Trey Grover, West Tallahassee, Florida; Seth Halpern, New Haven, Connecticut; Christopher Hart, Ashton, Maryland; David Heidrich, Jr., Oxford, Maine; Barron Hewetson; Bedford, Indiana; Leah Hirsch, Springdale, Arkansas; Emily Hollings, Charleston, South Carolina; Matthew Johnson, Wilmington, Delaware; Adam Kasold, Alexandria, Virginia; Blair Kauffman, Mystic, Connecticut; Stephanie Kelman, Phoenix, Arizona; and David Marquardt, Salt Lake City, Utah.

Carissa Marquis, Weatherford, Oklahoma; Taylor Mitchell, Alexandria, Virginia; Margot Murphy, Hunting Valley, Ohio; Matthew Nemer, Nashville, Tennessee, H. Ross Perot, III, Dallas, Texas; Sumner Powell, Alexandria, Virginia; Brock Synder, Bowie, Maryland; David Straszheim, Chevy Chase, Maryland; Logan Swogger, Miles City, Montana; Fulton Taylor, Alexandria, Virginia; Claire Wasserman, Washington, DC; Hayley Wilson, Jamestown, North Dakota; and Michael Zerihun, Oxon Hill, Maryland.

ENERGY POLICY ACT OF 2003

The PRESIDENT pro tempore. Under the previous order, the Senate will resume consideration of S. 14, which the clerk will report.

A bill (S. 14) to enhance the energy security of the United States, and for other purposes.

Pending:

Campbell/Domenici Amendment No. 864, to replace ''tribal consortia'' with ''tribal energy resource development organizations''.

The PRESIDING OFFICER (Mr. ALEXANDER). The Chair, in his capacity as the Senator from Tennessee, suggests the absence of a quorum.

The clerk will call the roll.

The bill clerk proceeded to call the roll.

Mr. DOMENICI. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. DOMENICI. Mr. President, I note the presence of Senator DORGAN. I understand he will shortly, at his disposal, offer some amendments with reference to hydrogen; is that correct?

Mr. DORGAN. Yes.

Mr. DOMENICI. And the occupant of the Chair will be finished at 2 o'clock and will manage the bill for a while for us during the time he is discussing his, and we will perhaps speak in opposition. In any event, the Senator from New Mexico will also do that. I may be gone for just a while. I have a statement with reference to some of the support that has been forthcoming over the weekend that I want to read into the record so Senators are aware of where the various groups in our country are with reference to the amendment to strike the loan guarantees that are pending under the bill, S. 14. I will do that and then I will yield the floor. It won't take me very long.

I am grateful that so broad a coalition of interest groups has been willing to send letters supporting the nuclear loan guarantee provisions in the Energy bill. I do not intend today to go into detail analyzing the relevance and significance of these loan guarantees and what I see as the fallacious nature of the arguments against them but merely to state the broad support at this point for the proposal.

No one is surprised that provisions in this bill are strongly supported by the utilities and groups such as the Nuclear Energy Institute, but today on my desk I found letters from unions, academics, and broad groups from industry. To some extent, that was a surprise. I greatly appreciate their support and want to spend a few moments going over their reasons for supporting this measure, which I consider to be so important for our country. One is a letter from John Duetch.

I don't think I have to explain to the Senate who John Deutch is. In terms of physics, energy, and nuclear energy matters, he is a ranking expert. He is perhaps the James Schlesinger of the Democratic Party. His letter is accompanied by a Ph.D. from Massachusetts Institute of Technology, well known in academic circles, named Ernie Munis. For those who are not familiar, he served as the head of the nuclear part of the Department of Energy during the Democratic administrations preceding the Republicans during the last 12 years.

Munis joins Dr. Deutch and they concurrently chair an MIT-sponsored study on the future of nuclear power.

I note the presence of the junior Senator from New Mexico and minority manager. All I have done so far is talk about some support, and the letter I am alluding to he is aware of.

I met with Drs. Deutch and Munis last week and asked for their views on the nuclear loan guarantee provisions in the bill. Their letter reads:

We believe such assistance is important and justified, and that action taken now will influence future investment decisions on nuclear power generation.

In fact, they propose what some would consider to be an even more direct subsidy for new nuclear powerplants. Their letter explains:

The mechanism [they] propose for this assistance is a production tax credit of 1.7 cents per kilowatt hour up to a total of $200 million per 1000 megawatt plant.

We did not do that in the bill. We had contemplated it at various times during the evolution of the legislation and thought for different reasons that the loan guarantee might be preferable. We now have a letter that says either of the two would be good, and for the first time two very powerful people say both would be good for our country.

I received letters today from the AFL–CIO, and I am most grateful for their support because I know it is not always easy for groups to support matters that pertain to nuclear power. I believe, as we have been saying for a number of days, nuclear power has arrived. The question is, How will it come on the scene so that America and the world can find out, once again, what it is all about.

I do know without a doubt that if a bill is going to be good for the American economy by creating jobs at home, the AFL–CIO will back it. I am grateful they are doing so today.

One of the letters from the Building and Construction Trades Department of the AFL–CIO says:

The fifteen unions comprising the Building and Construction Department consider nuclear power an integral, emission-free component in a broad array of national energy choices. And, not unlike the current state of Federal transportation and water systems, our domestic energy infrastructure is in need of a serious upgrade and American workers are in dire need of the jobs created.

The construction of these new plants will create significant employment opportunities for our highly skilled members. The construction of just one new nuclear power plant would stimulate the economy by creating between 2,000 and 3,000 family wage construction jobs. And, maintaining and operating that plant would create an additional 1,000–1,500 permanent, full-time, high paying jobs.

The other letter I received was from the Metal Trades Department. It reads in part:

On behalf of the AFL–CIO Metal Trade Department, I urge you to support provisions in the pending energy policy legislation that would enable the construction of new nuclear power plants in the U.S.

America's power demands are growing exponentially. A rational and effective energy policy depends upon a diverse mix of fuels and technologies, including nuclear fuel. The health of the nation's economy will require the construction of new nuclear facilities to ensure adequate power resources.

Loan guarantees for new nuclear power plants are a critical element of the energy legislation. We urge you to support them.

Letters will be forthcoming and will be circulated to Senators. I could not have said it better myself had I been preparing a speech. Rather than the numerous ad lib comments I made heretofore, I could not have said better what has been said by those who write in behalf of the working men and women who need good jobs and who have great skills that can put together these needed facilities. The Chamber of Commerce sent one of its key vote alerts about the Wyden-Sununu amendment. The Chamber is straightforward:

Our Nation's economic vitality and energy security rely upon the ability to utilize a diverse array of fuels and technology to generate electricity. Nuclear energy plays a vital role in assuring this diversity, producing some twenty percent of the country's electricity. Resources for research and development of energy sources ranging from clean coal and geothermal to wind and even fusion are provided by S. 14. To eliminate support for any of these sources would be near-sighted and risk energy stability in the years to come, perhaps leading to devastating economic effects.

The U.S. Chamber of Commerce urges you to vote against the Wyden-Sununu amendment to S. 14.

Mr. President, the National Electro-Industry Manufacturing Association issued a press release today that certainly sums up my position and, hopefully, the position of many in the Senate. In the press release they say:

The reliability and security of our nation's energy supply requires us to have a diverse energy portfolio, including nuclear power.

Votes against incentives, particularly loan guarantees, are a vote against reliable, low cost, stable, and environmentally friendly energy supplies. It is also a vote against jobs and a stronger economy.

Mr. President, I yield the floor.

The PRESIDING OFFICER. The Senator from North Dakota is recognized.

Mr. DORGAN. Mr. President, I ask unanimous consent that we set the pending amendment aside so that I might be able to offer an amendment.

The PRESIDING OFFICER. Is there objection?

Without objection, it is so ordered.

AMENDMENT NO. 865

Mr. DORGAN. Mr. President, I send an amendment to the desk and ask for its immediate consideration.

The PRESIDING OFFICER. The clerk will report the amendment.

The legislative clerk read as follows:

The Senator from North Dakota [Mr. DORGAN], for himself, Ms. CANTWELL, Mr. LIEBERMAN, Mr. AKAKA, Mrs. CLINTON, Mr. KERRY, Mr. NELSON of Florida, Mr. SCHUMER, Mr. HARKIN, Mr. DODD, Mr. REID, Mr. LAUTENBERG, and Mr. KENNEDY, proposes an amendment numbered 865.

Mr. DORGAN. I ask unanimous consent that further reading of the amendment be dispensed with.

The PRESIDING OFFICER. Without objection, it is so ordered.

The amendment is as follows:

(Purpose: To require that the hydrogen commercialization plan of the Department of Energy include a description of activities to support certain hydrogen technology deployment goals)

On page 296, line 21, before ''Not'' insert ''(a) IN GENERAL.—''.

On page 297, between lines 2 and 3, insert the following:

(b) CONTENTS.—The plan shall describe the activities of the Department of Energy, including a research, development, demonstration, and commercial application program for developing technologies, to support—

(1) the production and deployment of—

(A) 100,000 hydrogen-fueled fuel cell vehicles in the United States by 2010; and

(B) 2,500,000 hydrogen-fueled fuel cell vehicles in the United States by 2020 and annually thereafter; and

(2) the integration of hydrogen activities with associated technical targets and timetables for the development of technologies to provide for the sale of hydrogen at a sufficient number of fueling stations in the United States by 2010 and 2020.

(c) PROGRESS REVIEW.—The Secretary shall include in each annual budget submission a review of the progress toward meeting the targets under subsection (b).

Mr. DORGAN. Mr. President, I offered this amendment on behalf of myself and Senators CANTWELL, LIEBERMAN, AKAKA, CLINTON, KERRY, NELSON of Florida, SCHUMER, HARKIN, DODD, REID, LAUTENBERG, and KENNEDY.

I am offering a piece of legislation the Senate has previously passed and endorsed in the consideration of the Energy Bill last year. Let me spend a few moments talking about the amendment specifically.

Very simply, this amendment is one that tries to establish some targets and timetables with respect to moving toward a hydrogen economy, which is something the President talked about doing. Targets and timetables, what I mean by that is we cannot enforce targets and timetables that are absolute, but we can as a Senate think big and decide to see if we can establish some targets and goals for the movement toward a hydrogen economy with fuel cells for our economics.

I will describe why I think we ought to do this and why this is an important amendment. I will harken back to the Apollo program. On May 25, 1961, President John F. Kennedy announced our Nation was establishing a goal of sending a man to the Moon and having a safe return from the Moon. He said we will have a man walk on the Moon by the end of the decade. That was 1961. In 1969, Neil Armstrong and then Buzz Aldrin stepped on the Moon.

The Apollo project was an enormous undertaking. The NASA annual budget increased from $500 million in 1960 to $5.2 billion in 1965. It represented 5.3 percent of the Federal budget in 1965. Think about that. In today's terms, that would be $115 billion. NASA engaged private industry, university research, and academia in a massive way. Contractor employees increased by a factor of 10, to 376,000 people, in 1965. When President Kennedy said in 1961 it was his vision to have a man walk on the Moon by the end of the decade, there was no technological capability to do so at that moment, no guarantee it could be done. The Soviets had an advantage in space flight. They had put up a satellite called Sputnik. We were eager to see if we could not overcome that advantage. During the height of the cold war, that Soviet advantage was of great concern to us. The technological barriers were very significant. The expense was daunting. Yet, on July 20, 1969, Neil Armstrong stepped down off of that lunar lander and stood on the surface of the Moon; Buzz Aldrin followed him. I recall they actually pantomimed a golf game and jumped around on the surface of the Moon. In a decade, the President said let's set a goal and reach that goal.

I will talk about another goal, another big idea, one that we ought to establish now for this country and for its future. That is the goal of deciding, as President Bush has suggested, that we move toward a hydrogen economy and fuel cells for our vehicles. I will describe why I think that is important.

This chart says what the President is telling us:

America's energy security is threatened by our dependence on foreign oil. America imports 55 percent of the oil it consumes. That is expected to grow to 68 percent by 2025.

Again quoting the President:

Nearly all of our cars and trucks run on gasoline, and they are the main reason America imports so much oil. Two-thirds of the 20 million barrels of oil Americans use each day is used for transportation; fuel cell vehicles offer the best hope of dramatically reducing our dependence on foreign oil.

That is from President Bush, and I fully agree with that statement.

This graph shows what is happening with respect to consumption and domestic supply of oil. We are importing 55 percent of our oil at the moment, much of it from very troubled parts of the world, and that is expected to grow to 68 percent. The American economy is and will be held hostage by our ability to find oil and import it from outside of our country's borders. Should that be difficult for this country? Should it cause all of us great concern? The clear answer to that is yes. That is a very serious problem.

Here is another chart. This is a list of the countries that are supplying our oil. Our top supplier is Saudi Arabia. Almost one-third of our oil, incidentally, comes from the Middle East. Iraq has been our fifth largest; it is the sixth largest supplier on this chart. Also listed are Mexico, Nigeria, Venezuela, and Angola. And when you look at the amount of energy we are importing from that part of the world, it is a very serious problem.

Some want this energy debate to be a debate about two issues. If it is only those two issues, we lose. They are: Should we drill in ANWR? How about doing something on CAFE standards? Well, if this is only about ANWR and CAFE standards, then we lose. We need to pole-vault over those issues. Yes, we can address them, but it seems to me if we don't pole-vault over to new ground and deal with these issues in a much different way, every 25 years we will come back and debate energy and we will be debating exactly the same issues: where next do we drill? How much more efficient can we make a carburetor, through which we run gasoline, much of it imported from overseas?

If our strategy for energy for this country's future is simply digging and drilling, then it is a strategy I call ''yesterday forever.'' It doesn't really change very much. Every 25 years, we can redebate the issue of how dependent we are and how dangerous it is for us to be that dependent on foreign sources of energy. I would like to see a different debate, one that says let's break out of this cycle. When I say digging and drilling is yesterday forever, I don't think we should not dig and drill. We will, we can, and we should. We will always use fossil fuels. Using our coal resources in an environmentally acceptable way with clean coal technology makes great sense to me. Using our domestic sources of energy and natural gas—especially oil and natural gas—makes sense to me. We will dig and drill.

But if that is our energy strategy, we really have not moved the ball forward at all. So the question is, what more can we do? The President suggested in his State of the Union Address that we ought to chart a different course.

I introduced legislation prior to the President's State of the Union Address saying let's move to a different kind of technology, a different kind of energy economy; let's move to a hydrogen economy using fuel cells.

First of all, using fuel cells and hydrogen is twice as efficient in getting power to a wheel as using the internal combustion engine. Second, when we use hydrogen fuel cells in automobiles or vehicles, we are sending water vapor out the tailpipe. What a wonderful thing for our economy. We double the efficiency of the energy source, and then we eliminate the pollution out the tailpipe. We double the efficiency using hydrogen, which is a ubiquitous source of energy—it is everywhere—and then we decrease air pollution by putting water vapor out the tailpipe of a vehicle. That makes great sense to me.

I introduced legislation. It is called the Hydrogen Fuel Cell Act of 2003. I compliment President Bush for proposing in his State of the Union Address that we move in this direction. I have said it is not small or insignificant for a Republican President to say let's do this. It was a rather small thing in terms of his proposal to fund it. It was not a bold approach. It was a rather timid approach. But that should not detract from the fact that this administration put itself on the line to say: Let's move in this direction.

The President proposed $1.2 billion in 5 years. Only slightly more than half was new money. It appeared to me some of it came at the expense of other important areas of conservation and renewable energy.

Having said all that, in the Energy Committee we came very close to tripling that amount of money. We bring to the floor of the Senate legislation that substantially improves the initiative dealing with hydrogen fuel cells. I think that is a significant step forward, one that I appreciate.

What is missing is, in addition to the legislation I introduced, which actually calls for $6.5 billion in 10 years—so more money—and also pilot projects, Federal purchase programs, tax credits, and so on—what is missing is targets and timetables. If we are going to do this program, let's set out targets and timetables. I am not suggesting they can be ironclad. They cannot.

If we are going to make this a big proposal, a bold proposal in the spirit of an Apollo project saying let's do this, let's make a difference, let's do this, let's decide that 25 years from now we will not have a debate about how much gasoline we are running through the carburetors of America's vehicles because we found a way to take hydrogen from water, use it as an energy supply, and through fuel cells use it to power America's vehicle fleet, we can do that.

Many of my colleagues, Republicans and Democrats, on the Energy Committee have been supportive of this proposal. There is nothing partisan about this at all. As I said, it was in President Bush's State of the Union Address. It comes in legislation I have introduced. It comes in initiatives my colleagues have talked about and introduced as well. The question is, How do we make progress by establishing some big and bold goals?

This legislation I have introduced, taking one piece of the Hydrogen Fuel Cell Act of 2003, tries to establish some way points. When I learned to fly airplanes many years ago, they taught me, with modern instrumentation, that I can create way points for my airplane. When you get up in the air, you program into the computers on the plane the way points to which you want to fly. It is a fictitious point 300 or 400 miles away, but once you establish that way point with your instruments, you fly to the way point. When you reach that way point, then you take a new course to the next way point.

My point is, we need way points—targets, and timetables—to transfer to some new hydrogen fuel cell economy. If we do not, we will not get there. If we do not, as President Kennedy said, put a man on the Moon by the end of the decade, if we do not today make the equivalent of that commitment in deciding how and where we are going to head with this hydrogen fuel cell economy, we are not going to get there. We just will not.

Let me show some examples of what is happening in hydrogen fuel cells. General Motors Hy-wire fuel cell concept car unveiled in August 2002. Some say there are no such things as fuel cells. Of course there are. I have driven a fuel cell car that drove from California to the east coast, across this country.

Are they commercially available now? No, they are not. Are they horribly expensive? Yes. But we are in the design stage and the research and development stage to make hydrogen fuel cell vehicles affordable.

This is the Nissan Xterra fueled by compressed hydrogen tested on California public roads in 2001.

This is the Ford Focus fuel cell vehicle. Production is ready for prototype, autumn 2002.

This is a hydrogen fueling station by Powertech Labs.

This is a picture of a DaimlerChrysler fuel cell bus introduced in Germany in 1997. I have actually ridden in a fuel cell bus running on the streets of this country.

The point is, we can do this. Is this easy to do? No, it is not, not at all. What do you have to do to convert to a hydrogen fuel cell economy for our vehicle fleet? Notice, I am not talking about stationary power centers. That also exists as the capability with respect to hydrogen and fuel cells, stationary engines, and so on.

I am talking about the vehicle fleet because a substantial increase in the demand for oil comes from our vehicles. I do not have a chart to show that. It is quite clear that unless we do something, especially about our vehicle fleet, we will, 25, 50, and 100 years from now, still be debating on the floor of the Senate how much additional gasoline we run through America's carburetors.

What do you have to do to switch? A bold plan means we are going to change our entire infrastructure. We have production. How are we going to produce hydrogen? There are a lot of ways to produce hydrogen. We can use electrolysis to separate oxygen and hydrogen in water and store the hydrogen and use it in fuel cells.

Let me give another example. We can put up a wind charger, the new highly efficient wind turbine, a 1-megawatt wind turbine, and take the energy from the air. We can use that energy for electrolysis to separate the oxygen and hydrogen in water and store the hydrogen for use in fuel cells.

There are so many ways and different approaches to use hydrogen. We have production issues: How do we produce hydrogen? From what source? But it is ubiquitous; it is all over. That is not an insurmountable problem. How do you produce hydrogen? How do you transport it? How do you store it? How do you make it available at the infrastructure, at service stations across the country for a vehicle fleet?

Those are issues we ought to be dealing with and will deal with and the administration will deal with at the Department of Energy.

What I say very simply in this amendment—and it has taken me a long time to get to the point, but I wanted to make a presentation on why I think this is very important for our country—I say let's establish, as President Kennedy did, a goal. Let's have 100,000 hydrogen fuel cell vehicles on our roads by 2010, 7 years from now. Let's have 2.5 million hydrogen fuel cell vehicles on our roads by 2020. Let's set some goals. Let's set some way points and say: Here is what we strive to do; here is what we aspire to do as a country.

If we do not set goals, I guarantee we will never reach the potential that exists for us to convert our vehicle fleet to hydrogen fuel cell fleets and to relieve ourselves of the danger that exists having so much of our energy coming from outside our borders.

If we wake up tomorrow morning, God forbid, and terrorists have interrupted the supply of oil to this country—and, yes, that could happen—this country's economy will be flat on its back. It will be flat on its back because we rely, to the tune of 55 percent, on oil from sources outside this country and much of it from very troubled parts of the world. That is going to go to 68 percent, and we ought not let it.

If in this Chamber we spend weeks and wrestle and debate energy policy and come out with an energy policy that says what we need to do is just produce more and somehow we will end up just fine, we have done nothing for America's future.

We have done nothing for America's future. An Energy bill that makes sense to me has four parts. One is, yes, let's produce more. Let's incent more production of fossil fuels, absolutely. I do not support, for example, drilling of the ANWR region, one of our most pristine and delicate areas. I do not think

we need to do that. But let's produce more. There are thoughtful ways to produce more. I happen to believe we ought to be able to produce much more in the Gulf of Mexico in an environmentally sensitive way. Let's conserve more. We waste a huge amount of energy. Production and conservation, that is two parts.

The third is efficiency. Everything we use almost every day, in every way, with all of our appliances could, should, and will be more efficient if we pay attention to and provide incentives for efficiencies.

Finally, and importantly, is the area of a renewable and limitless source of energy, and that includes ethanol, biodiesel, and many others, but most importantly it includes this proposal: Hydrogen and fuel cells can be our future. It can make this country more secure. It can remove from this country's neck the yoke of having over half of its oil coming from troubled parts of the world. In a very substantial way it can do what President Kennedy did in establishing new goals in space travel for our country. It can inspire our country to be able to control our own destiny with respect to energy.

I close as I began by saying that President Bush was absolutely correct in the State of the Union Address, and it is not a small thing for this President to say let's move in this direction. I am putting my administration in support of this direction, this movement. That is not a small thing. It is a big deal.

I have said his proposal is more timid than I thought it should be. I do not mean substantial criticism by that. What I mean by that is I think to do this it has to be big and bold. Especially it has to set timetables and targets.

The Senate committee has nearly tripled the amount of money the President has proposed. That is a significant start, in my judgment. We could even do more in the authorization bill with the type that I have suggested. This amendment I have offered today is not that authorization bill. It is simple. It says while we have made significant strides in the Energy Committee on this subject, and now that we have a Republican President, many Democrats and Republicans in Congress believe we ought to move in this direction, so let us be bold enough to set some timetables and targets.

As I indicated, the Senate has already passed this legislation last year, and I hope the Senate would embrace it once again and pass these targets and timetables.

One final point: These targets and timetables simply say the Department of Energy shall report to us on how they establish the strategies to reach these targets. We cannot impose our will in the sense that we cannot tell an Energy Department they must reach these targets. We do not have the capability of doing that. The technology does not exist to get from here to there. But we can ask the Department of Energy to provide for us the strategies by which they could meet these targets, and that is what our amendment asks. My hope is this will be unanimously supported by the Senate.

I yield the floor.

The PRESIDING OFFICER (Mr. Gregg). The Senator from Tennessee.

Mr. ALEXANDER. Mr. President, I begin by complimenting the Senator from South Dakota on the work he has done on fuel cell hydrogen over the years, and also compliment others on the other side of the aisle—I see the ranking member of the committee, Senator BINGAMAN from New Mexico. For at least a dozen years, this Congress, and particularly this Senate, has been interested in the hydrogen fuel cell technology. The Senator from North Dakota and the Senator from New Mexico are the ones who have pushed that the hardest.

What we have now is some consensus, at least in our committee, and I hope in the Senate at large, on the importance of this bold proposal. I will take a moment to put in perspective what the committee has done.

Mr. DORGAN. Will the Senator yield for just a moment?

Mr. ALEXANDER. I would be happy to.

Mr. DORGAN. I intended to complete my comments by complimenting Senator ALEXANDER and others on the committee who have taken a position I think provides some leadership in this area. I did not mention those in the committee who, when we marked up these issues, played a significant role in the hydrogen title. I intended to do that at the end of my remarks. So I thank the Senator for allowing me to do that.

Mr. ALEXANDER. I thank the Senator for his comments, but the bottom line is the process by which this committee worked on the hydrogen fuel cell proposal, which is title 8 of the Energy bill, which was a good process for those who would like to see how two parties in an evenly divided Senate can take an issue and come to some consensus and narrow the differences. It was a pretty good process. What is remaining are the two issues of which the Senator from North Dakota spoke.

One is more money and two is more mandates, which he now has suggested are targets, if I understand correctly, rather than mandates. Am I correct in that?

Mr. DORGAN. Mr. President, if the Senator would yield further?

Mr. ALEXANDER. Yes.

Mr. DORGAN. There is nothing in here that would be a mandate. These are establishment of targets by asking the Department of Energy to provide Congress with their strategies on how to reach them. I have specifically not imposed mandates. I am simply asking them to develop strategies and to report those strategies to the Congress.

Mr. ALEXANDER. I thank the Senator. So that narrows the differences considerably.

Having acknowledged the good work done on the other side, I will also acknowledge the good work the President did. Only a President of whatever party can put something on the agenda the way a President can, and so it was exciting to all of us who cared about this issue and about the goals, which are to reduce our dependence on foreign oil and to clean the air, which is what this does, to see President Bush, in his State of the Union Address, make a bold proposal to direct the Secretary of Energy to explore the possibility of a hydrogen economy and to develop the next generation of technology that would include hydrogen.

What we are really talking about, as the Senator from North Dakota explained, is a completely new way of thinking and living our lives. I noticed the other day in our local newspaper in Tennessee there was a picture of a filling station in Iceland that opened. Iceland has a hydrogen filling station. The buses that operate in Iceland back up to that hydrogen filling station and instead of putting gasoline in their tanks, they put in hydrogen. They drive around on the hydrogen, and instead of emitting some carbon-based pollutant into the air, they emit only water, which is the product of that process.

It takes a little while for someone who has not thought about this much, as I was at one time, to get one's mind around this, but we are basically taking the internal combustion engine and putting it to the side and putting in a new process that reduces electricity, runs the car and, as the Senator said, the only emission is water. So there is an enormous advantage on two matters that concern us greatly: One is reduce our dependence on Middle Eastern oil, and we are in the middle of a process right now where we have been reminded about what a challenge that is to our national security. Some estimates are that by the year 2035 or 2040 we would have 11 million barrels per day less of reliance on our need for oil if we had a hydrogen economy. No one can know for certain what those numbers are, but all of us know it is a big change and a big number.

Of course, the second aspect is clean air. This week, and for the next few weeks, we will be talking about ways to clean the air. The most interesting, and difficult sometimes, arguments we have that come before our committee and the country are those that intersect with energy and the environment. Here is a nice intersection between energy and the environment because if we are emitting only water, then the parts of our economy, and especially the transportation parts that use hydrogen-based cars instead of the internal combustion engine, will make a remarkable difference in not just our clean air but our standard of living because our lack of clean air and our difficulty with finding ways to clean the air is a limit on our ability to grow our economy. So this is a very important topic and all of us recognize it as such.

Now let me start with the President's proposal, to put this in perspective, including the Senator's amendment. The President's proposal authorizes the Department of Energy, including our National Laboratories, to spend about $1.3 billion over the next 5 years in research and development in the following areas: research on hydrogen-powered engines, and research on the production of hydrogen.

We have to make the stuff. It can come from many places. It can come from fossil fuels. It can come from renewable resources, a major part of the discussion in the Energy bill last week. It can come from nuclear energy, which is a major part of the discussion in the Energy bill this week. At a nuclear power plant one might be able to produce some of the hydrogen that would clean the air. And it can come from natural gas, which is the easiest way, arguably, to get it today. But with the recent spikes in the price of natural gas, we can see the difficulty relying on one form of energy too greatly.

The President's proposal would fund additional research on transportation and delivery of hydrogen via pipelines and fueling stations. Iceland has a hydrogen fueling station. We do not have any in the United States. We have a few hundred miles of hydrogen pipeline. Imagine a different America where, instead of backing your car or truck up every block—sometimes more often than one block—to a station where you get gasoline, you back it up or drive into a place where you fill up with hydrogen. That is a big change in our infrastructure. This research would help figure out how better to do that.

Also, we need additional fuel cell research. The Senator mentioned some of the obstacles that exist to this wonderful vision. One of the difficulties is we need to find new ways to produce hydrogen, which I mentioned. Another is we need to find a little cheaper way of building a hydrogen car. The Senator and I drove the same one, I believe a Ford, around the block. I believe that car costs a couple million per unit to make right now. In other words, the early models are extremely expensive.

We need to find safe ways to store hydrogen. We need to meet the challenge of this infrastructure.

We have great obstacles to overcome. But in this United States of America, if anything defines our national ethic, it is that anything is possible. We are ready to leap ahead and go after this. The President recommended we put $1.3 billion behind it, and that was step 1 in this session. Then the committee sat down and began to recognize the suggestions made by those who had gone before. Instead of the $1.3 billion recommendation the President made, we took those recommendations, reduced some of them to what we thought were a manageable number, and still more than doubled the amount of money we recommend to the full Senate that we authorize—nearly $3 billion total. As the Senator from North Dakota said, nearly triple the amount of money. So in addition to the President's $1.3 billion proposal, we have about $1.6 billion more for other ideas brought into the bill by people other than the President, from the Senate and the other side.

We have a hydrogen vehicle demonstration program for the Government and nonprofit agencies; a stationery fuel cell demonstration program for use in residential and commercial buildings; a hydrogen car and fuel cell demonstration program in three national parks. That is a terrific idea. I would like to see one in the Great Smoky Mountains, our most polluted national park today. Many people think of Yellowstone as receiving the most visitors; but only 3 million people visit Yellowstone while 10 million go to the Great Smoky Mountains. The Great Smokies is polluted, particularly because of the cars and coal plants.

An idea for which I commend the Senator is providing for the establishment of a university education degree curriculum designed to help our workforce move into a hydrogen economy, with centers of excellence in our great research universities to help realize this shared vision. In the United States, we have the world's only great research universities. They are our secret weapon. We need to fund them and the research and technology better. That is a sure way to move toward this goal.

This bill before the Senate today is a combination of ideas from both parties, from the President and from the Legislature. The amounts we included, taking ideas from the other side to the bill, actually cost more than the proposal from the President—nearly $3 billion.

That brings us to the point of the amendment. Is it enough money? Do we need targets? I will respond to that in this way. The President mentioned the Apollo. That is vivid in our minds. I remember as Education Secretary I tried to think, using that Apollo objective, which sticks in our minds to say, can we have in 10 or 20 years the best schools in the world? Nothing is quite like that Apollo mission. It is always hard to make an analogy, but the President has the same dream that we have here. The dream is that we have an America less dependent on foreign oil, an America that has cleaner air, something that increases our national security and our health and well-being.

However, there are other parts to that dream than just the hydrogen car. There is, if we are talking about energy, the need to revive our nuclear energy. Japan was decimated by an atomic bomb, and they are relying primarily on nuclear energy. And France is relying primarily on nuclear energy. It has been since the 1970s that we started a new nuclear power reactor in this country. So this bill, in addition to hydrogen, is to help stimulate our nuclear energy.

We need not just stimulate nuclear and hydrogen; we need to find a way to burn coal in a cleaner way. We make half our electricity from coal, but it pollutes the air more than we can tolerate. So we need coal gasification, as an example. This bill encourages that. The Senator from North Dakota mentioned wind turbines in North Dakota. They are part of the dream as well. Natural gas is part of the dream. Its price went up, so we need to explore more and we need pipelines to get that gas to the places it needs to go. This bill encourages that. We need more new oil that is not dependent on some other country. We have tried—although we do not always agree in this body on where to drill—to do that.

So the dream of clean air and less dependence on foreign oil has many parts, including the hydrogen vision the President outlined in his address, so that a child born today can have a choice in this generation of driving a car fueled by a fuel cell hydrogen engine.

The Apollo dream is not exactly the same. We have a dream, but this is only a part of the dream.

As far as the amount of money is concerned, I suppose one could always argue about the amount of money. We considered that very carefully in the committee. We nearly tripled the amount of money the President requested. We took into account virtually all of the suggestions by the Senator and others on the other side, which is why this bill came to the floor from the committee, because we had such a consensus. For a new technology which, while bold, is still unproven, we believe this is a generous amount of support in a bill that is balanced across a broad number of sources of new and improved energy.

That brings me to the targets and the timetables. I appreciate the Senator moving from mandates to targets and timetables. That is a step forward. However, I prefer we not make, if I may say with respect, wild guesses about how this unproven technology might work, but that we join as we have in this bill to find a variety of ways to stimulate and not fool ourselves into thinking we are going to get to this point or that point in any particular year.

President Kennedy said let's go to the Moon, and he said by when he hoped to go, but he didn't say fly this kind of airplane, or use this kind of rocket, or get a third of the way there by 1963. He said, Let us go there.

So let us go toward a day when we have cleaner air and when we have less dependence on foreign oil because of a variety of steps, one of the most impressive of which is the vision of a hydrogen fuel cell car. But let us not try to make a wild guess just about when that will come, in what year. I believe one of the greatest underutilized powers of this body is the oversight power. Really, the Senate, the Congress, has two great functions: One is to spend

money, and one is to oversee how that money is spent. There is nothing to keep us from that. In fact, as chairman of the Energy Subcommittee, I would want to make it part of my responsibility to regularly ask the Secretary of Energy to come forward with his plan, about what progress he is making, and suggest to him faster progress, and to ask him what timetables seem reasonable.

There is another aspect to this, too. The Government is not going to invent the hydrogen car. No one has suggested the Government will. We are just providing some free commercial researching. But we should leave it to the market to make the greatest progress in determining what timetables will work, what targets make sense, what research will finally work, and what the customers will buy.

I had an opportunity within the last couple of weeks to talk with the chief executive of Nissan, Mr. Ghosn, who has had a remarkable record. In 1999, Nissan had a $19 billion debt and was headed down. Today, it has no debt. It is headed up. I asked him about the hydrogen car because some of my scientist friends had been throwing a little cold water on the idea, saying some of us in the Senate were coming up with a pipedream that might never work. Here is what the head of Nissan said, and he said this publicly: Nissan is spending $800 million in the next 7 years on research just on fuel cell hydrogen cars. He wants to be, and has publicly stated that Nissan intends to be, not just a leader but the leader in that area. In other words, they are putting money there, real dollars. They are making that kind of investment of prestige and dollars.

Toyota and Honda, industry sources tell me, are spending at least that much of their own money. And the General Motors president has said to me he takes this seriously as well.

So the President's focus on the hydrogen car has done one good thing. It has taken the work that has been done in this body in the last 10 or 12 years on hydrogen and put it in this bill in the form of $1.6 billion. It has taken the President's own proposals of research—that is another $1.3 billion. But the real value is the President's proposal, and our agreement on this, if we do agree, will put this up front, create a national commitment, the kind of commitment we had when we went to the Moon. That is right. It is that kind of national commitment. But let us realize that when we went to the Moon, we went in reasonable steps and this plan for cleaner air and for less dependence on foreign oil has many parts, including other forms of energies, and the timetables and the targets are best left to the marketplace.

So I rise to say this represents great progress by the committee. I commend, again, the Senator for his leadership. I urge that we not support an amendment creating wild guesses and artificial targets and timetables, but move forward and let the marketplace help us make sensible judgments about that, using our oversight role as Senators to make sure the program stays on course.

The PRESIDING OFFICER (Mr. BROWNBACK). The Senator from New Mexico.

Mr. BINGAMAN. Mr. President, I rise to speak briefly in favor of the amendment by the Senator from North Dakota and give the reasons I believe this is a meritorious amendment that would strengthen the bill.

First, I think everyone needs to understand the amendment is an amendment that just sets targets. It really says that the plan—this is the plan the administration is going to come up with to spend this $1.3 billion, I believe it is—

> shall describe the activities of the Department of Energy, including a research, development, demonstration, and commercial application program for developing technologies to support—

and then it goes on to set these targets to support:

> the production and deployment of . . . 100,000 hydrogen-fueled fuel cell vehicles by 2010; and . . . 2.5 million hydrogen-fueled fuel cell vehicles by 2020 . . .

As I say, this is an amendment that sets some targets. They are not mandates; they are targets. I think they add greatly to the bill. Unfortunately, the Senator from Tennessee, as chair of the Energy Subcommittee in the Energy and Natural Resources Committee, does have the primary responsibility for the oversight of a lot of this activity. I would see this amendment, frankly, by the Senator from North Dakota as a way to give him more ability to perform that oversight.

Frankly, the only oversight target in the bill right now is you could call in the various officials from the Department of Energy and ask them whether in fact they are spending the money we have authorized to be spent. That is not a very effective kind of oversight. I am sure they would tell us they are spending the money.

The real question is, Are they achieving something with the expenditure of those funds? I believe this amendment tries to put in place some targets for what we would like to see them achieve. Clearly those are not hard-and-fast targets and they will change over time, but they do give us some benchmarks against which we can measure progress. I think that is very useful.

The Senator from Tennessee made the point that, in his view, his preference would be to leave it to the market as to how quickly these technologies develop. Clearly the private sector is going to determine to a very great extent how quickly these technologies become commercialized and how well they develop. But this legislation is authorizing the expenditure of Federal funds. It is entirely appropriate that we specify what we want to see as results coming out of the expenditure of those funds. To me it is not incumbent upon us to leave that kind of decision to the market. The market will have a major role, major voice, major determination as to what actually comes to market and what actually is commercialized and how quickly. But in the expenditure of taxpayer dollars it is our job to set out there what we would like to see achieved. If we determine after a few years that those targets are not realistic, we can always change them. Congress is in session every year. But this gives us something to shoot at. I think it is a major step in the right direction.

The Department, under the legislation we are considering, would invest $171 million in the current fiscal year, $272 million next fiscal year, $1.7 billion over the next 5 years—I said earlier $1.3 billion. I gather it is $1.7 billion. In my view, it is entirely appropriate that we look at trying to achieve some particular targets so we can then go back to our constituents and say this is what this money is going for and this is how we are making progress.

I do want to say, just before I yield the floor here, that this has been a very good, bipartisan effort. The Senator from North Dakota has been a long-time leader in trying to get more attention to the use of hydrogen in meeting our future energy needs. The Senator from Tennessee is certainly a strong proponent of this and has demonstrated that in our debates this year.

I know there are others on our committee who have taken a very major role: Senator AKAKA, as well, of course, and others before him. So I think this is a very good part of the bill. I think this amendment by Senator DORGAN will strengthen it even more.

I hope very much we can see it adopted.

I yield the floor.

The PRESIDING OFFICER. The Senator from North Dakota.

Mr. DORGAN. Mr. President, because the Senate in the last Congress passed an Energy bill which included targets and timetables, I think it would be considered a retreat if for some reason or another we this year objected to targets and timetables that were included in this Energy bill. In the past Congress, with the President supporting fuel cells and a hydrogen economy, I don't think we ought to be retreating on these kinds of issues.

The Senator from Tennessee said there are two parts. There are many parts of the bill. He is right about that. There is the part of the legislation that deals with that which we have always done. We have always been concerned about production of fossil fuels. So we have, of course, portions of the bill to deal with that. We have conservation issues and renewable energy issues. Those have always been in the bill.

But this piece is a different part—a part that is different and unusual. This part deals with something that is new, big and bold. It is why the President

put it in his State of the Union Address. That is why he had a special rollout of his proposal down at the Building Museum with hundreds of people present. Virtually every industry leader with respect to hydrogen and fuel cells in the country came to town. Why did the President emphasize that? Because this is a different part. This is not some unusual part of the energy debate. It is the big, new, and bold part of that debate.

I have used the term ''Apollo project.'' That perhaps could have used or I could have used ''the Manhattan project,'' or something that would denote a project by which a country aspires to achieve something. A country aspires to establish goals, and it reaches those goals. A strategy that says, let us spend this money and, by the way, let us know if anything comes of it, is, in my judgment, not much of a strategy.

I am a big believer in understanding that things happen that you make happen—not that you let happen. If you have a problem and resources, you have two choices: Let us move this money out and see what we let happen with it, as opposed to deciding what we are going to make happen. There is a very big difference.

My colleague from Tennessee used the term ''wild guesses'' several times. Let me just tell you that Nissan, Toyota, Honda, DaimlerChrysler, Ford, and General Motors are not engaged in wild guesses. None of them is engaged in wild guesses. They are making substantial investments in fuel cell vehicles believing that we are moving toward a hydrogen fuel cell economy—not wild guesses at all.

Incidentally, I think my colleagues would, if they checked with most of these organizations I have mentioned and others in the industry, find that they very much support us being bold and establishing these targets and timetables. Why? Because they know that a country that establishes targets and timetables in pursuit of a policy is a country that is going to be fostering new development through research, and opportunities through research in the private sector as well. I just think it is really important for us to do this.

All of us come from different kinds of hometowns. I come from a small one with about 300 people. I am guessing, probably like every hometown, we had two or three people who every day went down to the bar and played Pinochle all day long. That was their social life. They just stayed there all day long and played Pinochle. They most likely in their conversations opposed almost everything new that was going on in the community: ''It won't work, can't work; shouldn't do it.'' They just played Pinochle and criticized anyone who was making things happen in the community.

The President has said we ought to do this. There are going to be doubters outside of this Chamber and doubters in the country who don't want us to move in this direction who say it can't work, it won't happen, or this is not our future. But they are wrong. President Bush is right. They are wrong.

This country will best serve its future, in my judgment, if we decide that we are going to do this with the President and with the Congress; we are going to do this and make it happen. Should we just say, well, except that there are other alternatives and no such picking and choosing?

If President Kennedy had said, let us not pick a goal to go to the Moon, maybe it ought to be Mars, but if we decided the Moon, let us not decide it had to be in this decade because the technology doesn't exist, let us say we are going to one planet and the Moon maybe someday, we probably would have never gotten past Cape Canaveral. We probably would have never gotten off the launch pad.

He established for this country a very bold vision. The Manhattan project was a very different project. It was the same thing: We are going to do this. We are going to marshal all of the resources and try to make this happen.

My amendment is much more timid than that. I do not suggest we can strap a mandate on this country and a burden on the Department of Energy, or the private sector for that matter, that says we have to meet these goals, timetables, and targets. That is not what I am saying. I am saying, in the pursuit of this money, that we are going to spend several billions of dollars, let us ask the Energy Department in their plan to describe their activities in pursuit of this goal which says we aspire to have 100,000 hydrogen fuel cell vehicles in the United States by 2001 and 2.5 million by 2010. Maybe it can't be reached; I don't know. It is certainly not a wild guess; it is just deciding that we ought to as a country establish some goals.

Once again, I think there is a big difference between letting things happen and making things happen. We have the capability, it seems to me, with this President and this Congress—and with the private sector very engaged with an aggressive aim, which my colleague from Tennessee described a while ago—to do some really remarkable things in this area. I think they will be enhanced by establishing these targets and timetables.

I really see no downside at all. I sometimes can see in legislation or amendments that are introduced that there is an upside and a downside. What if it succeeds or fails? For the life of me, I cannot see the downside of Congress establishing in this legislation some targets and timetables that put us on a path to a new, bold, and aggressive energy policy that will do all of the things my colleague from Tennessee described and all the things I described which are good for this country—substantially limiting our dependence on foreign oil, which provides much greater economic and energy security for this country, and dramatically improving air quality in America. Instead of putting pollutants out of the tailpipe, you are putting water vapor out of the tailpipe.

There are so many things that make sense with respect to this proposal. Much of the proposal that is in the Energy bill makes great sense. I support it. I wish it were a bit bolder than it is. Nonetheless, it is substantially better than what was sent to us in the President's budget. I compliment my colleague from Tennessee and my colleague from New Mexico and others on that score. But I still believe we will do this country a favor and improve this legislation as it leaves the Senate by including timetables and targets which were in the legislation in the last Congress.

I yield the floor.

The PRESIDING OFFICER. The Senator from Tennessee.

Mr. ALEXANDER. Mr. President, the Senator from North Dakota and I agree on so much about this subject that I am not going to extend this discussion very much further for fear of dredging up something that we might disagree on because we don't have many differences here.

If I may briefly comment, I was listening to the Senator's discussion of that bar in North Dakota. When I was growing up in the mountains of Tennessee, Blount County was a dry county, we didn't have bars, but we had Byrne Drugstore, which is where all that same kind of discussion must have occurred.

I was just thinking. Talking about the suggested timetables, the Senator suggested that, for example, we have in here a timetable of 100,000 hydrogen fuel cell vehicles in the United States by 2010. I was wondering what they would say in Byrne Drugstore if I went back to it and said I just became a Senator, and I drove a new hydrogen fuel cell car around the block which emits water out the tailpipe and doesn't burn any gasoline. The car costs $2 million a car to make. I got so excited about it I went over to the Senate and I voted to say we ought to have 100,000 of those in the United States by 2010 and 2½ million of them by 2020.

I think they would say to me: Well, LAMAR, I think you got carried away a little bit. At 2 million times 100,000, how do you know what the cost of that car is going to be in 2010? I might say: Well, I may not have really meant that. We meet every year, and we can change that next year if we want to.

They might say to me: Why did you put it in there in the first place if you didn't know that much about what you were talking about? The idea sounds exciting, but why would you guess how you would take a $2 million car and make sure it made any sense at all to target that we have 100,000 of them in the United States by 2010? What ability does the U.S. Government have to wave a magic wand and make sure that happens?

I was then thinking, too, about all the automobile companies both the

Senator and I talked about. Now, they are hot on this. I mentioned Mr. Ghosn at Nissan. He wanted to make sure I knew he intended not just to be a player in the fuel cell hydrogen car, he intends to be ''the'' player, and he is going to spend $800 million of his company's dollars on research in this far out idea that probably will not be commercially viable—none of us believe—for 15, 20, or 25 years.

That is a big step. But I really doubt Mr. Ghosn went to his board or the chairman of General Motors went to his board or the chairman of Ford went to his board and said: I want you to authorize that we require that our company make a certain number of these cars by a certain year. I think they would say: You are not being entirely realistic. You have gotten a little carried away.

So I want to show great respect for the Senator's goals, his hard work, and his energy. We agree on 95 percent of this. But I think to adopt those kinds of targets and timetables—to use a gentler word—might be misleading at the very least because I don't think that is the way to go about it.

Let's encourage it in any way we can—and we tried to do that here—and then let's have oversight on a regular basis. Then, if the technology is proven enough that it makes sense for us to be a little more specific, well, maybe we can take it up then. But if I went into the Byrne Drugstore in Blount County, and said, ''I have just driven a $2 million car around the block and then went over and voted we ought to have 100,000 of them by a particular year,'' I think they would think I had gotten a little carried away with my good idea.

The PRESIDING OFFICER. The Senator from North Dakota.

Mr. DORGAN. Mr. President, I shall not carry this much further either because there is much we agree on. But let me just say to the folks at the Byrne Drugstore, a drugstore I have not had the pleasure of visiting, my guess is, at Byrne Drugstore, if you told the folks sitting around the cracker barrel there—if they have a cracker barrel—in talking about life that we are going to give $2 billion plus to the Department of Energy, and we would just like them to use it as best they can, we really have not told them what we aspire to have happen in terms of goals or timetables and, what do you think of that, my guess is they would say: They are going to send their great-grandchildren back to you to say, ''We have not reached any conclusions yet.''

My guess is, the folks at Byrne Drug, just as the folks playing pinochle in my hometown's little bar, would probably say: If you are going to give the folks over there in that big bureaucracy some money, you might ought to give them a plan in terms of what you might want to accomplish with that money because they will find a way to spend it if you don't give them some sort of plan. They will tell you the money is all gone, but they really don't have a product yet.

There are plenty of examples, of course, of that. But my own view is, if we are going to give the Department of Energy money—and we must because, as the Senator from Tennessee knows, we cannot convert to a hydrogen-based fuel cell economy without public policy support. You have to, after all, have a complete infrastructure change in this country, so that in the future, if we are driving mostly hydrogen fuel cell cars, you are not pulling up to a pump that pumps regular gasoline, you are pulling up to a pump that pumps hydrogen fuel.

The question is, as I indicated before, where do we produce the hydrogen? How do we transport the hydrogen? How do we store the hydrogen? What is the infrastructure for dispensing the hydrogen at fuel stations across the country? All of that is important. And all of that is a function of public policy. The private sector cannot by itself do that. That is why the public sector lays the groundwork for it. It is like building the roads. We don't have General Motors building roads in this country. We build roads, and they build cars which you drive on the roads.

We create the public policy by which we will move toward a hydrogen fuel cell policy. It is what the President believes we ought to do. It is what I believe we ought to do. The Senator from Tennessee and the Senator from New Mexico believe we ought to do that. So as we do that, the question is: In pursuit of public policy, when we provide the Department of Energy with $3 billion plus, should we say to them: ''Here is $3 billion plus. You folks—you good men and women at the Department of Energy—use it as best you can, and try to give us some idea of what you might accomplish with it'' or should we say to these people in the large, vast bureaucracy here: ''Here is $3 billion plus, and what we want you to do is the following. Our goal, our aspiration, what we strive to achieve for the country is the following''? I think that is a much better approach because, I guarantee you, we will provide that $3.3 billion, and at the end that money will be spent.

I have not ever, I guess, seen a Federal agency that has failed to spend the money. They do pretty well at that. But when they spend the money, and it is gone, the question is, Will this country have moved beyond where we are today in energy policy? Will we have achieved the result we wanted? Will the President have advanced the issues he portrayed so well in his State of the Union Address? I guess my answer to that is, I do not think so.

I come back finally to this point—and I will have to leave the floor but make this my last word—I fail to see any downside at all to putting in these targets. Again, this is not some wild guess.

I go back to the Nissan example. The chairman of Nissan does not go to the board of directors aspiring to spend $800 million, and say, ''By the way, I have a wild guess, and I want you to authorize my spending $800 million on it.''

This is not a wild guess. The private sector does not believe it is. I do not believe it is. President Bush does not. I think most of us understand this is a new, big, bold direction. We can do this the old way, giving the bureaucracy some money and hoping it turns out or we can do this a different way, saying: Here is what we aspire to achieve as a country. Here are the targets. Here are the timetables. Let's get about the business of doing this.

If we, in fact, want our children and their children to be able to drive hydrogen fuel cell cars, then that is not going to happen because we let it happen; it is going to happen because in the private sector and in the public sector we are taking the steps that can make this happen.

Having said that, I have enjoyed our discussion. Again, I have great respect for the Senator from Tennessee. I think the work he has done in the bill is excellent. I hope in the intervening hours or days before we vote on this proposal that I will be able to garner his support for this very minor, very small adjustment to a piece of legislation that is not a mandate but that, in fact, is a commonsense approach in terms of how we ought to spend this money and what we ought to expect the taxpayers to get for this money.

Mr. President, I yield the floor.

The PRESIDING OFFICER. The Senator from Tennessee.

Mr. ALEXANDER. Mr. President, I thank the Senator. I thank him for his amendment. I know he is leaving, and I will not take advantage of that by continuing the debate. I have had a chance to say almost all I want to say.

The president of Nissan is a good example, actually. He has gone before his board and said he wants to spend $800 million. I do not think he went before the board and said he wanted to have 100,000 Nissan cars and trucks on the road in 2010 whether they worked and no matter how much they cost. That is the difference here.

I respectfully suggest there is a blueprint in this legislation, much of it provided by the Senator from North Dakota himself. The President's blueprint includes research on hydrogen-powered engines. That is what the $1.3 billion in research is for—research on the production of hydrogen fuel cells, et cetera, research on the transportation and delivery of hydrogen via pipelines and fueling stations, research on how to store hydrogen better and safer, on additional research on the fuel cell engine.

Because of the Senator from North Dakota and others, there is a blueprint for various demonstration programs, which I mentioned earlier—the vehicle demonstration program for Government and nonprofit agencies, the stationary fuel cell demonstration program, hydrogen car and fuel cell demonstration programs in national parks,

the Centers of Excellence at the university. Those are very specific proposals.

So I respectfully suggest we have a good bill. We have a broad bipartisan consensus that we have a bold vision, and yet with unproven technology it is not wise for us in the Government to try to guess just how many of those cars there might be but to encourage it and let those who make the cars do it as rapidly as possible and use their talents to persuade consumers to buy the cars.

I yield the floor.

The PRESIDING OFFICER. The Senator from New Hampshire.

Mr. SUNUNU. Mr. President, I join with my colleague, the Senator from Tennessee, in the concerns he has expressed regarding this amendment. I am intrigued and as interested as any Member of the Senate, including the Senator from North Dakota, in this new technology, the potential to use hydrogen-based fuel cells for power storage, energy storage, and the impact that can have on our automotive industry.

There are, and ought to be, concerns with an amendment that attempts to set a specific target for using such a future technology by a specific date. I remember some 10 years ago being told that everyone in America would be watching a high-definition TV by 1995; 1996 at the absolute latest. That was a technology prediction regarding television, something with which I think every American is quite familiar. We couldn't even get that future scenario right. To suggest that we know the future of fuel cell technology or even the automotive industry 10—and I think as this amendment goes almost 20—years from today is an enormous mistake. It is a mistake for a couple of reasons.

First, as the Senator from Tennessee pointed out, the current cost of these vehicles is $2 million or so, wildly out of the reach of anyone in the country who would be using these vehicles on a day-to-day basis. The private sector is putting a lot of money into this area. That is another reason to try to strike some balance in the bill. But even more basically, despite the fact that the Senator from North Dakota points out that this is just a target, what it does is suggest that a target for this technology is somehow better or more important than a target for any other technology.

What about solar power? What about photovoltaics? What about hybrid combustion technology? The highest fuel efficiency cars out there today often use a combination of electricity and traditional gasoline combustion engines to try to get their fuel efficiency up to 60, 70, 80 miles per gallon. There is certainly tremendous potential there if it can be made cost effective for the average consumer to immediately begin saving energy for our country and for the world sooner rather than later.

We should not prejudge which technologies will win out in a competition of ideas, a competition of cost or a competition for consumer interest in the marketplace. This amendment does just that. It tries to predict where the future will take us rather than trying to create a level playing field where different ideas can compete. Certainly money will be put into a lot of leading edge technologies, fundamental technologies regarding energy, and the Senator from Tennessee listed a lot of those. I don't think we should try to predict which ones will make the greatest impact in the automotive industry or in any other industry.

While I am as interested as the Senator from North Dakota in this new technology—I believe it may well prove to be a very important source of energy storage in our future—I think it would be a mistake to try to prescribe exactly how it needs to be implemented on behalf of the automotive industry and the American people.

I yield the floor.

The PRESIDING OFFICER. The Senator from Tennessee.

Mr. ALEXANDER. Mr. President, I have one short reaction to the comment of the Senator from New Hampshire. I will have nothing further to say on the amendment.

The Senator from New Hampshire reminds me of an experience I had in 1980, discussing the idea of predicting a new technology. I hope my friend Fred Smith, chairman and chief executive of Federal Express, will not mind my using him as an example. All this is public information. In the early 1980s, although it is hard to recognize this today, no one knew what to do with the fax. They didn't know what would be the future of the fax machine. There were those who were saying it would revolutionize communications as much as the fuel cell might revolutionize the automobile.

Mr. Smith, since he was in the business of delivering overnight packages, had to think about what the fax machine might do to Federal Express. He thought about it, and he came to this conclusion: His conclusion was that probably by the end of the 1980s, all Americans would go down to the street corner and find a Fed Ex fax machine and they would use the Fed Ex fax machine on their street corner to send a fax to their friends wherever in the world they might want to do that. That was his vision of what might happen with that new technology.

Well, we have seen what has happened since then. People didn't go down to the street corner and send a fax to their friend. Everybody has a fax in his or her office. Many people have them in their homes. They became personal faxes. Mr. Smith was wrong about that. Fed Ex lost a few hundred millions dollars. Fortunately for Tennessee, he had other great ideas, and Fed Ex is our leading employer in Tennessee today because of his entrepreneurial spirit.

But what if the Congress had gotten excited and said: Fred Smith has a great idea. The fax is a great invention and has an unlimited future. Let's pass a law saying that the Senate, having heard about the fax, hereby decrees that by the year 1990, there shall be a fax on 100,000 street corners in America and by 1992, there will be 300,000 faxes on street corners. All those faxes would be in the wrong places because the Senate, with respect, would not have known enough about the future to know what it was talking about. It was right about its vision of the fax. It was wrong about how far that might work; Fed Ex was at that time.

The analogy is pretty good here as well. We have a broad consensus on our excitement about the hydrogen car fuel cell and what it might do, not just for the automobile but throughout our economy. It is part of a balanced approach to toward energy. It could make the air cleaner and reduce our dependence on foreign oil. We are recommending $3 billion to stimulate precommercial research on that. But let's not put ourselves, in the Congress, in the position of making the same kind of mistake we might have made 20 years ago if we had passed a law suggesting we have 100,000 fax machines on the street corners of America.

I yield the floor and suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

Mr. CRAIG. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER (Mr. SUNUNU). Without objection, it is so ordered.

Mr. CRAIG. Mr. President, we are beginning this week again debating a national energy policy for our country, an issue whose time clearly has come, an issue that should have been resolved well over a year ago, but because of the difficulties and differences of approach, that was an impossible resolution.

I will never forget the day I met in our majority leader's office with the then-elect President George Bush. He had not yet taken the oath of office. He was not yet our President. While he talked about a lot of his campaign promises and the priorities he would bring with his leadership in the Presidency, he said at that time—and honored it immediately when he became President—first and foremost for this country was the desperate need for a national energy policy.

He, of course, upon becoming President, assigned Vice President DICK CHENEY to build a task force and make recommendations to Congress, proposals that should be contained within a national energy policy for our country.

Let's remember, it was not a decade ago. It was not 30 years ago. It was just a few years ago that our President was reacting to what had gone on in California with brownouts, blackouts, and a frustrated population, and a very

concerned economy that no longer were we the masters of our own energy fate; that somehow we had become increasingly dependent on foreign countries for hydrocarbons, or oil, and even within our own structures of systems of delivery and interconnection of electricity and pipelines for gas we were no longer as independent, strong, and self-reliant as we had been; that some while over the course of the nineties, as our economy grew, we were not replacing or building new infrastructure to serve that economy, we were simply relying on the surplus and the old infrastructure that it delivered for that energy. And all of that was true.

The President made his proposals. We crafted a policy, and when the majority in the Senate changed, the Energy Committee was shut down and a new bill was crafted in the office of the then majority leader, TOM DASCHLE. The bill came to the floor. We had the debate. It ultimately got into conference, but we could not produce a final product for our President. The differences between our parties and our interests were too great.

This year the Energy Committee, under the leadership of PETE DOMENICI, in a bipartisan way, held the hearings, held the markups, and what we have before us today is that legislation, a bill that is bipartisan, that has a broad range of interests in it, and really serves what I call the market-basket approach to energy, not that we have decided one source of energy is going to be the future of our country. We have learned differently about all of that in the last decade or two.

There are multiple sources and there are different markets and different economies that demand different kinds of energy. Clearly, to advance electrical production in this country from a coal-fired base, we have clean coal technology built within this bill so that we can build future coal plants for electrical production that are less emitting and cleaner.

Within the bill, there is a hydro relicensing provision that will allow us to relicense the hundreds of hydro facilities that now serve impoundments on our river systems, and do so in a much more environmentally sound way that will become more fish friendly but will still allow us to maintain that very clean base of electrical energy known as hydro.

It is very important, where I come from and where the Presiding Officer comes from, that these facilities remain productive and, at the same time, as we relicense them, that they can be retrofitted to meet the demands of a new attitude, a new understanding of the management of our river systems.

In this bill also are the underpinnings of the hydrogen economy that could in the future fuel the transportation needs of our country. The Dorgan amendment that is before us today deals with those goals about which we talk. We have been investing as a country for some time in hydrogen fuel cell technology.

About 2½ or 3 years ago, I was at Dearborn, MI, at the Ford engineering facilities and test track. While I was there, I drove a new hydrogen fuel cell car. It was a car about the size of a Ford Taurus. It had a hydrogen fuel cell within it that powered electric motors on all four tires. It was a marvelous, quietly running car. I got in, sat down, turned on the key, and nothing happened except the dashboard lit up, and pretty soon the dashboard said: Go. I stepped down on the accelerator, and away I went. There was a small whirring sound as the hydrogen fuel cell generated fuel that produced electricity that sent it out to the electrical motors on each one of these four tires.

When I was out on the test track with the engineer, he said: Pick it up; speed it up a little bit. It had been raining, and as I went around one corner of the test track, I slipped a little bit, and he suggested rather sheepishly that we probably ought to slow down. I was willing to do that in his car, his baby. He pioneered and helped develop this car. He said there is another reason besides safety to slow this car down. This car is worth about $6.5 million, and they did not want to lose that very expensive automobile. I did not realize at that time I was driving probably one of the most expensive automobiles ever built. It was a prototype. It was obviously not an assembly-line vehicle.

What I drove that day convinced me that in the future, if we choose to pursue it, we clearly can have, in part, not in toto, a hydrogen-based transportation fuel system in our country.

Is, therefore, the Dorgan approach the right approach at this time? Should we start making it mandatory to set targets that are absolute or need to be met? I question that, and I do so most sincerely because I want to move us and our knowledge base and invest in a hydrogen base.

Where do we get the hydrogen and how does it get delivered? Do we forget that gas station on each corner of every community did not just happen, that it took years and billions of dollars' worth of investment to develop the delivery system we have today by a myriad of companies investing their stockholder money and their profits in a delivery system? That is exactly what it took. That did not happen by accident.

To automatically suggest we are now going to have a hydrogen-based transportation system and that all of these new hydrogen refueling stations will occur overnight is a phenomenal stretch. That is the delivery system, and that delivery system alone would cost billions of dollars and, clearly, as we transition, if we do, into a hydrogen-based transportation system, it will take time and cost a lot of money.

Where do we get the hydrogen? Today we tend to get hydrogen from a hydrogen-rich supply—natural gas. But natural gas today is increasingly in less supply and more demand because of the Clean Air Act and because we decided years ago that if we were going to put additional electrical production in line, it could be a gas-fired electric turbine. It met our clean air standards.

All of a sudden, we began to consume a fuel that was once in surplus and is now becoming scarce. Some 3 months ago, its price spiked to over 260 percent of the average price. Should we be directing ourselves toward that, and should we be setting targets without an alternative supply of hydrogen? In other words, that is why, if you are going to set targets and limitations and goals—and maybe there is a day when we do—it is my argument and my belief that the Dorgan amendment is substantially premature with regard to that point. Let me tell my colleagues why.

In the overall parent bill we are debating, the national energy policy itself, there is a title that in time will begin to produce for this country an ample hydrogen fuel base and not use natural gas as its source. It is to develop, along with the new, safe, what we call passive generation for a nuclear reactor, an electrolysis system where water can be effectively converted into hydrogen. It is a technology that we know is doable. What is most important is that it is doable at much less cost and no demand on our natural gas base.

Why would it be at less cost, especially if it is allowed to be facilitated and built within a nuclear reactor?

Nuclear reactors operate best if they are operated at a constant load, but electricity is not used in a constant pattern, whether it is morning and one is cooking breakfast or it is a hot day and one is using air-conditioning or a cold day and using heat. All of that is variable within a range and within a market. So there are up and down supplies. There is peak load and there is soft load, or less load. The beauty of tying to a nuclear reactor a hydrogen electrolysis system as we believe to be engineeringly and technically very possible today—it is why within this bill we authorized the development of a prototype—is the reactor can then be run at a constant load where it performs for the least amount of money, and when it is peaking for electrical demand purposes, the power is shifted over there. When those demand loads come down, the power is shifted over to hydrogen gas production, and it is alternated back and forth from electrolysis to online transmission, from electrolysis to online transmission, based on the demand load at the time, while the reactor is operating constantly.

What I would therefore say about goals and targets within an area of fuel cell technology today, and supply, is let's get the supply at least started in place and the technologies to develop that supply proven effectively before we begin to put targets on governmental fleets or other fleets as we begin to cause the transportation of our economy to shift toward hydrogen.

Having said all of that, the oil industry, oil per se, for the foreseeable future will continue to fuel a very large part of our transportation needs in this country. That is a reality. It is something that we probably ought not force to cause to be different, but we ought to create and put in place the technologies that allow the transfer, that allow the movement, and that ultimately allow the capitalization of a new form of energy that we believe is hydrogen, and we believe this works.

The chairman of the full authorizing committee, who is the author of this legislation, is in the Chamber, so I yield to the Senator from New Mexico, Mr. DOMENICI.

Mr. DOMENICI. I thank the Senator for yielding.

First, please excuse my voice. I have somewhat of a cold. I say to the occupant of the chair, it will be in good form tomorrow. Do not worry. Having said that, I compliment the Senator from Idaho on the wonderful explanation he has given today on the future of hydrogen in the American economy. I also thank Senator DORGAN. Not only this year but before, he has been a strong proponent of moving ahead as rapidly as we can with the hydrogen alternative, the fuel cell, and ultimately an automobile in our future.

Today, Senator DORGAN offered an amendment which will now line itself up with a couple of others and perhaps be the third amendment voted on tomorrow. For that, I thank him because he brought an amendment to the floor which means we are moving.

I ask the Senator a question: The hydrogen car which I rode around in, as did the Senator, does the Senator remember how much they told us it cost?

Mr. CRAIG. Six point five million dollars.

Mr. DOMENICI. I do not say that to in any way belittle anybody, but the point of it is, they wanted to show us what it would look like, what the storage capacity or needs on the rear of this vehicle might be, which meant somebody would have some idea how to refuel it later on, and to put all of that together they spent 6 million-plus dollars.

The point of it is, S. 14, which I am very proud of, is an effort to produce a myriad of energies for America so that there will be a choice. It also says when it comes to hydrogen, let's pursue it with vigor. Let's get on with the research. Let's get the fuel cells moving ahead as rapidly as possible. And, yes, for the first time we had a President say go ahead and authorize a lot of money, $1.6 billion, to enter into partnership arrangements with the automobile manufacturers to see if our science and their technology could get married up with their money and taxpayers' money to pursue this with some degree of vigor.

I do not think I am trying to make a mountain out of a molehill in terms of the issue, but to now say, in the midst of all of this, to prove we are serious about this let's go ahead and mandate a purchase of these automobiles by a date certain it seems to me to be a bit premature. I do not think we need it to prove our worth, to prove our valor, to prove that we really want to move ahead with vigor. Quite to the contrary, I think it might indicate that we really are a little bit ahead of ourselves.

So when the time comes tomorrow, after discussing it with Senators such as Senator CRAIG, the Senator from New Mexico will decide whether we will have just a straight yes or no vote or whether we should ask the Senate to table what we consider to be a rather inappropriate amendment because it is too early.

As far as I know, there is no other business today. We are waiting around for the Dorgan amendment to get itself lined up with two amendments that are scheduled for tomorrow. There is still some significant debate on the motion to strike that concerns itself with nuclear power and on the so-called authority to the Indian tribes for the development of their energy. There are two amendments. One is Senator CAMPBELL's amendment, and one is Senator BINGAMAN's amendment. One is a first degree, and a second degree. Those will be debated, and then sometime tomorrow, hopefully, we can prove to the Senate that we are moving ahead with three votes.

Mr. CRAIG. Good.

Mr. DOMENICI. I am going to say now to other Senators who may have amendments, whatever they may be, the majority leader has been pretty fair with us. I am not so sure we have been quite that fair with him in that we have not produced enough amendments, although we are getting there now. We are starting to get a few of the hot button items, and maybe after tomorrow we might be at a point where others will come forth. I am asking now that Senators and their staffs, who consider themselves to have amendment potential on this bill, they should start to get ready. I am aware there are Senators who have amendments. We know the title of their amendments, but the amendments are not ready yet. That is 2 weeks now, not solid but more or less we have had 2 weeks.

So we ask now that Senators reconsider getting on with this so they can be helpful as we move ahead, and then with the minority soon we will begin to ask for some times. Maybe by tomorrow we can start asking for a time certain for the production of relevant amendments. That would be my hope, I say to my friend Senator CRAIG and the occupant of the chair, the distinguished Senator, Mr. SUNUNU.

I yield the floor.

The PRESIDING OFFICER. The Senator from Idaho.

Mr. CRAIG. I thank the senior Senator from New Mexico for what really has become a very thoughtful and methodical approach toward resolving a national energy debate, and bringing us legislation that not all parties agree on but clearly is that abundant market basket full of ideas and concepts and realities, we believe, that bring this country once again toward energy self-sufficiency, and our ability to stand on our feet and be proud that we are what we are as a country.

Our great strength has always been in our abundance of relatively inexpensive energy. It has driven our economy. It powers us up as a great country. Without doubt, it is what lights up the computer screens of our country and has made us the leading high-tech manufacturer in the world.

I was in San Jose, CA, this weekend speaking to a group. There were about 50 CEOs from high-tech companies from the valley, the heart of the Silicon Valley. We call it Silicon Valley West because right here at the beltway in northern Virginia is what I call Silicon Valley East, the heart and home of the Internet systems and internet companies. While I was talking about technology, they wanted to know about energy. In that valley they demand a high quality of electrical generation, constant power loads to feed their manufacturing facilities. They are very frustrated because of the problems California has had, which has been in part a policy issue and in part a transmission problem.

All of those problems are embodied in our legislation. That is why it is important we resolve and get to our President's desk a bill so we can help the energy segment of our economy get on its feet and get moving again for the sake of all.

I have said several times, and I think most agree, this legislation, S. 14, has more new jobs to be created in the next 4 to 5 years than the stimulus package. While the stimulus package was critically important, and I voted for it and it already appears to be turning on the economy across this country, the long-term infrastructure investment for the energy industries of our country that will fuel our homes and light up our computer screens in the future is embodied in this bill. That is why it becomes so important for everyone.

Let me step back to hydrogen for a moment. I have no difficulty with the Senator from North Dakota proposing legislation that said agencies ought to submit annual plans and reports that look at transition and talk about and build a system or a mechanism for transition to a hydrogen economy as these technologies develop, as these new production capabilities come on line. That would be a right and appropriate thing to do in light of where the technology of this industry is.

I have visited with hydrogen fuel cell engineers, scientists who study this area. They are telling me it would be very hard to measure. They are suggesting we need to prove the worth of this technology to the American consumer—"worth" meaning a sense of safety. A lot of folks are wondering, Is

a hydrogen car going to be safe? They fail to recognize that a gas-powered car that they assume is safe sometimes is not as safe as we think it is. There have been fires and explosions. Is a hydrogen car safe? We believe they can be manufactured to be every bit as safe as a gas-powered car, if not safer.

But how do you prove it? One of the ways is to get hydrogen used in the economy before it is transitioned to transportation. How does that happen? The development of hydrogen fuel cells that actually fuel homes, manufacturing plants, other facilities that are perhaps less adjacent to or isolated from transmission capability. To have a hydrogen fuel cell that can actually produce enough power for a factory is not unreasonable to assume, or a single home in a rural setting.

Once that consumerism begins to develop in this country and there is a general understanding that hydrogen is a part of our energy economy, the reality of transition to a transportation base is probably even greater. Maybe they go equally together. But I know the scientists and the engineers are thinking one or the other or both; one before the other. Part of it all comes together at some point. I believe it can.

I, along with Senator DOMENICI and others who study energy sources for our country as members of the Energy and Natural Resources Committee, have spent a long time looking at this as a concept to be explored. As the Senator from New Mexico mentioned, we are committing a lot of public resources to this. We ought to. It is clean. What happens to the exhaust system of a hydrogen-powered fuel cell? No emission, except a drop of water. So there is no emission of greenhouse gases into the atmosphere.

Interestingly enough, when you use natural gas to create hydrogen, the process creates an emissions problem. When you use electrolysis of water to create hydrogen, you do not. So there is another reason to examine and build on the technology of electrolysis. We think the natural blend, the hand in glove, if you will, the synergy that can be created by new passive nuclear reactors that are safe, cool in operation, automatic shutdowns, but can do the constant load, that can create the economies of optimum operation and therefore at great cost saving to the consumer, is a technology that ought to be developed and is embodied within S. 14.

I will now, therefore, have to oppose the Dorgan amendment for all of those reasons. It is not time to require the acquisition in the market. It is time to push the technology. It is time to ask for the reports. It is time for this Senate to be able to understand progress and growth and development in this area and the likelihood of a time down the road when more and more of our economy will actually be using hydrogen as an energy base.

It is with that I come to the floor to debate this amendment. I hope as we get to it tomorrow and a vote in the Senate, as the chairman has spoken to, that Senators will consider the reality that this is not the time for targets. This is not the time for hard goals. This is a time for pushing the technology, building on it, encouraging the private sector to marry up with the public sector, to advance the technology, and it may well be time for the Department of Energy to be required to report and analyze on an annual basis for our sake, for those who make public policy, the reality of these technologies.

I yield the floor and suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The legislative clerk proceeded to call the roll.

Mr. BINGAMAN. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. BINGAMAN. Mr. President, I ask unanimous consent that the pending amendment be temporarily set aside.

The PRESIDING OFFICER. Is there objection?

Without objection, it is so ordered.

AMENDMENT NO. 867

Mr. BINGAMAN. Mr. President, I send an amendment to the desk.

The PRESIDING OFFICER. The clerk will report.

The assistant legislative clerk read as follows:

The Senator from New Mexico [Mr. BINGAMAN] proposes an amendment numbered 867.

Mr. BINGAMAN. Mr. President, I ask unanimous consent that reading of the amendment be dispensed with.

The PRESIDING OFFICER. Without objection, it is so ordered.

The amendment is as follows:

(Purpose: To ensure continued availability of natural gas)

On page 278, after line 8, insert the following:

''(h) TRIENNIAL REPORT ON EFFECT ON NATURAL GAS DEMAND.—Not later than 3 years after the date of enactment of this Act, and every three years thereafter, the Secretary shall submit to Congress an assessment of the effect of increased use of hydrogen, as a result of the programs in subsections (a) and (b), on demand for natural gas.''.

On page 291, strike line 22 and all that follows through page 292, line 8 and insert the following:

''(b) CONTENTS.—At a minimum, each plan shall contain—

''(1) a description of programs under the agency's control in which the use of hydrogen or fuel cells could benefit the operation of the agency, assist in the implementation of the agency's regulatory functions, or enhance the agency's mission;

''(2) a description of any agency management practices, procurement policies, regulations, policies, or guidelines that may inhibit the agency's transitions to the use of fuel cells and hydrogen as an energy source; and

''(3) an assessment of the effect of increased use of hydrogen by the agency, including increased use through programs under section 303(b) of the Energy Policy Act of 1992, as amended by this Act, or section 824 of this Act, on demand for natural gas.''.

Mr. BINGAMAN. Mr. President, this amendment addresses the fact that most hydrogen today is manufactured from natural gas. As far as we can tell, this is likely to remain the case as we make any transition to a hydrogen-based economy. This dependence on natural gas may prove to be a real Achilles' heel for the future development of these promising technologies we have been discussing on the Senate floor today related to hydrogen.

The lead story in today's Financial Times has a headline entitled ''U.S. Faces Natural Gas Shortage.'' I believe Chairman Greenspan has also been testifying about this very important issue today in the House of Representatives. This is not a new story. There are a number of us who have been sounding the alarm for a long time on this issue and the need for effective action to address it. It is a serious situation. It has been in the making for several years, and it will not be easy for us to reverse this situation.

As an example of this concern, on May 27 there were 29 other Senators who joined me in a letter to Secretary Abraham. In that letter we expressed concern about the current and continued high natural gas prices and their effects on consumers and industries that rely on natural gas. We strongly urged the Secretary of Energy to look to conservation, energy efficiency, and fuel switching as important near-term steps that can be taken to alleviate what is shaping up as a critical problem, perhaps this coming winter.

This past Friday, Secretary Abraham wrote back, agreeing with the analysis of the problem and agreeing that—this is a quote from his letter—''the natural gas industry has been strongly supportive of this conservation message. . . .''

Mr. President, I ask unanimous consent that the letter sent by 30 Senators to the Secretary of Energy and the Secretary of Energy's response be printed in the RECORD following my remarks.

The PRESIDING OFFICER. Without objection, it is so ordered.

(See exhibit 1.)

Mr. BINGAMAN. Mr. President, it would be ironic if, in the name of increasing the diffusion of hydrogen-based energy technologies into the U.S. economy, we wound up exacerbating the long-term problem we have with the natural gas supply. To make sure we maintain the awareness of this linkage, and the potential downside that could arise because of it, this amendment I have sent to the desk would make two changes in the underlying hydrogen title of the bill.

First, the amendment would require a triennial report from the Secretary of Energy with an assessment of how the various programs in the bill to increase the number of hydrogen vehicles and the use of hydrogen as a fuel were affecting our long-term demands for natural gas. If other sources for the manufacture of hydrogen were coming

to the fore, such as renewable sources of electricity, and the increased dependence on natural gas was not looming as a big problem, then fine. But we would be looking at this natural gas issue on a periodic basis at least each 3 years as hydrogen technologies move forward.

The second change the amendment would make would be to add a similar analysis to a report from Federal agencies that is already required in the bill on their own future use of hydrogen. It would require Federal agencies to assess how their own increased use of hydrogen would affect natural gas demand.

Obviously, all of us want hydrogen to be better developed as a technological option. We all, I believe, also want to make sure we do not have unwanted consequences or unwanted impacts on our strained natural gas picture going forward. This amendment will help ensure that we keep our eyes open and we keep focused on this important potential problem as we move toward a hydrogen-based economy.

Mr. President, I think this amendment would strengthen the bill, and I hope it is acceptable and can be agreed to.

I yield the floor.

EXHIBIT 1

UNITED STATES SENATE,
Washington, DC, May 27, 2003.

Hon. SPENCER ABRAHAM,
Secretary, Department of Energy, Washington, DC.

DEAR SECRETARY ABRAHAM: We are writing to express our concern about continued high natural gas prices, the impact on industries that rely on natural gas for manufacturing, and the possibility of severe price spikes recurring later this year. In your recent address to the National Petroleum Council, you correctly pointed out that the amount of natural gas in storage is unusually low and that injection rates must increase dramatically in order to fill storage to levels sufficient to meet anticipated demand this year. With natural gas prices twice as high as they were last year and the increased demand for electricity expected this summer, market fundamentals are not encouraging for robust storage refill rates.

We commend you for focusing on the near term challenges we face with respect to natural gas and for calling an emergency meeting of the National Petroleum Council next month to identify actions that can be taken immediately to ease short-term supply constraints. The expertise of the NPC's members in the production, transmission and distribution of natural gas should be very helpful. Increased natural gas supplies are needed of course and, in fact, drilling is up thirty percent this year. But significant new gas supplies are not likely to come on line in the near term.

Energy efficiency and conservation, as well as fuel switching, are more likely to make a difference in natural gas markets this summer and next winter. Analysis of the successful efforts of California to reduce electricity consumption in 2001 demonstrated that efficiency and conservation were the fastest and least costly solutions available. We urge you to cast a wider net for recommendations on natural gas including meeting with Governors, state and federal regulators, industrial and commercial gas consumers, electric utilities and independent generators, and experts in efficiency and conservation.

We look forward to working with you to address this critical issue.

Sincerely,

Tom Daschle, Tim Johnson, Jay Rockefeller, Russell D. Feingold, Harry Reid, Joseph Lieberman, Jeff Bingaman, Tom Carper, Frank R. Lautenberg, Ron Wyden, Debbie Stabenow, Maria Cantwell, Mary L. Landrieu, Jon S. Corzine, Jack Reed, Charles Schumer, Evan Bayh, Daniel K. Inouye, Dianne Feinstein, Barbara Boxer, Dick Durbin, Hillary Rodham Clinton, Patrick Leahy, John F. Kerry, Paul Sarbanes, Barbara A. Mikulski, Ted Kennedy, Carl Levin, Daniel K. Akaka, Patty Murray.

THE SECRETARY OF ENERGY,
Washington, DC, June 6, 2003.

Hon. JEFF BINGAMAN,
U.S. Senate,
Washington, DC.

DEAR SENATOR BINGAMAN: Thank you for your May 27, 2003, letter expressing concern about continued high natural gas prices and their impact on consumers and industries that rely on natural gas.

The Administration shares your concern—and it is for this reason that I called for a Natural Gas Summit on June 26, 2003, which your letter referenced. In addition to including members of our National Petroleum Council, the Summit will also bring together State and Federal regulators; industrial, residential, and commercial gas consumers; electric utilities and independent generators; along with experts in energy efficiency and conservation to discuss and develop recommendations relating to the future of the natural gas markets.

Based on the Department's analysis, we concur with the conclusion advanced in your letter that over the next 12 to 18 months there are only limited opportunities to increase supply; and that, therefore, the emphasis must be on conservation, energy efficiency, and fuel switching. That is why the speakers and attendees at the Summit will be substantially consumer focused. I would note, however, that the feedback we have been getting from the natural gas industry has been strongly supportive of this conservation message as they are concerned about the long-term effect on the market of these high short-term prices.

In addition to sharing the same opinion regarding the role of conservation, I am pleased that we also are in agreement concerning the need to increase natural gas supplies. Last year, I commissioned a National Petroleum Council study focused on long-term issues that will more directly address supply. This study, to be released in the fall, will include a comprehensive evaluation of future natural gas supply and demand issues. We will, of course, share the results of that study upon its completion.

I appreciate your interest in the Natural Gas Summit and look forward to working with you to address these important issues.

If you have any questions please feel free to contact me or Ms. Kelly S. Lugar, Deputy Assistant Secretary for Congressional and Intergovernmental Affairs, at (202) 586–5450.

Sincerely,

SPENCER ABRAHAM.

The PRESIDING OFFICER. The senior Senator from New Mexico.

Mr. DOMENICI. Mr. President, we have reviewed the amendment. We have no objection to the studies provided for in the amendment. We think they will be worthwhile and helpful, so we have no objection.

The PRESIDING OFFICER. Is there further debate on the amendment?

If not, the question is on agreeing to the amendment.

The amendment (No. 867) was agreed to.

Mr. DOMENICI. I move to reconsider the vote.

Mr. BINGAMAN. I move to lay that motion on the table.

The motion to lay on the table was agreed to.

Mr. DOMENICI. Mr. President, I ask Senator BINGAMAN, have you finished with that issue?

Mr. BINGAMAN. Yes, I have.

The PRESIDING OFFICER. The senior Senator from New Mexico.

Mr. DOMENICI. Mr. President, I ask unanimous consent to be permitted to proceed as in morning business for no longer than 7 minutes.

The PRESIDING OFFICER. Is there objection?

Without objection, it is so ordered.

Mr. DOMENICI. Mr. President, I ask unanimous consent that I be permitted to proceed as in morning business starting in 5 minutes and not to exceed 10 minutes.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. DOMENICI. I yield the floor.

Now, Mr. President, I ask unanimous consent that the 5 minutes I asked to transpire before the time started be waived and that I be able to proceed with my 7 minutes.

The PRESIDING OFFICER. Without objection, it is so ordered.

The Senator is recognized as in morning business.

(The remarks of Mr. DOMENICI pertaining to the introduction of S. 1211 are printed in today's RECORD under ''Statements on Introduced Bills and Joint Resolutions.'')

The PRESIDING OFFICER. The Senator from Arizona.

Mr. MCCAIN. Mr. President, I ask unanimous consent to address the Senate as in morning business.

The PRESIDING OFFICER. Without objection, it is so ordered.

(The remarks of Mr. MCCAIN are printed in today's RECORD under ''Morning Business.'')

Mr. MCCAIN. Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The assistant legislative clerk proceeded to call the roll.

Mr. DOMENICI. Mr. President, I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. DOMENICI. Mr. President, I understand, from my parliamentary inquiry, that at 5:15 the Senate resumes executive calendar debate.

The PRESIDING OFFICER (Mr. ENSIGN). In executive session, that is correct.

MORNING BUSINESS

Mr. DOMENICI. I ask unanimous consent that we be in morning business until we go into executive session.