
REPUBLICAN GOVERNORS

PUBLIC POLICY COMMITTEE

An Energy Blueprint for America: Policy Solutions for a New Energy Economy

**Republican Governors Public Policy Committee
Energy and Environment Working Group
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The Republican Governors Public Policy Committee (RGPPC) is the official policy organization of the nation's Republican governors. The RGPPC brings together 32 state governors to speak with one voice on public policy issues that impact their states.¹

This report is a collection of policy ideas from the RGPPC Energy and Environment Working Group. This report does not constitute an endorsement of the policy prescription by any specific governor. Instead, these policy proposals should be viewed as among the best ideas from the states to be considered in reforming the nation's energy policy.

¹ In this report, the term "states" generally refers to the governments of the states, the territories and the District of Columbia.

Introduction: The Critical Role of Governors in Achieving a Secure Energy Future

The 21st century has transformed every American's way of life. These changes relate to information technology and consumer electronics and reach into healthcare, transportation, and other vital facets of modern civilization. Underlining all of these developments is an increased reliance on energy to power our modern society. Unfortunately, many factors including supply disruptions, price volatility, global market uncertainty, and overregulation have negatively impacted our energy economy. The American people recognize the need for more predictability and energy innovation every time they pay higher gas and electricity prices. In a March Gallup poll, 91 percent of respondents said that the energy situation in the United States is "very" or "fairly" serious.²

Republican governors are committed to protecting the environment while providing reliable and affordable energy. Our nation's energy policy must reflect these goals, and the states are better positioned than the federal government to lead the drive toward these objectives because they are closely connected to the needs of their states' citizens as well as the unique circumstances impacting their environment. We want to harness the effectiveness of the free market system to ensure the United States has the energy we need, with the appropriate environmental protections, at the lowest cost. Through the joint efforts of the state and federal governments, air, land, and water quality have improved significantly from the 1970's to today. Consequently, America has cleaner air, land, and water than at any time since the Environmental Protection Agency (EPA) and other federal agencies began their work.

It is important to recognize that while we have achieved significant environmental progress our core environmental statutes have not been modernized in over 20 years. Unfortunately, over this time regulators have become more myopic, willing to impose regulations with smaller environmental benefits, despite larger economic consequences. The time has come to examine our statutes and regulatory implementation practices and make them more results-oriented, adaptable to changing costs and needs, and cognizant of the impact of regulations on jobs and the economy. For example, a series of newly proposed and enacted EPA regulations under the Obama Administration will dramatically increase energy costs, threaten electric reliability, and negatively impact all consumers. These new regulations highlight the need for regulatory reform.

These price increases are essentially a form of regressive taxation because energy costs make up a significantly higher portion of annual expenditures for the poor than they do for wealthier energy consumers. It is only through affluence that we may choose to increase the capital investment necessary to advance research and development as well as to cover the incremental cost of ever more stringent environmental regulation. We must pursue pro-growth policies in order to continue our environmental achievements.

America needs an energy policy that better allows us to use our robust domestic energy resources to power communities, create jobs, and protect those that can least afford it from soaring energy prices. For example, it is estimated that the refusal to grant authorization for a key portion of the

² Gallup Poll, March 8-11 2012. <http://www.gallup.com/poll/2167/energy.aspx>

Keystone XL pipeline is costing America thousands of jobs and prevents utilization of North American resources that will instead be sold to foreign competitors.

The states are best able to decide what is right for their citizens. Therefore, the Republican Governors Public Policy Committee's (RGPPC) Energy and Environment Working Group submits this report that unveils the Republican governors' vision for a new energy policy fit for the 21st Century economy based upon the following principles:

- **Energy security** that ensures a stable and reliable energy supply for our citizens, manufacturing, power generation, transportation, and industrial bases.
- **Environmental cooperation** that protects the state-federal partnership, provides for sustainable environmental protection, acknowledges the environmental gains supported by economic progress, and ensures that state governments play the primary role in regulation.
- **Energy affordability** that allows all Americans to take advantage of our country's robust energy resources to power communities and create jobs.
- **Energy as an economic driver** that powers modern civilization.

Policy Solutions for a New Energy Economy

I. A diverse mix of reliable, affordable, domestic sources of energy is available and necessary for American growth, security, and competitiveness.

Republican governors believe that the United States must continue to develop its domestic energy resources. We must ensure reliable and affordable access to all of our energy resources to reduce our reliance on fuels imported from geopolitically unstable areas. We also must have energy infrastructure that is readily accessible, safe, reliable, and well-maintained.

Some express concern that the United States is a leading consumer of energy. They often overlook our corollary leadership in energy efficiency and conservation and the fact that our energy consumption is a reflection of the size of our economy. Republican governors are proud of the states' contributions to the world economy. This paper is one piece of the effort to preserve America's economic prominence.

Projections vary according to the source, but analysts agree that the United States is home to an abundance of diverse energy resources. The United States has, within our own borders, traditional energy resources such as oil, natural gas and coal. Our country is home to vast amounts of potential energy from solar and wind resources. Many regions are particularly favorable to geothermal energy. Hydropower, a proven baseload technology, currently supplies many regions of the country including much of the Northwest.

Job growth is an important added benefit of energy exploration, production, and development. As we explore and produce more oil and gas we will need more petroleum engineers, truck drivers, mechanics, welders, and other skilled employees. Developing our coal resources requires miners and geologists. As we expand our nuclear power portfolio we will need a ready cohort of nuclear engineers and plant operators. Renewable technologies will require individuals with the skills to properly manufacture, site, and install new sources of energy. And, as we produce more energy and ensure an affordable, abundant, and American energy supply, businesses in all sectors will have the certainty and low-cost structure that they need to hire more employees.

Using all of our Energy Resources

Oil

The United States invented the oil economy, which created unimagined wealth and enviable standards of living. That same ingenuity allowed entrepreneurs and large companies alike to develop oil reserves throughout the world and transform the world's economic well-being. The United States was the world's largest producer of oil for much of the 20th century. For decades, the American economy was fueled by an abundant supply of domestic petroleum. By the later part of the 20th century America became a net petroleum importer and our dependence on

geopolitically unstable sources of oil was highlighted with the oil crisis of 1973.³ In recent years, many politicians, pundits, and experts have called for American “energy independence” to free us from oil imports from unfriendly or potentially unstable nations.

Many Americans hear this call for “energy independence” and rightly wonder what it really means and why it’s important. Energy “independence” is actually “energy security.” Policymakers should work to ensure American “energy security” in order to buttress our economy against unforeseen events which could destabilize energy supply. While our electricity and “stationary” sector is relatively secure and independent, our transportation sector, which relies on petroleum, is dangerously dependent on imports.

Fortunately, once again, creative American minds have conquered technological challenges that have unlocked new domestic oil reserves. These reserves offer us a new opportunity for economic transformation. Rather than vilifying private businesses which must compete with foreign sovereign oil companies, Republican governors prefer to enable private investment to responsibly explore and produce domestic resources.

Challenges and Opportunities

- Today, the net import share of domestic petroleum has declined to under 50 percent from a high of 60 percent in 2005. However, the United States is still dependent on almost half of its transportation fuel on imports.⁴ The chances of global market disruptions and black swans necessitate increased domestic production and energy partnerships with allies like Canada and Mexico. For example: if tensions with Iran escalate, global markets will respond accordingly, contributing to the upward increase in crude prices. If Iran impedes the path of oil through the Straits of Hormuz, global oil prices will rise substantially. Hormuz is the world's most important oil chokepoint as it represents the travel of roughly 35 percent of all seaborne traded oil, or almost 20 percent of oil traded worldwide.⁵
- The Obama Administration has refused to grant a permit for the key portion of the Keystone XL pipeline which crosses the US/Canadian border. While the President has pledged to direct his administration to “cut through the red tape, break through the bureaucratic hurdles, and make this project a priority,” his plan leaves a 1,179 mile gap between the Canadian oil resources and the southern portion of the pipeline.⁶

³According to the Energy Information Administration (EIA), in 2010, only 100 companies produced 87% of the world’s oil and national oil companies accounted for 55% of all production.

www.eia.gov/energy_in_brief/world_oil_market.cfm

⁴How Dependent Are We on Foreign Oil?" EIA's Energy in Brief. U.S. Energy Information Administration, May 2012. http://www.eia.gov/energy_in_brief/foreign_oil_dependence.cfm

⁵"U.S. Energy Information Administration - EIA - Independent Statistics and Analysis." World Oil Transit Chokepoints. U.S. Energy Information Administration, Dec. 2011. <http://www.eia.gov/countries/regions-topics.cfm?fips=WOTC&trk=p3>

⁶Mason, Jeff. "Facing Heat over Gas Price Rise, Obama Vows to Speed Pipeline's Southern Leg." Reuters. Thomson Reuters, 22 Mar. 2012. 14 June 2012.

<http://us.mobile.reuters.com/article/environmentNews/idUSBRE82L0UU20120323?irpc=932>

- The Obama Administration has issued a Five Year Plan for exploration and drilling on the outer-continental shelf that reduced available resources and continues to obstruct and limit active development of domestic offshore resources.
- While the Bureau of Land Management (BLM) recognizes the oil and gas management program as one of the most important mineral leasing programs in the Federal government, federal lands in many parts of the energy-rich west are still off-limits to energy production.⁷
- According to the U.S. Geological Survey (USGS), the United States holds more than half of the world's oil shale resources. The largest known deposits of oil shale are located in a 16,000-square mile area in the Green River formation in Colorado, Utah and Wyoming. USGS estimates show the region may hold more than 1.5 trillion barrels of oil – six times Saudi Arabia's proven resources, and enough to provide the United States with energy for the next 200 years. Yet, the Bureau of Land Management has issued a plan to close public lands to kerogen-based oil shale development in Colorado, Utah and Wyoming without a process in cooperation with state and local interests.⁸
- Energy development in Alaska is still dramatically restricted. The Federal government owns 60% of the land in Alaska and has foreclosed resource development in the Arctic National Wildlife Refuge coastal plain (ANWR 1002) and huge swaths of the National Petroleum Reserve (NPR-A). The Beaufort and Chukchi basins have been severely restricted. The Obama administration has closed the opportunity for exploration on the Outer Continental Shelf (OCS) in Bristol Bay and Aleutian basins. Virtually the entire Cook Inlet oil basin has been designated critical habitat under the Endangered Species Act (ESA).
- CO₂ enhanced oil recovery is an emerging opportunity that incorporates the role of the marketplace in incentivizing the technologies needed to continue advancing domestic crude oil production. For example, Oklahoma has long been a leading energy producing state, yet much of the production in the state occurred before the use of modern reservoir engineering practices. Due to the low overall oil recovery efficiency in Oklahoma, the potential for CO₂ enhanced oil recovery is significant.

Recommendations

- Petroleum supply security, an integral part of energy security, is possible through increased domestic production and by working with our closest partners, Canada and Mexico, to improve international pipeline infrastructure. We can begin this process by approving the Keystone XL Pipeline and easing regulatory burdens which prevent the

⁷ "Oil and Gas." Oil and Gas. U.S. Department of the Interior, June 2012.
http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas.html.

⁸ Chairman Doc Hastings. U.S. House Natural Resources Committee. Obama Administration Announces Plan to Block U.S. Oil Shale Development and U.S. Job Creation. N.p., 3 Feb. 2012. .
<http://naturalresources.house.gov/News/DocumentSingle.aspx?DocumentID=278055>

construction and operation of adequate petroleum transportation and refining infrastructure.

- Allow for responsible development in the National Petroleum Reserve, ANWR 1002 and the Beaufort and Chukchi Seas.
- Lift restrictions on drilling on the OCS. Coasts of states such as Virginia, which was taken out of the most recent Five Year Plan, should be reopened immediately. Empower states to make off-shore exploration restrictions specific to local considerations.
- Introduce revenue-sharing measures for all off-shore energy projects.
- Republican governors recommend working with our friends in Canada and Mexico to further develop the idea of a “North American Energy Partnership.” North America has the resources and tools necessary for near-self sufficiency in the near future. We propose enhanced trilateral dialogue amongst the governors and premiers of the states and provinces of the United States, Canada, and Mexico to begin a high-level conversation necessary for securing North America’s fuel supply for development.
- Further research, development, and demonstration (RD&D) of the development of oil shale is warranted. Sensible RD&D will result in safe, efficient and environmentally responsible recovery methods that can be deployed on a large scale consistent with the declared policy of Section 369 of the Energy Policy Act of 2005.

Natural Gas

Only a few years ago, many experts and industry analysts expected the United States to be a net importer of natural gas. The 40 year development and regulation of hydraulic fracturing has evolved to fundamentally alter these expectations. Discoveries of massive natural gas plays in the Marcellus Shale, Utica Shale, Antrim Shale, among others, now made recoverable by advanced technologies, mean that the United States can meet decades of demand through domestic production. A 2011 Massachusetts Institute of Technology (MIT) study of North American natural gas found that the range of technically recoverable natural gas resources is 25% of global natural gas resources.⁹ This doesn’t include “potentially vast resources present in the Gulf of Mexico and in the North American Arctic, some of which could become economically producible by mid century.”¹⁰

With so much abundance at home, natural gas has become an energy game-changer. The natural gas industry employs more than 600,000 people directly and has created over 2.2 million American jobs.¹¹ Natural gas’s use by industry for manufacturing has helped catalyze a mini manufacturing renaissance in the United States. Natural gas and related products are also used as

⁹ Prudent Development: Realizing the Potential of North America's Abundant Natural Gas and Oil Resources. Rep. National Petroleum Council, Sept. 2011. http://www.npc.org/reports/NARD/NARD_Resource_Supply.pdf

¹⁰ Ibid.

¹¹ The Economic and Employment Contributions of Shale Gas in the United States. America's Natural Gas Alliance, <http://anga.us/media/235626/shale-gas-economic-impact-dec-2011.pdf>

chemical feedstock. Recent production trends have allowed many chemical companies to re-open domestic operations, creating American jobs.¹² PricewaterhouseCoopers recently issued a report highlighting the potential benefits of increased natural gas production for U.S. manufacturing. It's estimated that American manufacturers could employ up to a million new employees and reduce manufacturing costs by \$11 billion by 2025.¹³

Natural gas also has potential as a transportation fuel, providing for diverse transportation fuel supply in a time of increasing anxiety for American consumers over gasoline prices. More than a dozen states have recently signed a Memorandum of Understanding (MOU) that calls for a common, multi-state request for proposal (RFP) for the purchase of natural gas vehicles (NGVs) for state fleets. In Virginia, Governor Bob McDonnell signed Executive Order No. 36 entitled "Moving Toward Alternative Fuel Solutions for State-Owned Vehicles," that includes directives for diversifying the Commonwealth's state vehicle fleet to leverage fuel purchasing power to encourage alternative fuel infrastructure expansion.

The private sector has also realized the potential of natural gas as numerous large corporations like Ryder, FedEx, Verizon, and UPS have begun to include NGVs in their corporate fleets.

Challenges and Opportunities

- The abundance of the natural gas discoveries has outpaced the domestic demand for it. The United States is projected to become a net exporter of natural gas by 2021.¹⁴
- The current natural gas pipeline infrastructure was predominantly built for home heating delivery. A massive switch to natural gas for electric generation will require the volumes and the destinations of pipelines to be redesigned and constructed.
- The EPA and Department of Interior (DOI) are preparing, or have already pursued, regulatory action for state, private, and federal lands which could negatively impact domestic natural gas production with negligible public benefits and unnecessary duplication of existing regulations.
- One of the biggest uses of natural gas has been in the agricultural sector where gas has been successfully used as a critical input for fertilizer for biofuels and as a thermal resource during biofuels processing.

¹² Denning, Liam. "Natural-Gas Renaissance Sparks Favorable Chemical Reaction." Online.wsj.com. Wall Street Journal, 27 Feb. 2012. . <http://onlinewsj.com/article/SB10001424052970204778604577243632504873636.html>

¹³ Shale Gas: A Renaissance in US Manufacturing? Rep. Pricewaterhouse Coopers, Dec. 2011. http://www.pwc.com/en_US/us/industrial-products/assets/shale-gas.pdf.

¹⁴ EIA. Natural Gas Imports and Exports, Reference Case <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2012&subject=0-AEO2012&table=76-AEO2012®ion=0-0&cases=ref2012-d020112c>

Recommendations

- End unwarranted attempts by the federal government to restrict natural gas production. Republican governors do support effective and efficient oversight, as has been demonstrated by the work of the states in this area. Examples of recently enacted state regulations can be found in many states, including Indiana, Ohio, Wyoming, Pennsylvania, Colorado, and Texas.
- Pipelines need to be planned and constructed so that they can support electricity generation needs.
- Continue interstate efforts to establish best practices for regulation of hydraulic fracturing. Top-down federal regulatory regimes will not, and cannot, fully comprehend the vast geological and ecological variances throughout the states.
- Republican governors will work to create facilitative environments which catalyze greater use of this abundant domestic resource in manufacturing, farming, transportation, and power generation.
- Republican governors are committed to ensuring every home and business in the United States has access to natural gas.

Coal

America is the world's storehouse of coal, accounting for 27 percent of the world's supply – possessing an estimated 261 billion recoverable short tons. For perspective, the US consumes just 1 billion short tons of coal per year.¹⁵ Coal is produced in 25 states, with 72% of coal production occurring in Wyoming, West Virginia, Kentucky, Pennsylvania, and Montana.¹⁶ Accounting for roughly 45 percent of all US electricity generation, the domestic coal industry is responsible for hundreds of thousands of American jobs. American produced coal provides energy at affordable and predictable rates. Compared to the 1970s, today's clean coal technologies have reduced emissions by more than 90 percent.¹⁷ And although coal consumption has increased by 25% since 1990, NOx emissions from coal-fired power generation have dropped 64% and SO2 emissions have dropped 66% over the same time.¹⁸

While Republican governors recognize and support the nation's significant environmental progress attributable to federal environmental laws, we know that progress would not have been achieved without the critical participation and primary regulatory activity of the states. We are disturbed by the recent unprecedented regulatory overreach that has encumbered America's coal

¹⁵ Congressional Research Service (CRS), *U.S. Fossil Fuel Resources: Terminology, Reporting, and Summary*, March 25, 2011.

¹⁶ EIA, Energy in Brief, "What is the role of coal in the United States."
http://www.eia.gov/energy_in_brief/role_coal_us.cfm

¹⁷ DOE NETL, *Key Issues & Mandates, Secure & Reliable Energy Supplies – Coal Becomes a "Future Fuel"*, www.netl.doe.gov/KeyIssues/future_fuel.html.

¹⁸ EPA, *EPA Air Trends reports (1970-2002)* and EPA preliminary raw plant data (2003-2010), CAMD data; EIA, *Monthly Energy Review, June 2011* (coal consumption and generation); EIA, *Annual Energy Outlook 2011*.

industry over the past three years. Once fully implemented, this new regulatory onslaught will erode the very foundations of the prosperous economy that has provided for America's leading role in expanding environmental stewardship.

Americans will be at a competitive disadvantage, as other countries are eager to embrace coal without any mitigation of environmental impact, even as our regulators attempt to prevent our own use of this valuable domestic resource.

Challenges and Opportunities

- Stringent and enforceable environmental regulations serve as a key insurer of public health and welfare. However, new rules and regulations recently proposed and finalized by the Obama Administration are primarily designed to stop America's production and use of coal rather than provide for any appreciable benefit to health or the environment.
- The federal Office of Surface Mining is expected to promulgate the Stream Protection Rule (SPR), which would decrease America's demonstrated recoverable coal reserves up to 41.5% and place as many as 273,000 mining related jobs in jeopardy. This rule is also estimated to reduce federal and state tax revenues by \$4 to \$5 billion per year due to lost production.¹⁹
- Despite the resounding defeat of cap and trade legislation in the last Congress, the Obama EPA is now attempting to implement its own backdoor emissions scheme under the auspices of the Clean Air Act (CAA). EPA's recently proposed NSPS for GHGs virtually guarantees a ban on all new construction of commercial scale coal-fired power plants and sets a Best Available Control Technology (BACT) standard for which no technology exists.
- Environmental regulations are an important insurer of public health, but recent regulations including the Utility Maximum Achievable Control Technology (MACT) rule may present significant challenges to electricity reliability. Pending rulemakings including those addressing 316(b) cooling water intake structures and coal ash add to this significant uncertainty.
- The new EPA rules are expensive to comply with and cannot be reliably implemented in the timeframes directed. Increases in costs, lost jobs, and reduced reliability due to inadequate natural gas infrastructure are all consequences of the regulatory status quo.
- Coal exports have reached their highest level since 1991.²⁰ However, opposition from environmental groups and others has stymied promising job-creating coal export terminals on the West Coast.²¹

¹⁹ Environ International Corp., *Economic Analysis of Proposed Stream Protection Rule*, March 5, 2012

²⁰ Monthly Energy Review. Chart. US Energy Information Administration, May 2012
<http://205.254.135.7/totalenergy/data/monthly/archive/00351205.pdf>

²¹ Millman, Joel, and Chris Maher. "Coal Port Takes Its Lumps." Online.wsj.com. Wall Street Journal, 4 Feb. 2011.
<http://online.wsj.com/article/SB20001424052748703399204576108640399166816.html>

- Coal conversion technologies hold promise and are being deployed. Several project developers are revisiting efforts to build gasification and liquefaction plants that convert coal into substitutes for petroleum products. The Great Plains IGCC Plant in North Dakota not only converts to gas, but also supports enhanced oil recovery efforts in Canada. DKRW's proposed Medicine Bow Project in Wyoming will produce gasoline and a variety of liquids from coal.
- Technologies such as carbon capture, storage, and dissemination could fundamentally change the way we use coal in the future.
- Facilitating policies which preserve and encourage, rather than eliminate and discourage, the broad and responsible use of America's coal resources will ensure continued prosperity and energy security for future generations.

Recommendations

- Congress never intended to use the CAA to eliminate coal from the nation's energy mix. A decision with such far-reaching consequences should be presented to the American public and decided by legislators in Congress – not by bureaucrats in Washington. If our regulators continue to prevent our own use of this valuable domestic resource, Americans will be at a competitive disadvantage.
- Republican governors support the continued progress toward a cleaner environment while recognizing that regulatory certainty and realistic cost-benefit analyses are necessary if significant planning and investment in control equipment is to proceed. Ever-changing regulations and unnecessary massive new regulatory mandates serve to stifle investment rather than promote an ordered progression to cleaner technologies. The current byzantine federal regulatory structure should be reconsidered to ensure that over-arching goal of a healthy environment is effectively and efficiently pursued.
- Republican governors support a more balanced approach and reconsideration of the major federal environmental regulations proposed and promulgated under the current Administration, including Utility MACT, the Stream Protection Rule, NSPS for GHGs, Section 316(b) for Water Cooling Intake Structures, the Coal Ash rule, and the “endangerment finding” for GHGs. Individually and combined, these regulations promise skyrocketing energy prices, hundreds of thousands of lost jobs, questionable grid reliability, and billions in foregone annual federal and state tax revenues, all without substantial environmental benefit.
- Republican governors support academic research and industry innovations in reclamation, clean-coal technology, coal-conversion, the deployment of coal-to-gas, coal-to-liquids, and coal-to-chemical conversions where they are competitive in the marketplace.

- We must facilitate market-based decisions for export of coal and other commodities. The National Environmental Policy Act (NEPA) process should evaluate environmental impacts and potential mitigations on a case-by-case basis and not be used as a tool to block commerce.
- Federal agencies such as the EPA must respect the states' role in federal/state partnerships. Federalism is often neglected by EPA in key rulemakings—an example being the State Implementation Plan (SIP) vs. Federal Implementation Plan (FIP) process.
- Republican governors support the unencumbered free-trade of coal. Our large coal supplies are an important economic advantage for the United States since coal is a widely used fuel source throughout the world.

Nuclear

The United States is a world leader in the design, engineering, and manufacturing of nuclear technology and facilities. Unfortunately, self-imposed regulatory inefficiency and uncertainty constrain the deployment of these technologies. Nuclear energy is a safe producer of round-the-clock, efficient, and reliable, baseload electricity with near zero emissions. The U.S. also faces self-imposed hurdles to domestic production of uranium. Without a federal commitment to safe domestic uranium production, our nation's nuclear power generation is dependent on foreign, and sometimes hostile, nations for this vital resource. There are currently 104 operable commercial nuclear reactors at 65 nuclear power plants in the United States. Since 1990, the share of America's total electricity supply provided by nuclear power generation has averaged about 20%.

Challenges and Opportunities²²

- The United States currently imports 91% of its uranium for fuel in American nuclear reactors. Much of it is imported from countries like Kazakhstan, Russia and Niger.²³ Significant uranium reserves are found in western states like Wyoming and New Mexico. In January of 2011, Interior Secretary Ken Salazar announced that the Department of Interior would ban uranium mining on one million acres of federal land. The Department's Environmental Impact Statement failed to articulate any reason for the land withdrawal, which is being challenged in court by the nuclear energy industry.
- New nuclear generation projects are expensive to build and, because the construction process and licensing process can last several years, present a higher than ordinary risk for financing purposes. Currently, the exceptionally low price of natural gas makes these projects less attractive for financing, though this may change as gas prices fluctuate.

²² The Blue Ribbon Commission on America's Nuclear Future issued a report in January 2012 which detailed policy prescriptions for challenges surrounding nuclear power. Republican governors believe the BRC report can be a starting point for a constructive conversation on the future of nuclear power in the United States.

²³ EIA. Nuclear & Uranium. "Uranium Marketing Annual Report 2011." <http://www.eia.gov/uranium/marketing/>

Federal tax depreciation rules, production tax credits and loan guarantees may provide useful financing support for investments in new nuclear projects, but state-level initiatives have proved to be the decisive factors in U.S. utilities' plans to proceed with new reactor construction.²⁴

- Nuclear technology is advancing. New reactor designs for both large 1,000+ MWe and small modular reactors (SMRs) are part of a new generation of nuclear power plants being considered all over the world. New large reactors have greatly enhanced safety features, with fewer moving parts and components and more reliance on passive safety systems.

The objective of the SMRs is to provide a flexible, cost-effective energy alternative. Small reactors are defined by the International Atomic Energy Agency (IAEA) as those with an electricity output of less than 300 MWe. Modular reactors are manufactured at a plant and brought to the site fully constructed. They allow for less on-site construction, increased safety and greater resistance to extreme natural events (like the tsunami that overwhelmed the Fukushima nuclear plant in Japan in March 2011).

- The Nuclear Energy Institute (NEI) estimates that private investment in new nuclear power plants has created in excess of 15,000 new U.S. jobs since 2005. The Nuclear Regulatory Commission is reviewing license applications from 10 companies or groups of companies. These 10 applications represent 16 new reactors. It's estimated that the construction of each nuclear power plant represents up to 3,500 jobs during a construction period that can be as long as ten years.²⁵

Recommendations

- Republican governors support the empowerment of states to provide safe and effective regulatory management of uranium development activities. The uranium industry is highly regulated by multiple entities and we believe that uranium resource development must be coordinated between the states and the federal government.
- Used fuel management and disposal must be based upon sound science and requires leadership from the federal government and strong state participation.
- The federal government must discharge its statutory and legal obligation to create and implement a program to manage used nuclear fuel. The program should consist of several elements: development of consolidated storage facilities in cooperation with states and local communities; a guarantee that the \$750 million collected annually from

²⁴ Georgia Senate Bill 31, the "Nuclear Energy Financing Act" and related regulation adopted in 2009 (links below), like Construction Work in Progress and similar early cost recovery laws in nine other states, will help provide ratepayers up to \$2 billion in benefits not anticipated when the new Vogtle 3 and 4 reactors were originally certified. See http://www1.legis.ga.gov/legis/2009_10/sum/sb31.htm and Georgia Public Service Commission Docket No. 27800: <http://www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=119014>

²⁵ *Nuclear Energy's Economic Benefits – Current and Future*, Nuclear Energy Institute, April 2011 <http://www.nei.org/resourcesandstats/documentlibrary/newplants/whitepaper/jobs/>

electricity consumers for fuels management will actually be spent for the purpose intended; and a technology research and development program to develop the technologies necessary to recycle used nuclear fuel, thereby extracting additional energy from it and reducing the volume and toxicity of waste by-products requiring permanent disposal.

This integrated approach is consistent with the policy recommendations of many state and local organizations representing elected officials. Republican governors also recommend new approaches to siting and developing nuclear waste facilities and note that these are most likely to succeed if, among other stipulations, they are “governed by consent-based partnership arrangements or legally-enforceable agreements with host states, tribes and local communities.” The Nuclear Waste Trust Fund contains over \$35 billion dollars, if we cannot create workable solutions then the Trust Fund should be terminated and dollars refunded to ratepayers.

- We support continued American innovation in nuclear technology. Recent advances in reactor and fuel cycle technology along with safety and performance improvements give us the opportunity reshape the future of nuclear energy in the United States. Federal regulatory oversight of research and development must be aimed at supporting and encouraging safe, efficient, and effective R&D.
- International cooperation on nuclear energy and efforts to ensure safety and non-proliferation are inseparable from nuclear development domestically. As governors, we recognize the importance of creating entities such as the International Atomic Energy Agency’s (IAEA) global nuclear fuel bank and expect our domestic agencies and plant operators to adopt best-practices based on lessons learned from international incidents such as Fukushima.
- Federal trade and export policies need to recognize and support the American nuclear industry’s ability and desire to be a leading provider of nuclear technology around the world. These new policies could potentially generate billions of dollars of trade and thousands of American jobs.
- Republican governors call upon Congress and regulators to address licensing issues for new or expanded nuclear facilities.

Renewables

Renewable energy sources have played an increasingly important role in our nation’s energy portfolio. The International Energy Agency (IEA) defines renewable energy sources as energy generated from solar, wind, biomass, the renewable fraction of municipal waste, geothermal sources, hydropower, ocean, tidal and wave resources, and biofuels. The United States is home to an abundant supply of all of these resources. Companies specializing in a variety of renewable resources have established themselves in places like Natchez, Mississippi, where a biofuels company recently announced it would locate its second Mississippi production facility,

creating 1,000 jobs.²⁶ In Arizona, three projects under way near Gila Bend now reveal the variety of solar-power technologies being commercialized in large power plants.²⁷ Examples like these can be found throughout the country.

Other new technologies are being developed by the transportation industry as well. New batteries, advanced engines, and alternatively fueled vehicles are being tested and demonstrated throughout the country.

Renewables and other forms of energy such as wind, solar, hydropower, tidal power, biomass, biofuels, and other emerging technologies are an important piece of the overall plan necessary to enable the United States to move closer to the goal of “energy security.”

Challenges and Opportunities

- Non-hydroelectric renewable generation has increased in many states over the past decade. Maine, South Dakota, and Iowa saw the greatest percentage changes. Maine went from 20% to 27% non-hydro renewable generation in 2011, while South Dakota and Iowa went from 1% and less than one percent in 2001 to 21% and 17% respectively.²⁸ States that provided most of their power from hydroelectric production in 2011 were Idaho with 93%, Washington with 82%, and Oregon with 78%.²⁹ According to the EIA, wind was the fastest growing source of non-hydroelectric power generation with wind generation increasing 27% in 2011 compared to 2010.³⁰
- Solar and wind energy, without storage, are not readily dispatchable and their variable nature makes integration into the electric grid an ongoing challenge that is leading to potential innovative strategies including storage, demand response, and Energy Imbalance Markets (EIMs).
- Renewable energy sources such as geothermal energy (and to some extent methane-to-energy) provide consistent baseload energy and are an attractive resource. For example, Nevada has had success with geothermal energy, providing a clean, renewable and reliable source of power.

²⁶ "KiOR Chooses Natchez, Not Newton, as Site for Second Plant" Mississippi Business Journal. Associated Press, 27 Mar. 2012. . <http://msbusiness.com/2012/03/kior-chooses-natchez-not-newton-as-site-for-second-plant/>.; "KiOr to Build 5 Biofuel Plants in State" Mississippi Economic Council.

<http://www.msmec.com/index.php/overview/archives/3-kior-to-build-5-biofuel-plants-in-mississippi>

²⁷ Randazzo, Ryan. "Solar-power Plants Booming in Gila Bend." Azcentral.com. The Arizona Republic, 28 Aug. 2011. <http://www.azcentral.com/arizonarepublic/business/articles/2011/08/28/20110828gila-bend-solar-power-plants.html>.

²⁸ U.S. Energy Information Administration - EIA - Independent Statistics and Analysis. "Shares of Electricity Generation from Renewable Energy Sources up in Many States. US Energy Information Administration, 9 Apr. 2012. <http://www.eia.gov/todayinenergy/detail.cfm?id=5750>.

²⁹ Ibid

³⁰ "U.S. Wind Generation Increased 27% in 2011." Eia.gov. US Energy Information Administration, 12 Mar. 2012. . <http://www.eia.gov/todayinenergy/detail.cfm?id=5350>.

- Electricity generated from biomass³¹ offers ample opportunity for expansion. This organic waste can include scrap lumber, forest debris, agricultural harvest waste, and other industry byproducts that serve no other purpose.³² Environmentally responsible burning of waste holds promise for many states and localities.
- Hydropower is another energy opportunity. The Oak Ridge National Laboratory estimates that 54,000 non-powered dams could produce 12.6 GW of electricity, or enough power to electrify 12.6 million homes.³³
- Aquaculture can yield other potential renewable resources. In Arizona, recent legislation expanded the definition of agricultural real property to include land and improvements devoted to aquaculture for research, development and commercial production of biofuel or hydrogen.³⁴

Recommendations

- While Republican governors have a variety of positions on these policies, we are all in agreement that a *national RES* or Clean Energy Standard (CES) for electricity production would be counter-productive for our state and national economies. The states are the laboratories of democracy; let them be our nation’s energy laboratories as well. Twenty-nine states and two territories have enacted renewable portfolio standards (RPS) while eight states and two territories have renewable portfolio goals for their own energy portfolios. For example, Oklahoma has an aspirational 15 percent renewable energy capacity target which the state will surpass, without mandates, in 2012.³⁵
- With the introduction of variable resources into the portfolio, the development and permitting of pumped storage facilities and other forms of large scale energy storage need to be pursued. Without additional storage facilities, the construction of new “peaker” plants may be required to provide power at times of peak demand.
- We must streamline federal permitting requirements on renewable resource development. A number of bills have been introduced in the 112th Congress to streamline renewable energy production on federal lands and offshore, on the Outer Continental Shelf.³⁶ Several members of Congress have proposed legislation that would reform the hydropower development process including: exempting small hydropower (less than 5MW) from the Federal regulatory process; authorizing FERC to grant exemptions from license requirements to small hydro facilities on non-federal land that do not have an

³¹ Biomass can be defined as renewable organic waste that would otherwise be dumped in landfills, openly burned, or left as fodder for forest fires.

³² Biomass Power Factsheet. Biomass Power Association, http://www.usabiomass.org/pages/about_facts.php

³³ NHA - Hydropower Fact Sheet. Rep. National Hydropower Association, Apr. 2011. <http://hydro.org/wp-content/uploads/2011/04/ORNL-Hydro-Factsheet-final.pdf>

³⁴ Arizona HB 2225, 50th Legislature. (2012)

³⁵ Oklahoma. Statute. title.17 §801.1 et seq. (2010).

³⁶ Cutting Red Tape to Facilitate Renewable Energy Act, (H.R. 2170); Advancing Offshore Wind Production Act (H.R. 2173); Utilizing America’s Federal Lands for Wind Energy Act (H.R. 2172); Exploring Geothermal Energy on Federal Lands Act (H.R. 2171) 112th Cong.

installed capacity greater than 40 MW; and allowing FERC to extend the term of a preliminary permit once for up to two additional years if FERC finds that the permittee has carried out activities “in good faith and with reasonable diligence.”³⁷

Virginia has created a permit by rule for small renewable projects (100MW and below) to ease the state regulatory burden on wind, solar, biomass, and other renewable projects. In Wyoming, the Renewable Energy Coordination Committee (RECC) aims to foster interagency information and coordination for the development and transmission of wind energy projects. RECC members aim to improve individual permits, leases, and processes so that decision makers have consistent and common information for regulation, are able to identify and remedy conflicts and redundancy, and avert delays in project development. Nevada signed an MOU with the Bureau of Land Management to solidify an effective working relationship on renewable energy and transmission issues in the State.

Efficiency

Using energy more efficiently is a cost-effective, common sense solution that can be used to lower energy costs and save taxpayers’ money. Republican governors want to identify the barriers that stand in the way of consumers’ ability to make more efficient choices. Efficiency is a marketable good – every kilowatt hour not used is money saved.

Challenges and Opportunities

- Residential efficiency programs depend, in large part, on changing individual behavior.
- Commercial and industrial efficiency is generally driven by market competition.
- Subsidies distort market forces and “hide” electricity pricing from consumers. Because of these distortions, many consumers are denied the ability to make informed efficiency decisions.

Recommendations

- Republican governors prefer efforts to educate and enable informed decision making to foster residential efficiency gains over expensive mandates of specific consumer actions.
- The states should be free to develop their own efficiency standards and demand-side management policies that best suit each state’s unique demographic and economic makeup without interference from federal regulation.
- The states have a variety of local incentives, rebates, loans, and credits to support efficiency efforts. For instance, several privately held utilities in Alabama provide

³⁷Hydropower Regulatory Efficiency Act of 2011, H.R. Res. 3680, 112th Cong.

energy efficiency rebates.³⁸ We support continued innovation in efficiency policy at the state level and through the marketplace.

- Republican governors salute private-sector contributions to efficiency through corporate efficiency efforts and will continue to work with the private sector to share and encourage best practices on efficiency initiatives that can improve performance and cut costs in the public and private sectors. States could encourage, promote, and adopt the use of public-private partnerships to develop energy efficient buildings and update existing facilities.
- We recommend that states utilize performance contracting programs that leverage private sector capital for energy efficient retrofits. These retrofits should be designed to pay for themselves, reduce energy consumption, save taxpayer dollars, and help create jobs in the efficiency industry.

An Energy Infrastructure for the 21st Century

Infrastructure and energy are inseparable. America's energy infrastructure is an essential component of America's economic competitiveness. We recognize the importance of a sound transmission system in ensuring electricity reliability as well as the necessity of additional pipeline and domestic refinery capacity to ensure stable fuel supply. Recent studies regarding the current state of America's energy infrastructure have painted a bleak picture for future grid reliability and energy security.

Challenges and Opportunities

- Transmission and pipeline permitting issues abound. Bureaucratic roadblocks range from permitting delays to a lack of coordination between federal, state, and local governments and the myriad agencies which regulate infrastructure development.
- Modernization and technology have become important components in our electricity grid as we've entered the information age.
- Compatibility of alternative transportation fuels with infrastructure and end users is of concern.
- The proposed Tier 3 rule presents potential economic challenges and warrants reconsideration.

Recommendations

- Our energy infrastructure is in need of repair. Republican governors support the broad concept of a transmission, generation, and distribution infrastructure renaissance for the

³⁸"Alabama." Central Alabama Electric Cooperative - Residential Energy Efficiency Rebate Program. Database of State Incentives for Renewables & Efficiency, n.d. .
http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=AL15F

United States and view this development as pivotal for economic competitiveness and energy security.

- We support the construction of additional transmission and distribution infrastructure as needed to meet increased demand and varied supply-side requirements and cost allocation based on rate-payer benefit.
- We encourage FERC to support North American Electric Reliability Corporation (NERC) efforts to ensure the reliability of the bulk power system.³⁹
- Smart grid technologies have the potential to make valuable contributions to the preservation and health of future generations through a nimbler and more resilient electricity system. There has been much investment in technology such as smart meters and distributed generation to facilitate the development of this smarter grid. Republican governors support efforts to provide more information and control of electricity use to consumers so that cost-effective decisions can be made. Experts can examine additional benefits as a smart grid is further developed, and policymakers can determine whether these technologies warrant new investment.
- Petroleum refinery and pipeline infrastructure is an essential part of the energy production process. The ability to transport and refine fuels efficiently and safely is an important aspect of American energy security. Federal, state, and local governments should work together to expedite permitting for necessary new pipeline and refinery infrastructure.

³⁹ Policy Resolutions - NARUC, Pg 7 § No. 679 (2012).

II. Our national energy policy must support the development of the energy resources necessary for American economic growth, security and competitiveness.

Environmental law and regulations should not stifle the responsible development of our domestic energy resources.

We reject the false choice between economic growth and sound environmental regulation. The American people can, and must, expect to have both as we develop our vast and diverse domestic energy resources. Regrettably, federal environmental policy has been a *de facto* driver of energy policy; this status-quo must be reversed. Environmental policy should instead be coupled with a national policy encouraging safe and responsible energy development, in support of economic growth. Reprioritized, our national policies can balance the energy, environmental, and economic needs of our country in a way that advances and promotes all three.

Today's federal environmental regulatory structure is convoluted and burdensome. We support reforms that ground the system in an environmental federalism that preserves the partnership between the federal government and the states and relies on sound science and facts. We envision a structure that is flexible, market-based, and aligned with our principles of responsible, affordable, and reliable energy development. It is also imperative, particularly in the current economic climate, that regulators at all levels of government consider the impact of their actions and regulations on employment and the economy.

We can begin to accomplish these goals by enacting commonsense, economically sustainable environmental regulation. We call for federal agencies to create a streamlined and predictable regulatory process for developing new energy projects, while ensuring that they are completed in an environmentally responsible manner. Federal regulatory policies should not duplicate effective state regulatory mechanisms for oversight of energy development and production practices. We must ensure that responsibility for implementation of environmental regulations remains a partnership with the states. Far too often, the role of state regulatory authorities is subordinated to Federal agencies. Energy development and environmental protection are mutually supportive and that mutual support is most effectively obtained at the state level.

We support state development and enforcement of regulatory programs that will enable responsible development of our energy resources. State governments should continue to foster and encourage industry's contribution to environmental improvements and best management practices (BMPs). Examples of these programs are found throughout the states. For example, the Wyoming Department of Environmental Quality, in its Nonpoint Source Program, works through voluntary and incentive-based methods with local stakeholders and partner agencies to implement BMPs that reduce or prevent nonpoint source pollution of surface and ground water.

Republican governors also support streamlining the entire federal onshore and offshore energy development process in an effort to provide certainty to developers. Areas to address include leasing, project environmental analysis, and permitting. States should be given maximum flexibility to advance energy development that aligns with each state's unique energy mix. States should be able to design and regulate effective oversight that enables an efficient overall energy policy.

Challenges and Opportunities

The U.S. Environmental Protection Agency (EPA) has proposed and enacted several major rules that could have substantial ramifications for electricity production and generation reliability in the United States. These regulations, enacted under the Clean Air Act (CAA) and Clean Water Act (CWA) and other statutes are expected to impose extreme additional costs on industry, even accounting for potential health-benefits.

Key rules and other regulatory considerations:

- The Utility Maximum Achievable Control Technology (MACT) Rule: EPA estimates the direct benefits of mercury reduction under its new Utility MACT regulation to be no more than \$6 million per year, yet EPA estimates compliance cost to be 1,600 times higher – nearly \$10 billion. And, while EPA estimates only 4.8 to 9.5 gigawatts of lost electric capacity due to enactment of Utility MACT and CSAPR, 59 plants with more than 25 gigawatts of generating capacity have been identified and announced for retirement as a result of these rules.⁴⁰
- The Boiler Maximum Achievable Control Technology (MACT) Rule: A study by IHS/Global Insight concluded that this proposal would risk nearly 800,000 jobs, and that “[e]very billion dollars spent on MACT upgrade and compliance costs will put 16,000 jobs at risk and reduce U.S. GDP by as much as \$1.2 billion.”⁴¹ The Council of Industrial Boiler Owners estimates that the rule may cost \$14.3 billion and put 230,000 jobs at risk. Even the EPA estimates that the installation and maintenance of controls to implement the rule will cost \$487 million per year.⁴²
- The Transport or Cross-State Air Pollution Rule (CSAPR): CSAPR was designed to address air-quality issues in downwind states, but could negatively impact electricity reliability due to unreasonable compliance timelines and financial burdens on electricity providers. The U.S. Court of Appeals for the District of Columbia Circuit ruled 2-1 on August 21, 2012 to strike down the EPA’s proposed CSAPR rule. The court ordered that the Clean Air Interstate Rule (CAIR) remain in place while the EPA reconsiders a new regulatory approach for interstate emissions of sulfur dioxide (SO₂) and nitrogen oxide (NO_x).⁴³
- The proposed Cooling Water Intake Regulation or Section 316(b) of the CWA: 316(b) would impose unnecessary costs on power providers without providing comparable benefits. The rule could negatively impact employment because of rising electricity costs. The EPA is proposing to use public opinion surveys in its cost-benefit analysis of this rule. These surveys would boost the claimed benefits of the rule by up to 14,000%.

⁴⁰ National Mining Association, *EPA Misery Index*, June 2012, www.nma.org.

⁴¹ IHS/Global Insight (for the Council of Industrial Boiler Owners), “The Economic Impact of Proposed EPA Boiler/Process Heater MACT Rule on Industrial, Commercial, and Institutional Boiler and Process Heater Operators,” Aug. 2010. Available at: http://www.cibo.org/pubs/boilermact_jobsstudy.pdf

⁴² Ibid

⁴³ United States Court of Appeals for the District of Columbia Circuit, August 21, 2012.

[http://www.cadc.uscourts.gov/internet/opinions.nsf/19346B280C78405C85257A61004DC0E5/\\$file/11-1302-1390314.pdf](http://www.cadc.uscourts.gov/internet/opinions.nsf/19346B280C78405C85257A61004DC0E5/$file/11-1302-1390314.pdf)

This could set a dangerous precedent for future rulemakings as any agency could theoretically justify any regulation, regardless of cost.

- Utility Green House Gas (GHG) New Source Performance Standard (NSPS): The EPA is proposing new source performance standards (NSPS) for new fossil-fueled plants of 1,000 lb CO₂/MWh. This proposed rule effectively eliminates the possibility of any new coal generation facility until, and unless, carbon capture and storage (CCS) and other new-coal technologies become commercially viable.
- As National Ambient Air Quality Standards (NAAQS) are issued, states must divert resources to comply. Through the proposed revised NAAQS, which the Obama Administration later delayed, EPA was essentially specifying over 500 “do not invest zones” due to an increase in denials of air emissions permits, increased energy costs, and other regulatory burdens on local economies.
- Regional Haze regulations and the Best Available Retrofit Technology (BART) Rule: The uncertainties surrounding the BART rule could lead to a shutdown of the Navajo Generating Station (NGS) in northern Arizona, causing far-reaching consequences for the region. The NGS is a crucial power source, providing 2,250 megawatts of power to customers throughout the southwest, as well as to the Central Arizona Project, a key source of water for central and southern Arizona. The plant also provides significant revenues to the Navajo Nation and Hopi Tribe, as well as other governmental entities in Arizona.
- Before 2010, EPA estimated that 0.02 metric tons of methane was emitted for each natural gas well completion. In 2010, EPA made dramatic changes to its estimates based on a small amount of misapplied data. The new – and flawed – estimates hold that conventional natural gas wells emit 0.71 metric tons of methane, and shale gas wells emit 177 metric tons of methane per well completion. This change leads policymakers and researchers to make life-cycle emission claims that are orders of magnitude greater than actual industry well data suggests and allows those opposed to natural gas production to mischaracterize its clean benefits.
- The Department of Interior has restricted millions of square miles of federal lands and waters from energy development. As mentioned in Chapter 1, the potential yield of these resources is enormous. The resources developed from these lands and waters can advance our energy security by decreasing our dependence on imports from unstable and unfriendly nations. We must allow American technology to produce more American energy.

In 2011, the House passed H.R. 1229, the Putting the Gulf Back to Work Act; H.R. 1230, the Restarting American Offshore Leasing Now Act; and H.R. 1231, the Reversing President Obama’s Offshore Moratorium Act. This suite of bills would end the de facto moratorium on offshore oil and gas exploration. The House also passed H.R. 2021, the Jobs and Energy Permitting Act of 2011, which would provide clarity and predictability

to the permitting process for oil and gas exploration projects on the Outer Continental Shelf.

- The President has pledged to open federal lands for 10 GW of renewable energy production, enough to power 3 million homes, by the end of 2012. We support this and encourage the President to open these lands to traditional energy production as well.⁴⁴
- Revenue sharing needs a cooperative solution between the states and the federal government. In July 2011, several governors wrote a letter to Senate Energy and Natural Resources (ENR) Chairman Jeff Bingaman and Ranking Member Lisa Murkowski urging support by proposed legislation that would allow states to receive a 37.5% share of all revenues collected by the federal government from offshore energy development. Ultimately, the legislation failed in committee, but Republican governors continue to support expansion of revenue sharing beyond the Gulf of Mexico.
- The Bureau of Land Management's proposed rules on hydraulic fracturing on federal lands would add unnecessary bureaucracy to a process that is already effectively regulated at the state level. Governor Matt Mead of Wyoming, Energy and Environment Committee Chairman of the Republican Governors Public Policy Committee, has led the way for Republicans in speaking out in opposition to BLM's proposed rules.

States like Wyoming have set the standard for developing and adopting rules to address flowback water, well-bore integrity, and disclosure of hydraulic fracturing chemicals. The new federal rules are duplicative and would delay and reduce production. States' share in federal revenue from production on federal lands and would be adversely impacted by decreased royalties from unnecessarily delayed projects.

- The permitting process for new nuclear plants through the NRC has made it difficult to undertake development of new nuclear plant projects using the newest designs.

Recommendations

- Republican governors support a cumulative cost-benefit analysis of the barrage of new regulations promulgated and enacted by the EPA including: Utility MACT, Boiler MACT, Greenhouse Gas Rule, CWA 316(b), and other pending rules. We support reconsideration of these rules on the basis of the cumulative cost-benefit analysis.
- We support reform of the NEPA process, which has become inefficient and causes delay and increased costs. Coordination and consistency amongst federal agencies and firm deadlines are key elements of reform.
- Our nation's core environmental statutes have not been modernized in over 20 years while significant environmental progress has been made over those 20 years. The time

⁴⁴ "State of the Union 2012: Transcript." *Washington Post*. The Washington Post, 24 Jan. 2012. Web. http://www.washingtonpost.com/politics/state-of-the-union-2012-obama-speech-excerpts/2012/01/24/gIQA9D3QOQ_story.html

has come to reexamine these statutes and pursue statutory reforms to make certain environmental policy is performance-based, flexible, and responsive to changing costs, technologies, and needs.

- We support reform of the regulatory cost-benefit analysis process. Regulators must consider the true economic and employment impacts of proposed rules and regulations. Any time they examine co-benefits in conjunction with other rules; they should look at “co-costs” and examine the cumulative economic and employment costs of those rules. Consideration must be paid to the timeframe for implementation to ensure that the compliance deadlines are both realistic and minimize market distortions of pricing. Additionally, federal regulators also must conduct look-back cost-benefit analyses to determine whether regulations, after implementation, effectively meet the purpose for which it was adopted.
- We believe that regulations must be developed based on science and facts.
- The Department of Interior should immediately begin the process of opening federal lands and waters for energy production. We believe this can, and should, be done safely and efficiently in order to take advantage of these domestic resources.
- Litigation, rather than statutory review of the NAAQS, has increasingly been the norm for determining air quality standards. The states and private sector need the certainty of established five-year standards, as opposed to moving standards, in order to effectively regulate air quality. We support legislative efforts to provide such certainty.
- We recommend that the environmental review process be limited to one year for any project on federal lands, regardless of type.
- Federal regulatory frameworks should support and encourage research, development, and commercialization of new technologies.

III. Research and development (R&D) and the advancement of new energy technologies and efficiencies are necessary to reduce cost, improve supply, and realize domestic energy security. Education is also a vital part of a 21st century energy economy. Our students must be educated in economics and energy literacy. We need entrepreneurs, scientists, engineers, and visionaries to lead the next generation—for any of this we need high quality education at all levels.

We support cutting edge research at the federal level, but not permanent subsidies. Any public investment should encourage the development of new energy-related technologies. Public investments should not subsidize an unsustainable energy base if not proven cost-effective and competitive with traditional sources of energy in the long-term or if not in line with state goals. The enhancement of traditional energy resources and development of transformative energy technologies integrated at scale are a far more efficient use of taxpayer money than federally-backed venture capital efforts. States differ regarding the amount of federal and state support for technology R&D, deployment, and commercialization. These policy prescriptions warrant further study and deliberation.

We cannot underestimate the power of education in any plan for a new energy economy. There is a need for more plant engineers and operators, technicians, and scientists, as well as basic citizen economic and energy literacy. Science, technology, engineering and mathematics are fundamental disciplines for economic stability and global competitiveness. Each is tied directly and indirectly to energy.

An early interest in energy will create the energy leaders, educators, and innovators of the future. We must work to educate our citizens about energy resources, energy markets, energy security, energy use, and energy conservation and how each is connected to our nation's competitiveness in a global economy. In order to make informed energy choices and judgments concerning competing policy choices, our citizens must understand where our energy comes from and how our nation's energy security is likely to impact their future.

Energy Advancement and R&D

Challenges and Opportunities

- The collapse of Solyndra and other examples of government-backed venture capitalism gone wrong highlight serious programmatic deficiencies in the Obama Administration's approach to energy policy.
- Many are wrongly focused on increasing the costs of traditional fuels instead of lowering the costs of new sources.
- The Advanced Research Projects Agency-Energy (ARPA-E) is tasked with conducting "out-of-the-box" transformational research into new energy technologies. This agency holds much promise.

- National laboratories are, and must continue to be, an important part of our energy innovation system.
- The Department of Defense is doing advanced work in alternative energy. We support the military's work in this field as a means of ensuring the security and effectiveness of our military and recognize that much of today's commercial technology had its beginnings in research and development for military use.
- Technological innovation has played a huge role in allowing America to become nearly self-sufficient in natural gas supply. Hydraulic fracturing and horizontal drilling, products of private-sector innovation, have been instrumental in the recent natural gas production boom in the United States.
- Rare earth elements (REE) are critical to the development of energy systems and more than 97% of world supply of REE comes from China. In 2010, the House of Representatives passed bipartisan legislation (H.R. 6160) that would have established a program within the Department of Energy (DOE) for research and development of REE throughout their life cycle, and broaden existing loan guarantee programs to spur private investment in REE. Senator Lisa Murkowski (R-AK) introduced similar legislation in the Senate (S. 3521). In the 112th Congress, bipartisan sponsors in the House and Senate plan to introduce legislation to support education and research to rebuild and maintain American expertise in critical materials. In addition, the DOE's budget request for FY 2012 would create a new Energy Innovation Hub focusing on REE.⁴⁵ There has not been further action on either bill since committee referral.

Recommendations

- We support efforts to bring down the costs of renewables and develop new energy technologies.
- Competition is a virtue of markets. We must build a competitive market for energy technologies to help bring the costs of new technologies down. It is inefficient and economically destructive to penalize mature and traditional energy sources.
- Republican governors support investments in research development and demonstration (RD&D) on all levels. We oppose market distorting subsidies, particularly to individual market participants, but support market rewards that lead us to energy advancements which compete in the marketplace. Republican governors recognize government's important role in the RD&D process but oppose long-term or permanent subsidies.
- State energy plans should foster and enable public-private cooperation in research, innovation and deployment of new energy technologies.

⁴⁵ *Securing America's Supply of Critical Materials and Rare Earth Elements: Implications for Renewable Energy*. Issue brief. Environmental and Energy Study Institute, 11 Mar. 2011. <http://www.eesi.org/securing-america%E2%80%99s-supply-critical-materials-and-rare-earth-elements-implications-renewable-energy-1>

- The use of master limited partnerships (MLPs) by alternative energy projects could open up significant new sources of private sector finance to clean tech markets.⁴⁶ Likewise, traditional MLPs should be preserved to continue to expand our energy infrastructure and develop new energy resources.
- Governors support market rewards for innovation. One such initiative has been proposed by Virginia Congressman Randy Forbes in his “New Manhattan Project for Energy Independence.” The Forbes proposal appropriates prize money to be awarded to persons for the research and development of the technologies and materials necessary to improve vehicle fuel efficiency and alternative fuel sources, develop and build energy efficient buildings, construct large scale thermal power plants, develop and produce biofuels, advance carbon sequestration, improve nuclear waste disposal technology and develop a sustainable nuclear fusion reaction. In addition, it establishes a commission called the “New Manhattan Project for Energy Independence” that will recommend steps that must be taken to ensure the U.S. achieves 50% energy independence within 10 years and 100% energy independence within 20 years.⁴⁷

Privately funded prizes have been increasing in popularity in recent years as we’ve seen in the example of the X Prize Foundation, which in 2010 offered a \$1.4 million prize for anyone who came up with a faster way to clean oil spills from the ocean. Many foundations such as the Gates Foundation have also instituted their own prizes. According to scholars, a well designed prize can “change what people believe to be possible.”⁴⁸

Governors could support either a fixed-cost federal prize, created in some sort of public private partnership with institutions, foundations, and industry or a state-based consortia or MOU, leveraging minimal state funds and private dollars.

- Governors support efforts to secure supplies of rare earth elements critical to our economy. Nevada recently commissioned two white papers on its rich deposits of rare earths and lithium describing the extraction, R&D, and commercialization full stream market potential for these valuable minerals.
- Republican governors support investment in technological developments related to energy storage.

⁴⁶ *Master Limited Partnerships: A Policy Option for the Renewable Energy Industry*. Rep. Congressional Research Service, 28 June 2011.

<http://www.ieeeusa.org/policy/eyeonwashington/2011/documents/masterlmtpartnerships.pdf>

⁴⁷ New Manhattan Project for Energy Independence, HR 301, 112th Cong. <http://www.gpo.gov/fdsys/pkg/BILLS-112hr301ih/pdf/BILLS-112hr301ih.pdf>

⁴⁸ "And the Winner Is... Offering a Cash Prize to Encourage Innovation Is All the Rage. Sometimes It Works Rather Well." *The Economist*. The Economist Newspaper, 05 Aug. 2010. Web. 15 May 2012.

<http://www.economist.com/node/16740639>.

Education

Because energy is a critical driver of the global economy, energy literacy, science, technology, mathematics, engineering (STEM), and skills-based training will be essential components of our educational system if we are to be competitive in the 21st century economy.

Challenges and Opportunities

- Energy education is absent in most K-12 curricula throughout the country. Young people do not understand or comprehend even the basic reality of power generation, electricity, transportation, and resource diversity.
- We invest little in energy science and engineering scholarships and fellowships.

Recommendations

- Republican governors support integrating energy education into school curricula. Energy is relevant in many disciplines including science, mathematics, civics, and economics. We also support the development of creative partnerships to provide teacher training as well as funding for energy related scholarships, fellowships, and research grants.
- We pledge to work with our state universities to foster innovative research and STEM training for a new generation of leaders in energy, engineering, and other vital fields.
- Republican governors recommend additional focus on skill specific training through business and workforce investment board cooperation. Many jobs in the energy sector require certified skills training. For example, the nuclear industry is working with universities and community and technical colleges to prepare the industry workforce of the future. The nuclear industry's uniform energy curriculum, offered at more than 50 community colleges nationwide, qualifies workers across several disciplines in the nuclear energy workforce, defines the curriculum needed to develop those workers, and implements the right number of programs in each region of the country.

Conclusion: The Republican Governors' Vision for an American Energy Strategy

Our nation's history is filled with examples of technological advancements, great inventors, and a culture infused with the desire to explore and innovate. Much advancement has been catalyzed by access to abundant energy resources and directly tied to energy innovation. Republican governors believe that American ingenuity, innovation, and abundant, diverse energy resources can preserve and expand our nation's greatness, if managed effectively.

Throughout this report we have illustrated how governors, working with local and federal officials, believe that our energy and environmental future can be effectively managed so that we increase **energy security** in order to ensure a stable energy supply for our citizens, manufacturing, power generation, transportation, and industrial base. Energy security can be achieved by safely developing our domestic energy resources in environmentally responsible ways; exploring additional energy technologies to diversify our transportation fuels; and coordinating with our allies on energy production.

We also believe that we can **continue to promote energy affordability** which allows all Americans to take advantage of our country's robust energy resources to power communities and create jobs, by ensuring regulatory certainty; relying on sound science and facts for the regulatory process; performing comprehensive cost-benefit analyses; and working to lower the cost of new energy technologies.

We recognize that **energy is an economic driver** which powers almost every facet of modern life. Energy and environmental policy are inseparable from economic success. Without energy, our economy cannot grow and without a growing economy, we cannot afford high levels of environmental protection.

We have made the case that we must **build on our tradition of environmental cooperation** that protects the role of the states in the state-federal partnership, provides for sustainable environmental protection, acknowledges that environmental gains are supported by economic progress, and it ensures that state governments have a primary role in regulation. Cooperation can be ensured by supporting legislative efforts to provide regulatory certainty, by reforming many of the environmental regulatory processes and statutes to dramatically reduce timeframes and permitting costs; and by opening federal lands and waters to safe and efficient new energy production.

Republican governors recognize the importance of a true "all of the above" energy policy that includes responsible development of all our nation's diverse energy resources competing in the free-market. In 1915, Winston Churchill noted that "[s]afety and certainty in oil lie in variety and variety alone." Churchill's observation seems especially prescient today. Variety will be a key factor in any American energy security strategy. In order to make certain that Americans have access to various energy resources and technologies, we must pursue innovation, open up markets, and avoid the types of regulatory overreach that diminish our opportunity to take advantage of the diverse, reliable, affordable, and domestic sources of energy that are ready and waiting to power an American Renaissance.