

on track to pay down all of our publicly held debt. And what is the Bush administration leaving behind?

Mr. MURPHY of Connecticut. Curiously, as we talked about here, a \$9 trillion debt owed mostly to foreign nations, a President that has racked up more publicly held foreign debt and privately held foreign debt than any other Presidents combined in the history of the Republic.

Ms. WASSERMAN SCHULTZ. It is really astonishing, the dramatic difference and the swings we have gone through in the last 8 years. Who would have thought that we could go through that type of rapid deterioration?

How about the economy? We are certainly not facing a strong economy right now. At the beginning of this administration, as President Clinton was leaving office, Mr. MURPHY, we had the strongest economy in three decades. We had 22 million jobs that had been created. We had a record surplus. We had a thriving economy by any definition. And now that we are wrapping up the Bush administration, what is this President leaving behind?

Mr. MURPHY of Connecticut. Well, we know he is leaving behind one of the weakest and one of the most fragile economies that we have seen in a very long time. Today we get reports from the Nation's largest retailers telling us that they still have not unburied themselves from the holiday malaise. We had a report recently from the service sector showing the service economy starting to bottom out. We have news yesterday from the Labor Department telling us that worker productivity continues to slow. We have an economy after 6, 7 years of the Bush administration's policy left over from 12 years of neglect by the Republican majority that is as weak as it has been in a very long time.

Mr. ALTMIRE. I want to talk about a few things that the President is leaving behind as he leaves office going into next year, and we look forward to working with him certainly throughout this year, \$400 billion in annual deficits, deficits as far as the eye can see, as Mr. MURPHY talked about, an exploding debt burden, a slowing economy; and this is something that I think really needs to be talked about because we had in January a net loss of 17,000 lost jobs. And there was a lot of talk in the administration about how, well, this was the first loss in 4 years in job growth in a month, which is true.

Now, any economist will tell you, anyone who studies these issues will tell you that because of the population growth in the country that works, we are experiencing in any given month, it takes between 100 and 150,000 new jobs being created just to keep pace with the increase in population growth in the country. So just to maintain, you have to have at minimum 100,000 new jobs. Well, many of the months that we are talking about going back 4 years, we have had much fewer jobs created per month than 100,000. And in fact,

this administration, if you look at the job growth that has taken place over the 7-plus years of this administration and pro rate it, this is the weakest record of job growth in any administration since the Hoover administration.

Mr. MURPHY of Connecticut. Did they have good job growth in the Hoover administration?

Mr. ALTMIRE. Right. And Mr. MURPHY held up his chart with all the Presidents on it and talked about big spenders and fiscally irresponsible people, and I think Mr. Hoover may not be remembered in those categories, but he is certainly not going to be remembered as a job creator, let's put it that way. So for this administration to have the worst record of job creation since the Hoover administration, I think really spells out the failure of these economic policies.

Ms. WASSERMAN SCHULTZ. Absolutely. And as we begin to wrap up, getting back to the lecture that you referred to earlier, Mr. ALTMIRE, that we received from President Bush last week, the matter of transparency is incredibly important. This is a President who talked about how we need to make sure that we disclose earmarks, which we took the lead on when we became the majority and made sure that we put our names next to the earmarks that we get in the appropriations act, and we are the ones that made sure that there was full disclosure and adopted the ethics package that was the most comprehensive in American history.

And with this President's proposed budget this week, let's outline, and we are going to have some of these charts next week that are blown up so that people watching can see, but let's talk about what was left out of the budget, because he talked very nicely about transparency, and make sure that people really understand clearly what we are doing here. He left out of his budget any war costs, any costs for the war in Iraq and Afghanistan beyond the first half of this year. He also left out AMT reform beyond 2008. So all of the millions and millions of taxpayers that we helped avoid be subject to that AMT tax when we passed that legislation at the end of last year, there is no fix for them. And President Bush doesn't even count them as that going forward, which we know we are obviously going to have to do.

It is fake. It is just, again, bizarre world. We can just make stuff up in the budget and hope that people believe that it is true. This was a fairy tale document that he gave us on Monday. The good news is that the Congress actually writes the budget when push comes to shove.

Then in terms of any spending policy details beyond fiscal year 2009, there was nothing detailed in this President's budget. Let's just give you, as I wrap up and then turn it over to the two of you to bring us home, let's just go through last year. In fiscal year 2008, President Bush requested \$193 bil-

lion, Mr. MURPHY, for the war in Iraq. And in the fiscal year 2009 budget he just proposed to us on Monday, he asked for \$70 billion. Good news. We are only going to spend \$70 billion on the war in Iraq and Afghanistan this year.

Mr. MURPHY of Connecticut. We get some discounts this year.

Ms. WASSERMAN SCHULTZ. Wow, that is so exciting. Again, we have to make sure that we are honest, transparent, and forthcoming with the American people. We can't fake it. We can't gloss it over. We have to make sure that we give them the straightforward facts and be honest with them in the budget document and in everything that we do.

Mr. MURPHY, why don't you bring us home. It is a privilege to be here again with you and Mr. ALTMIRE, and we miss our colleagues, Mr. RYAN and Mr. MEEK, tonight; but the 30-Something Working Group is always here to talk about the issues that are important to the American people, but particularly to our generation of Americans who are going to inherit the results of the decisions that we make here.

Mr. MURPHY of Connecticut. Ms. WASSERMAN SCHULTZ, just to leave on some good news, I think the passage with the Republican and Democratic votes of the economic stimulus package shows that this Democratic Congress has the potential to reach across the aisle and push back on a lot of these policies that we have been talking about today. This is bad news, the President's budget he submitted to us. It is not a good budget for people, for families, or for fiscal discipline.

But the good news is that we have shown a record here of being able to work together, Republicans and Democrats, to be able to push back.

Ms. WASSERMAN SCHULTZ, if you want to get in touch with us, you can e-mail us at 30somethingdems@mail.house.gov or go to www.speaker.gov to visit our Web site.

Ms. WASSERMAN SCHULTZ. Thank you, Mr. MURPHY.

Mr. Speaker, we appreciate the opportunity that has been given to us by the Speaker.

PEAK OIL

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

(Mr. BARTLETT of Maryland asked and was given permission to revise and extend his remarks.)

Mr. BARTLETT of Maryland. Mr. Speaker, our government has paid for four studies looking at the world energy situation, particularly at oil. Two of those studies were reported in 2005, and two of them were reported in 2007. The two in 2005 were the SAIC report known as the "Hirsch Report," and then later in the year there was a report by the Army Corps of Engineers,

and then in 2007 there were two reports, one of them by the Government Accountability Office and the second one by the National Petroleum Council.

They all said essentially the same thing in different words. I have here some quotes from the first one of these, and the largest one. Remember, this is now in 2005, and this is from the Hirsch Report, "Peaking of World Oil Production: Impacts, Mitigation, & Risk Management" was the title of their work.

World oil peaking is going to happen. By peaking, we mean that time at which the world reaches its maximum capacity for producing oil. After that time, regardless of the demand for oil and regardless of the desire to produce more oil, the world will not have the ability to ramp up in oil production to produce more oil.

World production of conventional oil will reach a maximum and decline thereafter. That maximum is called the peak. A number of confident forecasters project peaking within a decade. Others contend it will occur later. Prediction of the peaking is extremely difficult because of geological complexities, measurement problems, pricing variations, demand elasticity and political influences. Peaking will happen, but the timing is uncertain. Oil peaking presents a unique challenge.

And then they make this statement: the world has never faced a problem like this. There is no precedent in history that we can use to judge what the impact of this peaking will be. 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 second chart has some additional quotes from this same report. The peaking of world oil production presents the U.S. and the world with an unprecedented risk-management problem. As peaking is approached, liquid fuel prices and price volatility will increase dramatically. A couple of weeks ago, oil was \$100 a barrel. And without timely mitigation, and there has been essentially none, without timely mitigation, the economic, social, and political costs will be unprecedented, unprecedented, meaning nothing in the past can we use as a guide to what the consequences will be.

Viable mitigation options exist on both the supply and demand sides. But to have substantial impact, they must be initiated more than a decade in advance of peaking.

Now, as we will see in a chart or two, it is very probable that peaking has already occurred. So, obviously, we can't prepare for it a decade ahead. Dealing with world oil production, peaking will be extremely complex, involve literally trillions of dollars and require many years of intense effort. This is from the SAIC, a very prestigious organization, a report paid for by our government.

□ 2130

The next chart is a graph of oil production in the United States. To see the impact of this we have to go back more than half a century to 1956, the 8th day of March, in San Antonio, Texas, when M. King Hubbert gave a speech to a group of oil engineers and executives which I think will shortly be recognized as the most important speech given in the last century.

What M. King Hubbert told that group was that in just 14 years from 1956, that is, 1970, the United States would reach its maximum oil production, and after that, no matter what it did, the United States would not be able to increase its oil production.

At that time, the United States, that means in 1956, the United States was king of oil, I believe producing more oil, using more oil and shipping more oil than any other country in the world. Nobody believed M. King Hubbert. He was derided. But when in 1970, right on schedule, we peaked in oil production, he became a legend in his own day. He died just a few years ago.

What he predicted was oil production in the Lower 48, that is, Texas and the rest of the United States, that is the gray and blue part of the graph here, we found a lot of oil in Alaska and we are able to get some natural gas liquids, and when you add those two together, you see there was a little blip in the slide down the other side of Hubbert's Peak. But in spite of feverishly drilling, we have drilled more oil wells in our country than all the rest of the world put together. We have about four times as many oil wells in the Gulf of Mexico, about 4,000, about four times as many in the Gulf of Mexico as in all of Saudi Arabia, for instance. In spite of finding oil in Alaska and in spite of finding oil in the Gulf of Mexico, the yellow wedge there, we are now producing about half the oil we did in 1970.

The next chart shows a quote, a very recent quote from the Shell Oil Company, January 22. "By the end of 2100, the world's energy system will be radically different from today's."

It will indeed.

"The world's current predicament limits our maneuvering room. We are experiencing a step change in the growth rate of energy demand." China and India and the Third World are coming on line to industrialize.

Shell estimates that after 2015, that is just around the corner, "after 2015, supplies of easy-to-access oil and gas will no longer keep up with demand." A very significant statement. "As a result, society has no choice but to add other sources of energy."

The next chart is also some very recent data. Now, remember, M. King Hubbert made his prediction in 1956. Remember that it was in 2005 that SAIC, the Hirsch Report, made their predictions.

There are two agencies in the country that do a very good job of tracking

the production and consumption of oil, and, of course, since we use all we produce, those lines are the same. We are not storing it up in large quantities anywhere, significant quantities. One of these two agencies is the International Energy Agency, the IEA. You see them referenced in the news relative to Iran. They are the international group that is watching the development of nuclear energy activity in Iran.

Then there is our own EIA, Energy Information Agency, an arm of our Department of Energy. They do a very good job of tracking the use of oil. Here are their curves. The red curve is the IEA and the green curve is the EIA. You notice they are very similar. They should be, because they are looking at the same data. Notice for about the last 30 months, both of those have oil production essentially plateauing.

The same gentleman that predicted that the United States would reach its maximum oil production in 1970, that was M. King Hubbert, predicted that the world would be reaching its maximum production about now. It would appear, it would appear from Shell's statement and would appear from the graph here from these two organizations that are tracking the production and consumption of oil, that indeed it looks like we are plateauing, which would mean that we very probably have reached a peak.

Notice what has happened with price. There is a lot of volatility, which was predicted by the Hirsch Report. And notice what has happened in the last few months; up, up, up. It at one time touched \$100 a barrel. It now is down just under \$90 a barrel. When I first came to the floor about 2½ years ago to talk about oil, it was about \$40 a barrel. Look what has happened to the price of oil since then.

There are three groups that have common cause in a rational solution to this problem and two other problems. The first of these three groups are those that are concerned about global warming and climate change. What they would do to ameliorate this problem is to shift from the use of fossil fuels, which are releasing CO₂ which was sequestered a very long time ago, now present in oil and gas and coal, they would replace that with renewable sources where you are simply recycling the CO₂. The trees grow and they use CO₂ to grow, and then when they are mature, you cut them and you burn them and oxygen is consumed in burning them and the CO₂ is released, so there is no net CO₂ increase when you do that.

A second group that has common cause in wanting to replace our fossil fuels with renewables are those who are concerned about our national security. The President noted that we were far too dependant on foreign oil. We have only 2 percent of the known reserves of oil in the world. We use about 25 percent of the world's oil. We import almost two-thirds of what we use. The

obvious solution to that problem is to get our energy from somewhere else so that we don't have to import this oil, and the rational place to get that is from renewables.

Then there is the group of people that I am kind of representing tonight when I talk about this aspect of energy, and those are the people who believe that there is a finite amount of oil in the world and that at some point in time the world will reach that maximum capacity to produce oil. That happened in the United States, as that chart showed, in 1970. After that, no matter what we do, reasonably, no matter what we do, the production of oil will fall steadily off.

Now, we aren't running out of oil. We are not falling off a cliff. What we are running out of is our ability to produce oil as fast as we would like to use it. That point is called peak oil. What the peak oil concerned people would like to do is to move to some alternative which is a substitute for oil.

So we have these three groups with very different agendas, very different premises, but all three of them have exactly the same solution to their problem; climate change and global warming. What you want to do is stop releasing this sequestered CO₂ in the fossil fuels and use renewables.

What you want to do if you are concerned about our national security and the fact we are so dependent on foreign oil is to find a substitute for oil so we don't have to buy that foreign oil.

If you are concerned about peak oil, that it just isn't going to be there in the quantities you would like to use it in the future, obviously you have got to find another source of energy. So these three groups have common cause.

I am joined this evening by one of my colleagues that is a real expert in the first one of these I mentioned, WAYNE GILCHREST, WAYNE, thank you very much for joining us. WAYNE is perhaps the best authority in the Congress on climate change or global warming, and different people talk about this problem in different ways.

WAYNE, thanks for joining us.

Mr. GILCHREST. Thank you very much, Mr. BARTLETT, for letting me share your hour here this evening. I think you are doing an extraordinary service, not only to we Members of Congress, but to the public at large, to understand the nature of the energy crisis and how it is inextricably linked with global warming.

If we take a look at both of these issues, especially the issues that Mr. BARTLETT raises about energy security and what is in the future for our energy needs, which is the basis for a prosperous economy, there are many changes coming based pretty much on these two issues: Energy and climate change. As far as energy security and the economic viability of this country, environmental issues and ethical issues for future generations, these two issues are inextricably linked. They are issues for the most part that are still mis-

understood by the public, and they are issues that are not in the headlines every day for the news media and elected officials to do their own research, like Mr. BARTLETT has done, and voice this issue to the public so that they become much more educated as a result of it.

If these issues are handled appropriately, and that means if we the government and the public at large become informed about these issues, they can then become much more competent in dealing with these issues and there will be a bright future. If these issues of energy and climate change are not handled appropriately, if the focus is on the wrong priority, then energy security and climate security for this country will be severely jeopardized.

Mr. BARTLETT talks about peak oil. The United States peaked in 1970 and the world at large is about ready to peak. We looked at in just the last couple of years more than a doubling of the cost for a barrel of oil.

The issue is similar in global warming, which is called today climate change. Why is there a difference in the verbiage on discussing global warming? The difference in verbiage is that global warming will cause the climate to change, disruptions in the climate.

Is there global warming? Well, there is a 90 percent certainty among the American scientists and international scientists that global warming is linked to human activity. That means the burning of fossil fuel.

Let's take a quick look at one example as to why we link global warming to human activity. We can go scientifically back 20,000 years at the height of the last ice age and we can test through a number of different means, especially ice cores, 20,000 years ago.

I want to make one other comment also. If you look over the past 20,000 years, you will see a fluctuation, a variation in climate change, and you will also see a fluctuation in variation of temperature. The temperature corresponds to the amount of greenhouse gasses in the atmosphere. The more greenhouse gasses over the eons of time, the warmer the climate.

If we go back 20,000 years to the height of the last ice age, carbon dioxide, which is the chief greenhouse gas, one of the chief greenhouse gasses, there was 180 parts per million of CO₂ in the atmosphere. As a result of that small amount of CO₂, we were in an ice age. It was very cold.

As climate variability changes over the course of time, we come to 1890 when we could evaluate how much CO₂ was in the atmosphere. 1890, a little over 100 years ago, there was 280 parts per million of CO₂ in the atmosphere. It took basically nearly 20,000 years to go from 180 parts per million of CO₂ to 280 parts per million, an increase of 100 parts per million over 20,000 years.

Well, what were we really involved in in 1890? The industrial revolution, the burning of coal, the early stages of the age of oil.

It is 2008. There are 380 parts per million of CO₂ in the atmosphere. What does that mean? That means the natural cycle took 20,000 years to increase CO₂ by 100 parts per million, and during the industrial age, it took just 100 years to increase CO₂ by 100 parts per million. The correspondence to warming is linked to the amount of greenhouse gasses. So we are warming.

There are many, many other examples of this; receding glaciers worldwide, shrinking ice sheets on Greenland, temperature of the air and temperature of the water.

□ 2145

Another problem is the acidification of the oceans. The point here is that we are facing enormous changes in a very short period of time. Will we be ready? We are facing peak oil.

In some sense, in maybe less than 100 years, we will be at the end of the Asian oil, and what will we replace this enormous source of energy with? We are facing enormous changes in the next few decades with the climate changing as a result of human activity.

Let's take just a brief look at some of the issues of a changing climate. What will it do to agriculture in the United States with the drought and rain cycles changing, and we are already beginning to see that. What will it do to our national forests and forests globally with the infiltration of pests that weren't there before? We see that now in the northern regions of Alaska and wild fires; fresh water, quantity and quality with changing rain cycles; coastal zones, flooding areas, more hurricanes. We have already seen more tornadoes.

What about sea level rise? This is an important aspect of global warming. If sea level rose just a couple of feet, and there is a good chance it will rise more, what will happen to New York City or Miami or New Orleans or a town close to me called Chestertown? How will the eco-systems change? What will diseases be like in areas that are a lot warmer?

We only need now to look at some of the areas of central Africa or Central America or South America. Ocean acidification is an issue with the kinds of marine life that will be in the world's oceans. Ocean acidification has a direct impact on the spawning activities of all the sea mammals and the other marine creatures in the ocean.

Global warming, 90 percent assurance from the world's scientists that human activity is causing it to change. It is changing the face of our planet, the link with the other issue of energy. The lack of it will change dramatically the face of our planet if we don't select the right priorities as soon as we can.

What are some of the questions we ask about this scene, this relatively confusing scene of an energy crisis with nothing right now to replace it, and a global warming climate-change crisis, some of the confusing issues. Are we in just another cycle of high energy costs and different climate? We

know that climate cycles change, and we know that energy costs change over a period of time.

Are we not just in another cycle? Well, this time we are not just in another cycle. But if you want to say we are in a cycle, this cycle is being dramatically affected by human activity.

In the energy crisis arena, we are burning more oil than we have in reserves. In the climate crisis arena, we are burning fossil fuel, infusing greenhouse gasses in the atmosphere in the last few decades that it took millions of years for the natural processes to lock up.

Now, one last comment, and then I want to go back to my good friend from Maryland (Mr. BARTLETT) who will go over some of the issues that can ameliorate the problem with the climate crisis, the problem with the energy crisis. Both these issues, energy crisis and climate change, are going to take something in the order of magnitude that we dealt with in the Manhattan Project and sending a man on the Moon.

This is an economy-wide issue. The economy issue and the global warming issue are economy-wide, and they are international in scope. One of the suggestions for the global warming issue is an economy-wide cap and trade program, similar to what we dealt with from sulfur dioxide and acid rain from power companies a little more than 10 years ago, which has been very successful, a cap and trade program, economy-wide, where you actually trade carbon in a similar way that you would trade stock on the stock market.

You place a cap on the emission of CO₂ and other greenhouse gasses. You incrementally implement this over a period of 40 years and gradually, by the year 2050, you can reduce greenhouse gas emissions by 70 percent below 1990 levels by finding alternatives to fossil fuel.

What is at the bottom of the bottomless pit? We used to think it was oil, that we could burn it forever and it wouldn't hurt the environment.

But we now know it's not oil. What needs to be at the bottom of the bottomless pit is ingenuity, good old-fashioned American ingenuity.

I want to thank the gentleman from Maryland, my good friend Mr. BARTLETT for recognizing me for this time.

Mr. BARTLETT of Maryland. Thank you very much for joining us in this discussion of energy. You know, Congressman GILCHREST, some might say, gee, won't the global warming problem be solved if, in fact, we were at peak oil? It would be nice if that would solve the problem, but it won't.

You see, we have now used about 1 trillion barrels of oil. That's about half of the oil that we ultimately will use. There is about another 1 trillion barrels of oil to use. So as we go through this last half of the age of oil, we will release as much CO₂ from burning that oil and gas and coal as we have released now in the first half of the age of oil.

So the CO₂ contributed during this industrial age and burning the fossil fuels will double. It will be twice as big at the end of this time.

I have here an interesting graph, a little cartoon here. There is a huge SUV there and it's labeled "demand," and there is a gas pump there and it's labeled "supply," and it's little, and the motor is saying, Gee, just why is gas so expensive? Well, that's the reason, of course: There is a big demand and a little supply. When you have that, that makes prices go up.

The next chart is a quote from the second of these studies, which your government paid for and has pretty much been ignoring. This is the Corps of Engineers: "Oil is the most important form of energy in the world today." The President recognized that in his State of the Union a year or so ago.

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

Oil is, indeed, an incredible energy source. One barrel of oil, and when I first heard this statistic, I said, gee, that can't be true, one barrel of oil has the equivalent of 25,000 man-hours of labor, that's 12 people working all year. I thought, gee, can that be true, just 1 barrel of oil, 42 gallons of oil.

Then I thought how far that gallon of gasoline, still at \$3, by the way, cheaper than water in the grocery store, how far that gallon of gasoline carries my Prius. I drive a Prius and we get just a little under 50 miles per gallon with it. I could pull my Prius 50 miles, but how long would it take me to pull my Prius 50 miles?

When I looked at that and I figured, gee, maybe it's true that a barrel of oil has the energy equivalent of 12 men working all year.

The incredibly high quality of life that almost all the world enjoys today is the result of our ability to tap into the stored energy in fossil fuels.

The next chart is a quote from Admiral Hyman Rickover. He gave a speech, it will be 51 years ago the 14th day of this May, to a group of physicians in St. Paul, Minnesota. These are some excerpts from his speech. He really was prophetic. He is the father, of course, of our nuclear submarine.

"There is nothing man can do to rebuild exhausted fossil fuel reserves. They were created by solar energy" he says, 500 million years ago "and took aeons to grow to their present volume. In the face of the basic fact that fossil fuel reserves are finite," and they are, "the exact length these reserves will last is important in one respect. The longer they last, the more time we have to invent ways to live off renewable or substitute energy resource and to adjust our economy to the vast

changes which we can expect from such a shift."

Fifty-one years ago we were only then about 100 years into the age of oil. He had no idea how long the age of oil will last. Now we know pretty much how long the age of oil will last.

He said that how long it lasted was important in only one respect, that the longer it lasted, the more time did we have to plan for the transition to renewables, which ultimately we will do. Geology will ensure that eventually we transition to renewable fuels.

"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."

I thought often of that very sage counsel. You know, it doesn't even come close to our attitude towards oil. With 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. We have been pumping oil as fast as we could all over the world eager to find new places from which to pump oil.

We just found some more oil in the Gulf of Mexico under 7,000 feet of water, 30,000 feet of rock. We aren't starting to exploit that yet because oil at \$100 a barrel or \$88 a barrel apparently is not high enough.

"A selfish and irresponsible parent will squander it in riotous living and care not one whit how his offspring will fare."

Boy, that is quite precisely what we have done with this incredible wealth under the ground. When we found that wealth 150 years ago, we should have stopped and said, gee, what can we do with this to do the most good for the most people for the longest time? Rather than doing that, what we did was to act as if oil were forever, that there would never be an end of oil, just keep drilling, just keep pumping, and it will always be there.

The next chart shows the industrial age and the transition from wood, the brown line here to coal, and then to gas and oil. Boy, look what happened. Look at the slope of that line.

Now, if I put world population on this, it would be hardly indistinguishable from that energy curve, because the world's population just shot up. It was less than 1 billion people for a very long time. Now it's approaching 7 billion people, and that increase in population follows exactly this dramatic increase in the release of energy from the use of gas and oil.

A couple of interesting things about this chart, notice where that line would be if it kept on going up, way off the top of the chart by this time. That dip there, as you notice from the abscissa, occurred in the 1970s, was the Arab oil spike price spots and the worldwide recession that resulted from that. There was demand destruction. We didn't need as much oil because we were in a recession, a depression in many places.

The production went down and, boy, did the price go down. It dropped, do you remember, about \$10 a barrel. All of those activities, which were looking at producing substitutes, they just all died because you can't compete with oil at \$10 a barrel.

We now are very much more efficient than we were at this time. The slope of this curve, by the way, is really interesting. That's during the Carter years. During the Carter years, every decade we used as much oil as had been used in all of previous history. That's a stunning statistic.

What that means is that when you have used half of your oil, how much will remain, 10 years. We are now very much more efficient than we were then. We are able to live better than we were then, using less energy because your air conditioner is probably three times as efficient; so is your refrigerator. Your car is more efficient. If they would keep them small, they would get better mileage even.

The next chart is really an interesting one, and looking at this chart causes you to do a lot of reflection. This is "The World According to Oil," and it depicts two things. One is who has the oil. And the other one is who uses the oil. The yellow and the green there are the people who are using the oil, and the blues and the grays are the people who have the oil.

□ 2200

You notice this is what the world's map would look like if the size of the country was relative to the amount of oil it had in reserve. Saudi Arabia is huge. It represents about 22 percent, almost a fourth of all of the oil reserves in all of the world.

Little Kuwait here, a tiny country, Saddam Hussein thought it looked like an errant province of Iraq and he went to reclaim it a decade or so ago, but little Kuwait has as much oil as Iraq. There is Iran. United Arab Emirates, you can hardly see them on the map. Look at Venezuela. It dwarfs us.

Here we are with 2 percent of the reserves. We are yellow because we use 25 percent of all of the world's oil. Notice that Venezuela is several times larger than we are.

Russia is pretty big, what three, four times bigger than we are, but they aren't using anywhere near as much oil as we are per capita so they are a big exporter and they have lots of money.

What is striking on this map is the size of China and India. Notice them here. Together they don't have as much oil as the United States, but together they have 2.3 billion people. With booming economies, China growing 11.4 percent, that was the statistic I saw for the last quarter.

Mentioning China, the next chart looks at what China is doing around the world. China is going around the world and buying oil wherever they can. And they are not just buying oil; they are buying goodwill. Would you like a soccer stadium, maybe a hos-

pital, or roads is what you need in your country. This symbol here is for Unocal. They almost bought an oil company in our country a few years ago.

Why is China doing that? In today's world it doesn't make one bit of difference who owns the oil. From that previous chart when you saw those huge reserves of oil in north Africa and the Middle East, those people are using very little oil. He who comes with the dollars, let's hope it stays dollars and not your euros or we'll be in a world of hurt, he who comes with the dollars gets the oil. It doesn't make any difference in today's world who owns the oil, so why is China buying oil?

China has 900 million people in what they call rural areas. They may be in rural areas, but many of them have television and they are seeing the results of industrialization and they are demanding for themselves the increased quality of life that comes from the industrialization that they see in other countries in the world. So China has a problem in providing adequate industrialization to meet the emotional needs of these people so, and this is a judgment call on my part, so they don't become a problem and revolt.

I think the day may come when China may tell the rest of the world, Gee, guy, we're sorry, this is our oil and we have 2.3 billion people and we can't share it with you. To make that a reality, they will need a big navy. They will need a big navy to hold open the sea lanes and get that oil to their country. They are growing a navy very rapidly. This is open source literature. You can do a Google search for "China" and "navy" and you can see how aggressively they are growing their navy.

What China is doing here resulted in a statement in 2006 by Condoleezza Rice which is in our next chart here. "We do have to do something about the energy problem. I can tell you that nothing has taken me aback more as Secretary of State than the way that the politics of energy is, I will use the word warping diplomacy around the world. We have simply got to do something about the warping now of the diplomatic effort by the all-out rush for energy supply."

The next chart presents some numbers that I went through a bit ago. These numbers, by the way, prompted about 3 years ago now, 30 of our prominent Americans, Boyden Gray, and McFarland and Jim Woolsey and 27 others, among them retired four star admirals and generals, they wrote a letter to the President saying: Mr. President, the fact that we have only 2 percent of the world's oil reserve and we use 25 percent and we import almost two-thirds of what we use is a totally unacceptable national security risk. We need to do something about it. You may remember the President mentioned this in one of his State of the Union speeches. Indeed we do have to do something about that.

We represent a bit less than 5 percent of the world's population. We are one person in 22 in the world, and we use a fourth of the world's oil. That statistic is not lost on the rest of the world, by the way. They are noting that.

With only 2 percent of the world's oil reserves, we are pumping 8 percent of the world's oil. What does that mean? Very simply, it means we are pumping our oil four times faster than the rest of the world, which means that our supplies are going to run down faster than the rest of the world.

We have 630,000 producing oil wells in our country. That is more than all of the rest of the world put together, so we are really good at pumping oil.

The next chart is really a very important chart. If you were going to talk about energy, oil, and the world's future, and you had only one chart, this would be the one that you would use. This comes from the oil chart. You can do a Google search for "oil charts" and you can find this and a lot more information.

Peak oil, the growing gap. The bars here represent when we discovered oil. Boy, it started way back in World War II, back in the 1940s. Then we discovered a whole lot in the 1950s, a whole bunch, and a lot of oil in the seventies. Oil in the eighties, and look at what has happened. Down, down, down, down. And that is in spite of ever-better techniques for discovering oil, computer modeling and 3D seismic, and it is in spite of an ever-greater effort in going out and drilling new wells.

The solid black line here represents the amount of oil which we are producing and using. We use everything we produce, so it is the same line. Notice again up to the 1970s what has happened. If that line kept going up at that rate, we would be off the top of the chart here. But the Arab price oil spikes, at this point produced a worldwide recession that reduced the demand for oil, and then we became very much more efficient. Notice the low slope of this line compared to this one. Maybe that was a wake-up call that we needed, because if we hadn't had that, we would be in even more trouble today because we wouldn't have invested in those efficiencies.

But notice that since about 1980, we have been using more oil than we produce by this amount. So we have been dipping in reserves we had.

What will the future look like? One thing is certain: You cannot pump oil you have not found. So you can make your own judgment as to how much more oil we will find. Most of the world's experts believe we have probably found 95 percent of all of the conventionally recovered oil that we will ever find.

The light shaded area here represents the future, and they are showing peaking at about 2010 and downhill after that.

This area tails out until it comes down to zero, which will be another 150 years from now, because that is about how long we have been in the age of oil.

The difference between the amount you discover and the amount you are using has to be filled in by the reserves you have here. Now, you can make that future look a little different by enhanced oil recovery and going out and pumping live steam and pushing CO₂ down there to push the oil out, but if you do that, you will simply move this peak out a little, and then you will kind of fall off the cliff because, again, you can't pump what you haven't found.

The next chart is an interesting one. We show again here Hubbert's peak and the production of oil in our country. The yellow symbols here are what M. King Hubbert predicted for the lower 48. The green is what actually happened. This is a really interesting chart. It was produced by CERA, Cambridge Energy Research Associates. They produced this chart in an effort to convince you that you shouldn't have any confidence in M. King Hubbert's predictions because he really got it wrong. Maybe to a statistician they might reach a conclusion that he got it wrong, but I think to the average layman this green curve and those yellow triangles are not all that different. He seemed to get it pretty right to me.

The red here is the additional oil that we found in the Gulf of Mexico and in Alaska. M. King Hubbert's prediction was just for the lower 48. And by the way, we are pumping 25 percent of our oil through that four-foot pipeline. I have been up to Deadhorse where it begins. Even with that, we had just a blip on the slide down the other side of Hubbert's peak.

The next chart is interesting. It is another one from the Cambridge Energy Research Associates, CERA. There are only two major entities that I know of in the world today that will claim that peaking of oil is not either present or imminent. One of those is ExxonMobil. The other oil company, I started with a quote from Shell saying we are probably there, are on board with the peak oil concept, and CERA, Cambridge Energy Research Associates.

I mentioned that we have discovered about 2 trillion barrels of oil. Here they have 1.9 trillion. That is pretty close to 2. If that is the amount of oil available, which is what we showed on the previous chart, if you add up all on the bars on the previous chart, they will come to about 2 trillion, and we have now pumped about half of that. We have the other half to pump. If that is all of the oil we have, they now show peaking here at about now, right? About 2010, roughly now they show peaking.

They are presuming that we are going to find another trillion barrels of oil, that we are going to find as much oil as all of the oil that we used in the 150 years since we started using oil. If you believe we are going to find that much more oil, then you push the peak out to about 2035. That's just the take after tomorrow really, isn't it?

They are also projecting that we may find some unconventional oil, like we will be able to exploit a lot of oil from the tar sands and the oil shales. There are incredible amounts of potential oil there. The problem is can we really get it out in any timely fashion. We use 21 million barrels of oil a day in our country. The world uses 84 million barrels of oil a day. Try to get your mind around that, 21 million barrels of oil a day, each one of them with the energy equivalent of 12 people working all year. Wow, no wonder we live such great, high-quality lives.

The next chart shows a schematic. By the way, you can make this peak look sharp by compressing the abscissa and expanding the ordinate. But this is 2 percent growth. And 2 percent growth is small. Our stock market doesn't like 2 percent. If it is only 2 percent, they think that the sky is going to fall and stocks drop.

But 2 percent growth doubles in 35 years. It is 4 times bigger in 70 years. It is 8 times bigger in 105 years. It is 16 times bigger in 140 years.

Albert Einstein said that the most powerful force in the universe was the power of compound interest when he was asked: Gee, Dr. Einstein, after the discovery of nuclear energy, what is the next big force in the universe? That was his answer: It is the power of compound interest.

I believe we are about here, just about at peaking. This is where we would like to be in 35 years, two times higher than we are now, and we have a huge gap to fill. Most people are looking at how can you fill that gap.

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I don't think that there's even a prayer that we can come close to filling that gap. I think we'll be more than lucky if we can produce enough energy from alternative sources to fill in this area, if we simply have a plateau in production of oil.

The next chart is the one from our Energy Information Agency, and it's an interesting chart. The USGS has estimated the amount of reserves by doing a lot of computer modeling. And of course, as you know, in computer modeling, the quality of what you get out is dependent on the quality of information you put into your model.

And they take the mean of what they get from this modeling, and they say that that's the 50 percent average, "F" for frequency. Somehow that got translated to "P" when it went from the USGS report until it appears now in the Energy Information Agency report. And so now they're dealing with probabilities. And they make the bizarre statement that something which is 50 percent probable is more probable than something which is 95 percent probable.

And I'm going to spend just a moment on this. They have here, they did this projection back here, what, about 1995 or so. And they have four different curves there. One is the 95 percent

probability; that's the yellow one. The green one is the mean, which they say is the most probable, 50 percent probability; and the blue is the 5 percent probability.

Well, these probabilities are kind of like the picture on the weather channel of where the hurricane is going. Tomorrow you know pretty precisely where it's going to be. A week from now you have some uncertainty, so they have a big funnel out there.

So if they are going to do this, there should be another green line down here and another blue line down here. You don't have the foggiest notion hardly what it's going to be if you have only a 5 percent probability.

But notice the actual data points, which are in red here. By the way, these are discoveries, and this is that big peak back, you know, in the 1950s, and this is the big peak up here. This is kind of rounding out those bar graphs that we had in the previous chart. Notice the actual data points have been following what you would expect them to follow, the 95 percent of probability.

The next chart is one from the Corps of Engineers study again, and they quote Jean Laherrare, who is a French expert in this area. And he says the USGS estimate implies a fivefold increase in discovery rate and reserve addition, for which no evidence is presented. Such an improvement in performance is, in fact, utterly implausible, given the great technological achievements over the industry over the past 20 years, the worldwide search and the deliberate effort to find the largest remaining prospects. Indeed, I think it is most implausible that that's going to happen.

And the next chart, again, this is from the "Hirsch Report." And then even if that did happen, the real question is, so what? What if we found as much more oil as all the oil that yet remains to be pumped? And that's what they're assuming here. This is about 2 trillion barrels. They're assuming we're going to find another trillion barrels, and that's what this red curve is. And you see, it peaks in about 2016. So it pushes that peak out only about a decade. That's the power of compound growth. So even if we found as much more oil as all the oil that yet remains to be pumped in the world, according to this chart it would push it out only to 2016.

Now, you can push it out even further if you use enhanced oil recovery, but you can't pump what you don't have, so then you fall off a cliff. That's not what you want for your children and your grandchildren, I think.

The next chart shows a number of experts and when they have predicted it would peak, and you see most of them, some of them thought it would be from here way out to 2100. But most of them have it, it could start or would start fairly quickly.

I have one more chart, and then I've got to close very quickly because time is running out. This chart shows quality of life and how good you feel about

your station in life compared to how much energy you use. How good you feel about life, how much energy you use: the United States out here using more energy than anybody else; 24 countries use less energy than we and feel better about their quality of life than we.

Now, my wife tells me I shouldn't be talking about these things because don't I remember that in ancient Greece they killed the messenger that brought bad news. I tell her this is a good-news story. The sooner we start, the easier the trip will be. I'm really exhilarated by this. There's no exhilaration like the exhilaration of meeting and overcoming a big challenge. This is a huge challenge. We have the most innovative, creative society in the world. Properly informed and properly motivated, I think we're equal to the challenge. I see this as a very challenging fun future, where we really have something we can all pull together to accomplish.

I hope we'll be back here next week, and at that time I want to spend most of the time talking about what are the potential replacements for oil, what are the potentials, and which are the most promising, and what do we need to do.

LEAVE OF ABSENCE

By unanimous consent, leave of absence was granted to:

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

Mr. PETRI (at the request of Mr. BOEHNER) for today until noon on account of traveling delays.

Mr. RYAN of Wisconsin (at the request of Mr. BOEHNER) for today until 12:05 p.m. on account of traveling delays.

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

Ms. GIFFORDS, for 5 minutes, today.

Ms. SHEA-PORTER, for 5 minutes, today.

Ms. WOOLSEY, for 5 minutes, today.

Ms. LEE, for 5 minutes, today.

Mr. YARMUTH, for 5 minutes, today.

Mr. DEFAZIO, for 5 minutes, today.

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

Mr. POE, for 5 minutes, February 14.

Mr. JONES of North Carolina, for 5 minutes, February 14.

Mr. FLAKE, for 5 minutes, today.

SENATE BILL REFERRED

A bill of the Senate of the following title was taken from the Speaker's

table and, under the rule, referred as follows:

S. 2457. An act to provide for extensions of leases of certain land by Mashantucket Pequot (Western) Tribe; to the Committee on Natural Resources.

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. 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.

ADJOURNMENT

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

The motion was agreed to; accordingly (at 10 o'clock and 20 minutes p.m.), under its previous order, the House adjourned until tomorrow, Friday, February 8, 2008, at 10:30 a.m.

EXECUTIVE COMMUNICATIONS, ETC.

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

5257. A letter from the Under Secretary for Acquisition, Technology and Logistics, Department of Defense, transmitting a comprehensive review of the C-5 Reliability Enhancement and Re-Engining Program (RERP), pursuant to 10 U.S.C. 2433; to the Committee on Armed Services.

5258. A letter from the Under Secretary for Acquisition, Technology and Logistics, Department of Defense, transmitting a letter regarding the Department's report on the amount of purchases from foreign entities for Fiscal Year 2007, pursuant to Public Law 104-201, section 827 (110 Stat. 2611); to the Committee on Armed Services.

5259. A letter from the Chief, Programs and Legislation Division, Department of the Air Force, Department of Defense, transmitting Notice of the decision to conduct a standard competition of the Supply functions at Robins Air Force Base (AFB), Georgia, pursuant to 10 U.S.C. 2433(e)(1); to the Committee on Armed Services.

5260. A letter from the Director, Defense Procurement and Acquisition Policy, Department of Defense, transmitting a letter regarding a report to be submitted pursuant to Section 813 of the National Defense Authorization Act for Fiscal Year 2006, Pub. L. 109-360; to the Committee on Armed Services.

5261. A letter from the Principal Deputy Under Secretary for Personnel and Readiness, Department of Defense, transmitting authorization of the enclosed list of officers to wear the insignia of the next higher grade in accordance with title 10, United States Code, section 777; to the Committee on Armed Services.

5262. A letter from the Principal Deputy Under Secretary for Personnel and Readiness, Department of Defense, transmitting Authorization of Captain David W. Titley to wear the insignia of the grade of rear admiral (lower half) in accordance with title 10, United States Code, section 777; to the Committee on Armed Services.

5263. A letter from the Principal Deputy Under Secretary for Personnel and Readiness,

Department of Defense, transmitting authorization of Colonel Leonard A. Patrick to wear the insignia of the grade of brigadier general in accordance with title 10, United States Code, section 777; to the Committee on Armed Services.

5264. A letter from the Under Secretary for Acquisition, Technology and Logistics, Department of Defense, transmitting the Department's report on space-available transportation as required by Section 359 of the National Defense Authorization Act of FY 2006, Pub. L. 109-163; to the Committee on Armed Services.

5265. A letter from the Under Secretary for Acquisitions, Technology and Logistics, Department of Defense, transmitting a report on the budgeting of the Department of Defense for the sustainment of key military equipment, pursuant to Public Law 109-163, section 361; to the Committee on Armed Services.

5266. A letter from the Congressional Assistant, Board of Governors of the Federal Reserve System, transmitting the Joint Report to Congress on the Economic Growth and Regulatory Paperwork Reduction Act; to the Committee on Financial Services.

5267. A letter from the Secretary, Department of Commerce, transmitting the Department's 2008 Report on Foreign Policy-Based Export Controls; to the Committee on Financial Services.

5268. A letter from the Chairman and President, Export-Import Bank, transmitting a report on transactions involving U.S. exports to South Korea pursuant to Section 2(b)(3) of the Export-Import Bank Act of 1945, as amended; to the Committee on Financial Services.

5269. A letter from the Program Manager, Department of Health and Human Service, transmitting the Department's final rule — Interstate Shipment of Etiologic Agents (RIN: 0920-AA19) received January 25, 2008, pursuant to 5 U.S.C. 801(a)(1)(A); to the Committee on Energy and Commerce.

5270. A letter from the Deputy General Counsel, Federal Energy Regulatory Commission, transmitting the Commission's final rule — Transparency Provisions of Section 23 of the Natural Gas Act [Docket No. RM07-10-000; Order No. 704] received December 27, 2007, pursuant to 5 U.S.C. 801(a)(1)(A); to the Committee on Energy and Commerce.

5271. A letter from the Director, Office of Personnel Management, transmitting the Office's final rule — Retirement Systems Modernization (RIN: 3206-AL34) received January 2, 2008, pursuant to 5 U.S.C. 801(a)(1)(A); to the Committee on Oversight and Government Reform.

5272. A letter from the Director, U.S. Fish and Wildlife Service, Department of the Interior, transmitting the Department's final rule — Endangered and Threatened Wildlife and Plants; Revision of Special Regulation for the Central Idaho and Yellowstone Area Nonsensational Experimental Populations of Gray Wolves in the Northern Rocky Mountains [FWS-R6-ES-2008-009 92220-1113-0000; ABC Code: C3] (RIN: 1018-AV39) received January 28, 2008, pursuant to 5 U.S.C. 801(a)(1)(A); to the Committee on Natural Resources.

5273. A letter from the Assistant Secretary for Fish, Wildlife and Parks, Department of the Interior, transmitting the Department's final rule — Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Tidewater Goby (*Eucyclogobius newberryi*) [FWS-R8-ES-2008-0010 92210-1117-0000-B4] (RIN: 1018-AU81) received January 28, 2008, pursuant to 5 U.S.C. 801(a)(1)(A); to the Committee on Natural Resources.

5274. A letter from the Secretary, Department of Health and Human Services, transmitting the Department's determination on