wintertime, 56 degrees looks pretty warm compared to the 10 degrees it might be outside.

But the geothermal I am talking about is tying into the molten core of the earth. They do that in Iceland. I don't see a single chimney in Iceland.

Ocean energy, an incredible amount of potential energy in the oceans, but hard to harness. We are working at it.

Agricultural resources, soybean and biodiesel. Just a word about those. I am a big fan of agriculture. I come from a farming background. I hope that agriculture will play a meaningful role, but it will not be a huge role.

The National Academy of Sciences has said that if we used all of our corn for ethanol and discounted for fossil fuel input, it would displace 2.4 percent of our gasoline. They said if we used all of our soybeans for diesel and discounted for fossil fuel input, it would displace 2.9 percent of our diesel. These are trifling numbers.

They noted that as far as corn ethanol is concerned, using all of our corn, we use only a part and now we are driving up the price of corn, wheat and soybeans because we diverted land, and droughts drove up the price of rice and so now there is hunger around the world and we are partly to blame for that. They said that if you tuned up your car and put air in your tires, you could save as much gas as using all of our corn for ethanol.

Methanol that you might get from wood, biomass, and the huge interest now that I think is a bit overly optimistic is on cellulosic ethanol. I am an old dirt farmer. Let me just note something that I think is intuitive. I can't imagine that we would get a whole lot more energy from our wasteland that wasn't good enough to plant anything on than we could get from all of our corn and all of our soybeans which would produce, for corn, replace 2.4 percent of our gasoline, and for soybeans, 2.9 percent of our diesel. I can't imagine we are going to get a whole lot more than that from our wastelands that aren't good enough to grow anything on. If you want to mine those and rape them of their organic materials for the next couple of years, you might get a meaningful amount. But sustainably, at least to some measure, this year's weeds grow because last year's weeds died and are fertilizing them. Now we will get something from cellulosic ethanol.

There are two bubbles that have broken already. The first big bubble that was going to be our savior was hydrogen. Remember that one? I think people figured out that hydrogen is not an energy source; it is an energy carrier. You will always use more energy producing hydrogen than you get out of it.

Why hydrogen. Because if we have a fuel cell where we can burn it and use it at least twice as efficiently, and when you use hydrogen you get water and that is pretty clean. So it is a great candidate for a fuel cell. We are at least two decades away from a fuel cell.

The second bubble that broke is the corn ethanol bubble. I am predicting that the cellulosic ethanol bubble will break. We will get something from cellulosic ethanol, but it will not be the huge amounts people are predicting we might get.

Waste to energy, great idea. And there is a good plant here in Montgomery County, but what you are burning there is largely a waste stream, the result of profligate use of fossil fuels. For the moment it is a good idea; but long term in an energy-deficient world, you are not going to waste so much. Remember, I grew up during the Depression: Waste not, want not. That is certainly not our motto today when you look at our landfills.

Gas hydrates. I want to mention that because there is more potential energy there than all the other energy sources I have talked about. These are little, frozen modules on the bottom of the ocean. There are huge potential amounts of energy there. But let me note that there are huge potential amounts of energy in the tides. The moon lifts the whole ocean two or three feet. When I carry two 5-gallon buckets of water, they are heavy. The problem with that energy and the tides and the problem with the energy in the gas hydrates is that it is very scattered and diffuse. Energy to be useful must be concentrated. And we will get something out of all of those, but it will not be enormous amounts.

This chart looks at a very interesting reality, and that is we are very much like the young couple that had their grandparents die and left them a big inheritance and now they have established a lavish lifestyle where 85 percent of all of the money they spend comes from their inheritance and only 15 percent from their salary. And they look at the inheritance, and it is going to run out before they retire, and so obviously they have to do something. They have to spend less or make more. That is precisely where we are because 85 percent of all of the energy that we use comes from fossil fuels, coal, petroleum and natural gas; only 15 percent from renewables, a bit more than half of that from nuclear. Here are the renewables we saw on the other chart. This is 7 percent. So solar was 1 percent of 7 percent; so 0.07 percent. Big deal.

And I am a big fan of solar and it is growing at 30 percent a year, but when you use 21 million barrels of oil a day, that is an incredible amount of energy. It is a huge challenge to find alternatives that will produce that amount of energy.

The next chart shows us the U.S. electricity generated by fuel source, and notice some of this we can use in cars. In fact, we can use a lot of the coal. Natural gas, buses run on natural gas. If you had electric cars, you could do it with nuclear. And the others are much smaller. Hydro is 6 percent a year or so depending on how much rain we have.

The next chart shows electricity generation by renewables, and this blows up the renewables part of it. The wood, wind, waste, geothermal and the solar. This is 1 percent up here. The total amount we use is 100 times higher. So you see solar down there, it is just trifling. I think it will be huge in the future. The most aggressive country in the world for solar is Germany, and they have poor sunlight compared to the United States. But they recognize that they have to do something to transition.

The next chart, and I want to spend just a moment on this chart because the reality is this should have led people to understand we weren't going to get all we could want from corn. This bottom part, this is the amount of energy that goes into producing corn. Almost half is natural gas that is used to make nitrogen fertilizer. Before we learned how to do that, the only nitrogen fertilizer came from barnyard manure and guano. Guano is the droppings of birds and bats, and if we wait another 10–20,000 years, we will have some more. But that is gone now. It was a big industry doing that.

The amount of energy that goes into producing ethanol from fossil fuels is incredible. This just looks at the energy that goes into producing. Indeed, there are some who believe that we use more energy producing ethanol than we get out of ethanol. Our Department of Energy believes it is probably 80 percent, and the National Academy of Sciences use that number, too. Probably 80 percent of the energy that you get out of ethanol was put in there with fossil fuels.

I would like to put up the chart that we began our discussion of things that could be done, and I would like to say in my closing moments that I feel very exhilarated by this. There is no exhilaration like the exhilaration of meeting and overcoming a big challenge. This is a huge challenge. The American people are the most creative, innovative people in the world. If they really understood what we needed to do, they would do what the people of my generation did, and I am 82 years old. I was born in 1926. I lived through World War II. Everybody had a victory garden. We had Daylight Savings Time so you could work another hour in the victory garden. We didn't do that because somebody told us we had to, we did it because we knew we needed to do that.

I think the American people, properly challenged, if they really understood the challenge, I think the American people would rally, and I think we could once again become a major exporting country, not just exporting ideas to other people who then do the manufacturing. I want to do the manufacturing here and be a manufacturing and exporting country. We are the most creative, innovative society in the world.

Mr. Speaker, what we need is a program that has the total commitment of World War II. Everybody in America needs to be involved. We need to have the technology focus of putting a man on the moon, and we need to have the urgency of the Manhattan Project. We are capable of that. The American people are waiting for that.

The solutions that are now suggested to us are only partial solutions. I am kind of glad with my 10 kids and 16 grandkids and 2 great-grandkids that we didn't drill every place that we might have drilled. Now there is a little oil for them, and they will be involved in this transition.

So I hope, Mr. Speaker, with more knowledge of where we are, that the American people will rally to the challenge and the United States will be what it has been in the past, a leader in technology, and a major manufacturing and exporting country.

LEAVE OF ABSENCE

By unanimous consent, leave of absence was granted to:

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

Mr. JONES of North Carolina (at the request of Mr. BOEHNER) for today on account of business in the district.

Mr. TIAHRT (at the request of Mr. BOEHNER) for today on account of official business.

Mr. WELLER of Illinois (at the request of Mr. BOEHNER) for today on account of attending family business.

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.

Ms. KAPTUR, for 5 minutes, today.

Mr. DEFAZIO, for 5 minutes, today.

Mr. SCHIFF, for 5 minutes, today.

Mr. MCDERMOTT, for 5 minutes, today.

Mr. KAGEN, for 5 minutes, today.

Mr. HOLT, for 5 minutes, today.

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

Mr. MCCOTTER, for 5 minutes, today.

Mr. REICHERT, for 5 minutes, today.

Mr. POE, for 5 minutes, June 27.

Mr. JONES of North Carolina, for 5 minutes, June 27.

Mr. CAMPBELL of California, for 5 minutes, today.

Mr. SHIMKUS, for 5 minutes, today.