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## Speeches

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# Energy Policy from a Federal Legislative Perspective\*

**Energy Innovation Series and  
Fifth Annual Schultz Lecture  
University of Colorado  
Boulder, Colorado  
Senator Jeff Bingaman\*\*  
October 8, 2012**

I am pleased to be here this evening to present the Fifth Annual Schultz Lecture here at the University of Colorado. I appreciate the invitation of the Law School and the generosity of the Schultz family in supporting this lecture series. I am glad to see and recognize Scott Miller, who was a key member of my staff at the Senate Energy and Natural Resources Committee and who worked on a wide range of issues relating to public lands, forestry, and renewable energy.

The University of Colorado and major nearby research institutions, including the National Renewable Energy Laboratory and the Rocky Mountain Institute, have been at the forefront of thinking and research on clean energy. Your work on a variety of energy policy subjects has had important implications for both government and industry.

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\* This Speech has been edited for print publication and updated with Senator Bingaman's approval.

\*\* Senator Jeff Bingaman is a former U.S. Senator from New Mexico, serving from 1983 to 2012.

## I. THREE BASIC QUESTIONS

Our focus in Washington has been on how the various strands of energy policy can be brought together in a coherent way at the national level.

In trying to define an appropriate national energy policy and the concrete actions that would help us implement such a policy, I would start with the following three questions:

1. What should our national energy goals be?
2. What are the factors that determine whether and how quickly we achieve these goals?
3. What policies should we adopt and what actions should we take to improve our prospects for achieving these goals?

Let me take each of these questions in turn, starting first with the question of national energy goals.

### A. *National Energy Goals*

The following six points summarize what I believe should be the overarching goals of national energy policy.

*Goal 1. We should promote robust domestic production of affordable energy from a diversity of sources.*

The tendency in energy markets and energy policy over the years has been to focus on whatever energy source is topical at the moment and to act as if that one source—whether renewables, coal, natural gas, or nuclear power—is the only option that counts. The reality of our energy system is very different. Our energy consumption is vast. We will need *all* potential energy supply sources to meet our energy needs. Moreover, maintaining diversity among energy supply sources is crucial. We cannot predict the future with certainty. Therefore, we cannot afford to build only one type of energy infrastructure. In energy, diversity of supply is security of supply.

*Goal 2. We should promote efficiency in the transmission, distribution, and end use of energy.*

It is not enough to have a policy that simply focuses on creating energy. We must use the energy we create wisely. That means having effective infrastructures for moving energy to where it is needed, so we do not have to build redundant sources of supply. It also means that we

focus on the most highly efficient end-use technologies for energy, so that we do not waste energy.

*Goal 3. We should ensure that the market structures that establish energy prices and allocate energy supplies are transparent, efficient, and effective.*

There was a time in the 1970s when the government directly set energy prices and allocated energy supplies.<sup>1</sup> That did not work well. Since then, our national energy policy has been to rely on market forces to set prices and allocate supplies. Reliance on market forces to provide good energy outcomes means that we need one important thing. We need to ensure that energy market forces are free from manipulation and operate in an open and transparent way. Otherwise, energy producers and consumers cannot make rational and cost-effective plans.

*Goal 4. We must maintain the appropriate balance between achieving energy policy objectives and environmental objectives.*

Many energy policy issues are intertwined with environmental issues, and vice-versa. To have policies in either area that will stand the test of time, you need to look at both sets of issues together. We must examine our energy policies to see if they have adverse environmental impacts and then adjust to mitigate those impacts. Similarly, we need to examine our environmental policies to see if they might have adverse impacts on our energy system and look for ways to minimize those impacts as well. Broadly speaking, we need to accelerate the transition to a clean energy economy where we maximize both energy and environmental benefits.

*Goal 5. We must maintain our world leadership in energy research, development, and innovation.*

At some point, our ability to implement an energy strategy to achieve any of the preceding four goals will run into a roadblock or some seemingly insoluble problem. That is the point where new science and new technologies come into play. By creating new options for achieving our energy goals, research, development, and innovation play a crucial role in a comprehensive energy policy. Any country that wants to have a world-class energy policy will need to have a world-class innovation system.

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1. See, e.g., *Condor Operating Co. v. Sawhill*, 514 F.2d 351 (Temp. Emer. Ct. App. 1975).

*Final Goal. We need to focus on creating U.S. jobs and realizing the other economic benefits that result from pursuing all of the above goals.*

As we design a comprehensive national energy policy, we ought to look for ways in which that policy can build the general economic strength of the United States. Having a dominant position in innovation means that we have universities and other research institutions that train scientists and engineers who contribute not only to energy issues, but who are capable of innovation in the broader economy. Companies will generally locate their manufacturing operations where they have significant markets, so building strong markets for advanced energy technologies means that we have a greater chance of capturing the high-value manufacturing jobs associated with these technologies.

These six key goals define what ought to be meant, in my view, when people say that they have a comprehensive energy policy. It is not a comprehensive policy when you focus on one resource or one favored strategy. You need to look at the entire architecture that these six goals represent. As the energy policy debate unfolds throughout the next Presidential term, I think that these six goals provide a succinct checklist to judge whether energy proposals are truly comprehensive and sustainable over the long term.

### *B. Success Factors*

Now that I have defined six key attributes of a comprehensive energy policy, I would like to move to my second point. That is, what factors will determine our success in achieving our national energy goals? I would list four obvious types of factors. These factors are:

1. the speed of scientific and technological advancement;
2. market forces and evolution;
3. policies and actions of other nations; and
4. policies that we ourselves adopt and actions that we ourselves take.

Let me start with the speed of scientific and technological advancement. This is a factor that we can influence to a great extent by the investments we make in fundamental and applied research, and the speed with which we encourage new innovations to reach the marketplace through other types of supporting policies. At the same time, new scientific and technological advances do not always operate according to our initial plans. In 1986, scientists discovered high-temperature superconductivity, and it was predicted that we would

shortly thereafter have superconducting wires as a major part of our electric transmission system.<sup>2</sup> Twenty-five years later, progress on that front has come more slowly than we initially thought. On the other hand, we are in the middle of a technological revolution in how we produce natural gas and oil from tight formations like shale. That was a breakthrough that virtually no one in the oil and gas industry saw coming.

Market forces and how markets evolve also play an important role in how we achieve our energy goals. Market forces are the main determinant of the decisions made by utilities, businesses, and consumers in meeting their energy needs.

As figure 1 shows, the price of natural gas has fallen to historically low levels. Forecasts suggest that it will remain at those low levels for a long time. Any number of government policies to counter that market reality will be swimming against the tide.

Figure 1. Natural Gas Spot Prices (Henry Hub).<sup>3</sup>



Probably the most significant market evolution underway is the flat/declining demand for energy in the developed countries, coupled

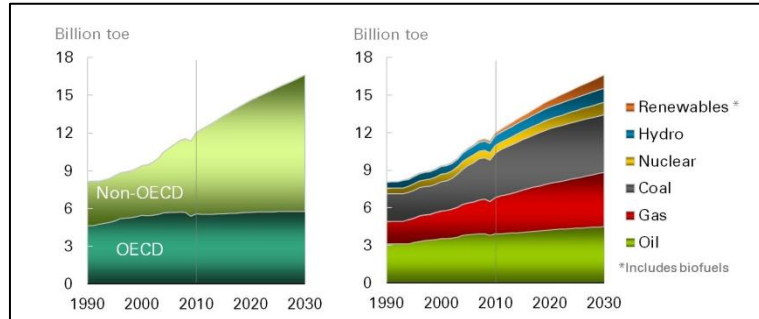
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2. Cf. OFFICE OF TECH. ASSESSMENT, U.S. CONGRESS, OTA-ITE-388, COMMERCIALIZING HIGH-TEMPERATURE SUPERCONDUCTIVITY 6, 155, 159, 163 (1988), available at <http://ota.fas.org/reports/8807.pdf> (noting the media excitement, but questioning the predictions for short-term development of commercial electric transmission applications).

3. *Natural Gas Weekly Update for the Week Ending June 13, 2012*, U.S. ENERGY ADMIN., June 14, 2012, available at [http://www.eia.gov/naturalgas/weekly/archive/2012/06\\_14/index.cfm](http://www.eia.gov/naturalgas/weekly/archive/2012/06_14/index.cfm).

with strongly growing demand in the developing world, as shown in figure 2.<sup>4</sup> This reality in energy markets will dominate energy policy worldwide over the next few decades.

Figure 2. Non-OECD Economies Continue to Drive Consumption Growth.<sup>5</sup>



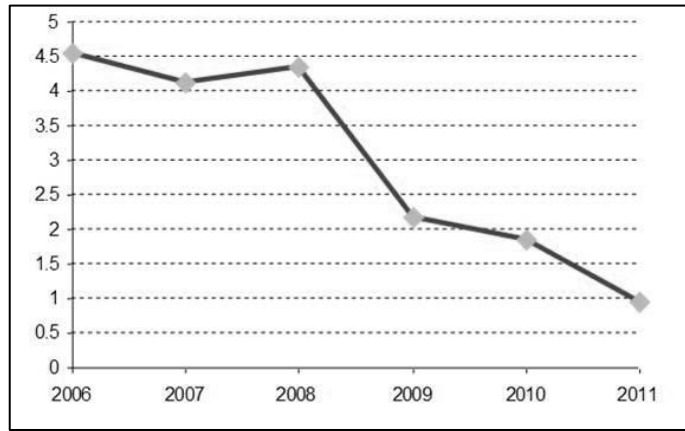
The policies and action of other nations are a third major factor in our ability to achieve our national energy goals. We have seen this effect for the past few decades in the control that the Organization of the Petroleum Exporting Countries (“OPEC”) has generally exerted on oil prices. The benchmark price for oil that OPEC has set has been an important factor in driving demand and technology selection in the transportation sector.

The sharp decline in the price of photovoltaics, as shown in figure 3, due to Chinese policies to greatly expand their manufacture of the key materials and components in solar cells, is another example of how policies in other countries have affected our national energy goals. This development poses a mixed picture for our policies. On the one hand, by making solar panels available at lower prices, it encourages deployment of solar energy power in the United States. On the other hand, there are negative consequences to undermining the financial incentive to manufacture key solar energy equipment in the United States.<sup>6</sup>

4. See U.S. ENERGY INFO. ADMIN., INTERNATIONAL ENERGY OUTLOOK 2011 (2011), available at <http://www.eia.gov/forecasts/ieo/index.cfm>.

5. BP, BP ENERGY OUTLOOK 2030, at 10 (2012), available at [http://www.bp.com/liveassets/bp\\_internet/globalbp/STAGING/global\\_assets/downloads/O/2012\\_2030\\_energy\\_outlook\\_booklet.pdf](http://www.bp.com/liveassets/bp_internet/globalbp/STAGING/global_assets/downloads/O/2012_2030_energy_outlook_booklet.pdf).

6. MICHAELA D. PLATZER, CONG. RESEARCH SERV., R42509, U.S. SOLAR PHOTOVOLTAIC MANUFACTURING: INDUSTRY TRENDS, GLOBAL COMPETITION, FEDERAL SUPPORT 19–20 (2012), available at <http://www.fas.org/sgp/crs/misc/R42509.pdf>.

Figure 3: Chinese c-Si Photovoltaic Module Prices (\$/Watt).<sup>7</sup>

As China, along with other key developing countries such as India, Brazil, and Russia, continue to expand their consumption of energy and development of energy resources, their national policies will have major implications for world energy prices, and thus for our policies as well.

The final, and perhaps most important, factor in achieving our energy goals are the policies that we ourselves adopt and actions that we ourselves take. This encompasses actions such as:

- what we do to address the overarching goals;
- what we do to speed deployment of new technologies;
- what we do to create the needed energy workforce;
- how stable and predictable our policies and market signals are; and
- how we cooperate with other nations in tackling international energy issues and challenges.

### *C. Primary Policy Tools and Challenges in Using Them*

The question of what we do here in the United States to achieve the goals of a comprehensive energy policy is in fact the third major question that I want to cover. In keeping with the title of my talk, I will address this primarily from my vantage point of nearly thirty years in the U.S. Senate.

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7. Morgan Bazilian et al., Re-Considering the Economics of Photovoltaic Power 5 (Bloomberg New Energy Fin., Working Paper 2012), available at <http://www.bnef.com/WhitePapers/download/82> (cost of Chinese c-Si PV modules have fallen from \$4.50/Watt in 2006 to \$1/Watt in 2011).

Most of what Congress does involves exercising one of three powers: the power to spend, the power to tax, or the power to regulate. As regards energy policy, in each of these three areas, Congress has had a long-standing bipartisan consensus about how to proceed that has, to a substantial extent, unraveled over the past few years. Today, we in Congress are having great difficulty coming to agreement on what should be done with each of these powers.

### *1. Spending*

In the case of spending, there once was a consensus in favor of a range of support mechanisms for research, innovation, and deployment. These included direct fiscal support for research and development (“R&D”), use of the federal government’s procurement power to encourage advanced energy technologies such as biofuels, and grants to state and local governments to spur their energy efforts. The consensus also included indirect federal support in the form of loan guarantees for advanced energy technologies.

This consensus was built on the realization that the energy industry, on its own, would not invest sufficiently in R&D for which the benefits could not be captured by just the company performing it. In the energy sector, R&D investments amount to something like 0.3 percent of sales, a very small amount when compared to the pharmaceutical industry, where R&D approaches 19 percent of sales, and computers and electronics, where it is closer to 9 percent.<sup>8</sup> Further, taking a new energy technology to scale in the commercial marketplace involves risks and expenses that cannot be borne by industry alone. This funding gap is known by all of us as the “valley of death.” There was once a consensus that the federal government had a role in addressing that gap, as well.

But, as I have mentioned, this consensus to increase spending on energy-related research, innovation, and deployment is coming apart.

We see it in the stagnation of funding to support these areas and in proposals by some to cut all federal spending, no matter how beneficial, across the board.<sup>9</sup>

We see it in an amendment adopted in the committee-version of the 2012 defense bill, where a majority of the Senate Armed Services

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8. TASK FORCE ON AM. INNOVATION, AMERICAN EXCEPTIONALISM, AMERICAN DECLINE?: RESEARCH, THE KNOWLEDGE ECONOMY, AND THE 21ST CENTURY CHALLENGE 30 (2012), *available at* <http://www.innovationtaskforce.org/docs/Benchmarks%20-%202012.pdf>.

9. *See, e.g.*, John Collins Rudolph, *Clean Energy is Target of Ryan Budget Plan*, N.Y. TIMES (April 6, 2011, 7:11 PM), <http://green.blogs.nytimes.com/2011/04/06/clean-energy-is-a-target-of-ryan-budget-plan/>.



Committee voted to limit the ability of the Department of Defense to purchase biofuels to serve its energy needs, even though biofuels provide enhanced fuel diversity and security benefits to military missions.<sup>10</sup>

And we see it in the political fallout from the Department of Energy (“DOE”) loan to Solyndra, which sends a potent signal that spending through the loan guarantee process that Senator Pete Domenici and I established in the 2005 energy bill is very much out of favor in Congress today. It is a shame that people think that the DOE Loan Guarantee Program is just about one solar panel producer in California. The program is actually the largest source of debt financing for clean energy in the United States, public or private.<sup>11</sup> It has made over \$35 billion in direct loans and loan guarantees, for projects totaling \$55 billion.<sup>12</sup> Just one of those loans, which made possible the construction of the world’s largest solar photovoltaic power plant, resulted in \$1 billion worth of orders to U.S. suppliers last year.<sup>13</sup> Yet, on September 14, 2012, the House of Representatives passed a bill, the so-called “No More Solyndras Act,” that would prohibit the DOE from funding any new loan guarantees for applications submitted after 2011.<sup>14</sup> That seems to be a very short-sighted approach that will sacrifice our leading position in new energy technologies.

## 2. Taxation

The second of the three Congressional powers is the power to tax, or provide tax relief or tax preferences. This power is historically at least as important a policy tool for the Congress as the power to spend.

But here as well, the Congress finds itself unable to agree on what provisions should be enacted or maintained to meet our national energy goals.

For years, over two-thirds of federal spending on energy has come through the tax code, most often in the form of various incentives to

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10. See S. REP. NO. 112-173, at 80, 277 (2012).

11. *The Administration’s Bet on Abound Solar: Assessing the Costs to the American Taxpayers, Hearing Before the Subcomm. on Regulatory Affairs, Stimulus Oversight and Gov’t Spending of the H. Comm. on Oversight and Gov’t Reform*, 112th Cong. 25 (2012) (statement of David G. Frantz, Acting Executive Director of the Loan Programs Office, U.S. Dep’t of Energy).

12. *Id.*

13. *Id.*

14. See H.R. 6213, 112th Cong. (as passed by House, Sept. 14, 2012).

promote R&D, production of oil and gas, nuclear power, advanced biofuels, renewable energy, and energy efficiency.<sup>15</sup>

The recent focus on clean, low-carbon energy was established in 2005 through the Energy Policy Act under a Republican Congress and President.<sup>16</sup> This Act significantly expanded tax incentives for renewable energy and created a suite of new incentives, both at the residential and utility scale.<sup>17</sup> Along with state policies and a federal renewable fuels standard, these incentives are likely responsible for driving a significant amount of the recent increase in deployment of wind, solar, biofuels, and other clean energy sources. For example, the Congressional Research Service found that incentives for wind energy alone helped create about 470 manufacturing facilities for wind components in states across the country.<sup>18</sup>

However, recent concerns about deficits and the general opposition to government action have prompted some in Congress to oppose maintaining tax incentives for clean energy. At the end of 2011, Congress failed to extend more than ten expiring provisions directed at clean energy,<sup>19</sup> and several attempts to extend them retroactively have also failed. In addition, the primary tax credit supporting wind power, while extended for another year, expires at the end of this year, as do important tax credits that support advanced biofuels such as cellulosic ethanol.<sup>20</sup> The impending demise of these incentives is having a strongly negative impact on the wind energy industry. Based on estimates of the number of jobs that would have been lost if the production tax credit had expired at the end of 2012, at least 37,000 wind-related jobs will be lost

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15. See CONG. BUDGET OFFICE, FEDERAL FINANCIAL SUPPORT FOR THE DEVELOPMENT AND PRODUCTION OF FUELS AND ENERGY TECHNOLOGIES (2012), *available at* [http://www.cbo.gov/sites/default/files/cbofiles/attachments/03-06-FuelsandEnergy\\_Brief.pdf](http://www.cbo.gov/sites/default/files/cbofiles/attachments/03-06-FuelsandEnergy_Brief.pdf).

16. See Pub L. No. 109-58, 119 Stat. 594.

17. See *id.*

18. MICHAELA D. PLATZER, CONG. RESEARCH SERV., R42023, U.S. WIND TURBINE MANUFACTURING: FEDERAL SUPPORT FOR AN EMERGING INDUSTRY 14 (2012), *available at* <http://www.fas.org/sgp/crs/misc/R42023.pdf>.

19. See MOLLY F. SHERLOCK & MARGOT L. CRANDALL-HOLLICK, CONG. RESEARCH SERV., R41769, ENERGY TAX POLICY: ISSUES IN THE 112TH CONGRESS 1 (2012), *available at* <http://www.fas.org/sgp/crs/misc/R41769.pdf>; see also MOLLY SHERLOCK, CONG. RESEARCH SERV., R42105, TAX PROVISIONS EXPIRING IN 2011 AND "TAX EXTENDERS" (2011), *available at* <http://www.hsdl.org/?view&did=718271>.

20. See American Taxpayer Relief Act of 2012, Pub. L. No. 112-240, §§ 404, 407, 410, 126 Stat. 2313, 2338-43.

nationwide if the production tax credit is allowed to expire at the end of 2013.<sup>21</sup>

Even assuming these tax provisions get extended for another period of time, we face a broader problem. We have essentially two different tax codes for energy. One tax code consists of permanent incentives for energy, largely legislated before the enactment of federal budget controls in the 1970s. Because these provisions were enacted in the 1950s, 1940s, and even in some cases the 1920s, they focus on and favor older energy technologies and options. The other tax code consists of energy incentives put in place since the 1970s. Because of federal budget rules, these provisions have to be paid for, so they generally are not permanent. Every few years, they expire and have to be renewed, with a new set of budget offsets to pay for their cost to the Treasury. These tax incentives deal with new energy technologies, like renewable energy and energy efficiency.<sup>22</sup> This system of on-and-off tax incentives, while partially helpful to new energy technology deployment, has proven not to be the sort of sustained signal that is really needed in order to unleash innovation into the marketplace.

So, we have a very uneven playing field in the tax code for energy technologies, where we have picked winners and losers on the basis of whether they entered the tax code before the 1970s or since then. If we really want energy innovation to flourish, then we need a set of long-term policy signals that are both more predictable and more rational.

### 3. Regulation

The final tool at Congress's disposal for meeting our energy objectives is the power to regulate. Some of that regulation is in the form of direct energy standards, such as standards mandating increased efficiency for commercial equipment and consumer goods. Another form of regulation is through requirements affecting energy production practices. Examples of that would be in the area of regulating coal mine safety or oil and gas production techniques such as hydraulic fracturing. A final category of energy regulation addresses environmental consequences of energy that are not reflected in energy prices—so-called

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21. See Press Release, Am. Wind Energy Ass'n, Congress Extends Wind Energy Tax Credits for Projects that Start in 2013 (Jan. 1, 2013), available at <http://www.awea.org/newsroom/pressreleases/congressextendswindptc.cfm>.

22. See CONG. BUDGET OFFICE, FEDERAL FINANCIAL SUPPORT FOR THE DEVELOPMENT AND PRODUCTION OF FUELS AND ENERGY TECHNOLOGIES 2 (2012), available at [http://www.cbo.gov/sites/default/files/cbofiles/attachments/03-06-FuelsandEnergy\\_Brief.pdf](http://www.cbo.gov/sites/default/files/cbofiles/attachments/03-06-FuelsandEnergy_Brief.pdf).

environmental externalities—such as global climate change from greenhouse gas emissions.

Again, we are seeing push-back across the board on energy regulation, even in areas that were the subject of bipartisan agreement a short time ago. For example, one of the most effective long-term provisions of the 2007 Energy Independence and Security Act was a set of consensus standards on improving efficiency in appliances and lighting.<sup>23</sup> Those standards in the lighting area were agreed to, and are still supported by, a broad coalition of efficiency advocates and the affected industry.<sup>24</sup> Based on that consensus, the U.S. lighting industry made very substantial investments over the last five years in reworking their product lines and manufacturing facilities. Today, we can walk into any Home Depot or Lowe's and see a wide array of lighting choices—from improved incandescent to LED light bulbs—all of which are guaranteed to save the consumer money. Yet, these efficiency standards have become fodder for political attacks on cable television and in Congress. In 2012, the House of Representatives passed a proposal to block enforcement of these lighting standards by the DOE,<sup>25</sup> despite the fact that no major lighting manufacturer is opposing those regulations and despite the fact that IKEA, the world's largest home furnishings retailer, has just announced that by 2016, it will sell only LED bulbs and lighting fixtures.<sup>26</sup>

Another example of the rush by this Congress to go back on regulations that, up until recently, were noncontroversial and bipartisan is the so-called “Stop the War on Coal Act” that the House of Representatives passed on September 21, 2012.<sup>27</sup> The bill would roll back Clean Air Act regulations controlling mercury and toxic air emissions that are estimated to save over 11,000 lives each year, with health benefits estimated at \$90 billion per year.<sup>28</sup> It would also “block

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23. See Energy Independence and Security Act of 2007, Pub. L. No. 110-140, §§ 301-325, 121 Stat. 1492, 1549-96.

24. See *Energy Efficiency Standards: Hearing on S. 398 Before the S. Comm. on Energy and Natural Resources*, 112th Cong. 1 (2011) (opening statement of Hon. Jeff Bingaman).

25. See H.R. 5325, 112th Cong. §§ 514, 517 (as passed by House, June 6, 2012).

26. Press Release, IKEA Grp., *Becoming the First U.S. Home Furnishing Retailer to Sell Only LED Bulbs and Lamps, IKEA Sheds New Light on Home Sustainability Practices with a Bold Move to Go 100% LED by 2016*, (Oct. 1, 2012), *available at* [http://www.ikea.com/ms/en\\_US/img/ad\\_content/100112\\_IKEA\\_LED\\_lighbulbinfo.pdf](http://www.ikea.com/ms/en_US/img/ad_content/100112_IKEA_LED_lighbulbinfo.pdf).

27. See H.R. 3409, 112th Cong. (as passed by House, Sept. 21, 2012).

28. See OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, STATEMENT OF ADMINISTRATION POLICY: H.R. 3409 – COAL MINER EMPLOYMENT AND DOMESTIC ENERGY INFRASTRUCTURE ACT (Sept. 19, 2012), *available at*

the recently-finalized national program of fuel economy and greenhouse gas standards for Model Year 2017-2025 cars and light trucks. Further, the legislation could create uncertainty around the requirements currently in effect for the Model Year 2012-2016 vehicle standards.”<sup>29</sup> Improving fuel economy of cars and trucks reduces our dependence on imported oil, cleans the air, saves consumers at the pump, and prevents global warming.<sup>30</sup> Those used to be goals that had broad bipartisan support. The fact that the House could pass a bill to unravel that progress is deeply troubling.

So, the simple fact is that the general consensus in Congress on the energy goals we are trying to achieve as a nation is no longer in place. Whether we are talking about spending or taxing or regulating, the Congress currently is unlikely to enact major energy legislation. The general agreements reflected in the 2005 and 2007 energy bills no longer hold.

## II. OUTLOOK FOR THE FUTURE

I would hope the recent election will change our circumstances in Congress so that we can once again find areas of agreement. But I am not that hopeful that we will get there without more involvement and pressure from the public.

The recent election was more about looking backwards and finding blame than looking ahead and articulating a vision. That is true not only in the area of energy, but in many other areas as well.

The outlines of our energy future are clear, though, even if the details are not. Let me describe three key trends that will play out in the future, regardless of whether we move forward with a comprehensive energy policy or not.

Developing countries will dominate energy consumption growth and energy infrastructure development in the future. They will be a prime market for new energy technologies. We can either compete in—and try to shape—these strongly growing markets, or not. If we do not, though, other countries will.

The increase in fossil fuel consumption in the developing countries will outmatch any increase we may have in our domestic production. Oil

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[http://www.whitehouse.gov/sites/default/files/omb/legislative/sap/112/saphr3409r\\_20120919.pdf](http://www.whitehouse.gov/sites/default/files/omb/legislative/sap/112/saphr3409r_20120919.pdf).

29. *Id.*

30. *See generally* Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25234-01 (May 7, 2010).

prices in the United States and overseas will become higher and more volatile. We can either make strong efforts to decrease our oil intensity in tandem with maintaining or increasing our production—and insulate ourselves from future oil price shocks—or we can maintain our vulnerability at its current level.

While climate change concerns have taken a back seat during the current economic crisis, the science of what is happening and the need to transition to lower carbon energy systems worldwide is not in doubt. Energy security is actually linked to climate change mitigation. We can either plan ahead now to minimize the costs of climate change to our children and grandchildren, or we can saddle them with higher costs and global instability.

All of these future trends argue for a continued thrust forward toward an efficient, low-carbon, sustainable energy system. Both New Mexico and Colorado have been able to be at the forefront of clean energy policy at the state-level. Both states have excellent incentives and standards in place for the development and production of renewable energy, both commercially and for residential purposes.<sup>31</sup> As a Senator representing New Mexico, I have been pleased by the leadership shown in our state in terms of forward-leaning regulations, whether it is in the area of building codes, interconnection standards, and net metering, or with New Mexico's energy efficiency resource standard.<sup>32</sup>

I would conclude by encouraging all of us to continue to look for ways to engage the broader elements of our political system, on both sides of the political aisle, in support of a clean energy future. At both the state and federal levels, we need to impress on decision makers the necessity and urgency of moving forward on a comprehensive plan to meet our future energy needs in an environmentally responsible manner.

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31. See, e.g., *New Mexico Incentives/Policies for Renewables & Efficiency*, DATABASE OF ST. INCENTIVES FOR RENEWABLES & EFFICIENCY, <http://www.dsireusa.org/incentives/allsummaries.cfm?State=NM&re=1&ee=1> (last visited Apr. 21, 2013); *Colorado Incentives/Policies for Renewables & Efficiency*, DATABASE OF ST. INCENTIVES FOR RENEWABLES & EFFICIENCY, <http://www.dsireusa.org/incentives/allsummaries.cfm?State=CO&re=1&ee=1> (last visited Apr. 21, 2013)

32. See, e.g., *New Mexico Incentives/Policies for Renewables & Efficiency*, *supra* note 31.