



United States Senate Committee on **Energy & Natural Resources**

Chairman Jeff Bingaman

Democrat - New Mexico

American Clean Energy Leadership Act of 2009

Clean Energy Technology Deployment

Creates Clean Energy Financing for the 21st Century

This legislation is a bipartisan effort to position the U.S. to lead the development of clean energy by ensuring that commercial financing for clean, new technologies is readily available for future energy use right here in America.

Implements a series of reforms to the existing Department of Energy loan guarantee program, including creating a new "Clean Energy Investment Fund" to allow collected costs to be used to support more technology deployment. The legislation also creates a new entity housed in DOE -- the Clean Energy Deployment Administration (CEDA) -- with strong financial expertise and with a specific purpose to create an attractive investment environment for the development and deployment of clean energy technologies.

- CEDA would be an independent administration within DOE, like the Federal Energy Regulatory Commission. It would be governed by a board of directors and an administrator, all of whom would be appointed with the advice and consent of the Senate. CEDA will also have a permanent Technology Advisory Council to advise on the technical aspects of new technologies and to help set goals for the administration.
- The agency would provide various types of credit to support deployment of clean energy technologies, including loans, loan guarantees and other credit enhancements as well as secondary market support, to develop products such as clean energy-backed bonds that would allow less expensive lending in the private sector. The agency would also seek to accommodate riskier debt and thus provide a mechanism for deployment of the most innovative technologies.
- CEDA's mission would be to encourage deployment of technologies that are perceived as too risky by commercial lenders; thus, the agency is encouraged to back riskier technologies with a higher potential to address our climate and energy security needs. The agency is to use a portfolio investment approach in order to mitigate risk and is to try and become self-sustaining over the long term by balancing riskier investments with revenues from other services and less risky investments.
- CEDA would be an autonomous entity with strong guidance and aggressive goals for technology deployment set by an independent advisory council, in consultation with the Secretary of Energy. The bill sets out a process for goal-setting in the various areas and then mandates numerical targets for achieving the goals, against which the performance of CEDA may be judged. There would be various levels of financial oversight, including audits by the comptroller general and unfettered access to the books of CEDA by the Energy Secretary.

Makes the Promise of Renewables Come True

A strong renewable electricity standard (RES) is an essential component of any comprehensive national energy policy, not just an important part of such a strategy, but an essential component. A national RES also will reduce our greenhouse gas emissions, increase our energy

securit, and enhance the reliability of the electricity grid by creating more homegrown renewable energy.

Rapidly ramps up clean, domestic sources of electricity by requiring the gradual increase of the amount of renewable energy utilities produce.

- Sellers of electricity must obtain the following percentages of their electricity from renewable energy resources or from energy efficiency improvements:

<u>YEAR</u>	<u>%</u>
2011-2013.....	3
2014-2016.....	6
2017-2018.....	9
2019-2020.....	12
2021-2039.....	15

- Utilities selling less than 4 million megawatt hours per year are exempt.
- Qualifying Renewables are: wind, solar, ocean, geothermal, biomass, landfill gas, incremental hydropower, hydrokinetic, new hydropower at existing dams with no generation.
- Ways of meeting the standard are: Produce the specified amount of electricity or efficiency savings itself; purchase renewable energy or efficiency savings; Purchase renewable energy credits or energy efficiency credits from entities who have excess; Make alternative compliance payments to the Secretary at a rate of 2.1 cents per kilowatt hour. Payments are made directly to states whose utilities have paid into the fund, for development of renewable resources, or to offset increases in customer's bills.

Will Link the Country with a Reliable Transmission Grid

With this legislation millions will benefit from the jobs that come to the states where the generation is located and from the electricity that is carried to customers throughout the country.

Establishes the policy that the transmission infrastructure should be guided by the following goals: support for development of renewable generation; opportunities for reduced emissions; cost savings resulting from reduced congestion, enhanced opportunities for trades, reduced line losses, generation sharing; enhanced fuel diversity; reliability benefits; diversification of risk; enhancement of competition and mitigation of market power; ability to collocate facilities on existing rights-of-way; competing land use priorities; the needs of load-serving entities; and the contribution of demand response, energy efficiency and distributed generation.

- Requires FERC to coordinate development of an interconnection-wide plan that achieves the policy goals, from plans developed by current planning entities; FERC must promulgate a rule to embody the policy goals and develop a schedule to implement those policies within one year of enactment.
- Transmission planning entities shall develop regional plans and submit them to FERC within 24 months. The Commission will encourage joint submissions and submission of interconnection-wide plans. FERC may require modification of submitted plans to ensure conformance to planning principles and to reconcile inconsistencies.
- FERC shall periodically evaluate whether projects in the interconnection-wide plan are being developed, and if not take actions, in accordance with other provisions of law, to address identified obstacles.
- Make recommendations to Congress for further actions or authority needed to ensure development of timely projects.

- Update the plan every three years.
- Allows States one year from time of filing of a proposal to site a high priority national transmission project.
- Gives FERC jurisdiction over siting when states have either been unable to site the facility or have denied the application.
- Jurisdiction is over facilities 345 kilovolts and above that are included in the transmission plan.
- Gives the Department of the Interior lead agency status for development of records of decision on public lands.
- FERC must establish, by rule, appropriate methodologies for allocation of costs of high priority national transmission projects.
- Such methodologies derived from the cost allocation must be just and reasonable and not unduly discriminatory or preferential.

Balances Energy Efficiency with Water Efficiency

Ensures a better understanding of the interdependence of energy and water, and begins integrating decision-making related to both resources.

This legislation is intended to promote a better understanding of the interdependence of energy and water, and begin integrating decision-making related to both resources. Large amounts of water are consumed in generating electricity and producing fuels. Likewise, the delivery and treatment of water supplies consume massive amounts of energy. With the exception of certain renewable energy sources, building more power plants and creating new fuels will impact scarce water resources. Similarly, as water demands increase, more energy will be required to produce and treat the water. The interdependence between energy and water requires policies that rely on sound data to promote efficient use of both resources. This legislation contains the following elements relating to energy and water.

- National Academy Energy-Water Study – requires the National Academy of Sciences to assess water use associated with developing fuels in the transportation sector, and the water consumed in different types of electricity-generation.
- Power Plant Water Use Study – directs the Secretary of Energy to identify the best available technologies and develop other strategies to maximize water and energy use efficiencies in producing electricity.
- Reclamation Water Conservation & Energy Savings Study – directs the Bureau of Reclamation (BOR) to evaluate energy use in storing and delivering water from Reclamation projects, and identify ways to reduce such use through conservation, improved operations, and renewable energy integration.
- BOR Brackish Groundwater Desalination Facility (Alamogordo, NM) – establishes research priorities for the Facility, including a requirement to develop renewable energy technologies that will integrate with desalination technologies.
- Energy Information Administration Energy for Water Use Assessment – requires the Energy Information Administration to analyze the energy consumption associated with the acquisition, treatment and delivery of water for a variety of uses.
- Energy-Water Roadmap – directs the Secretary of Energy to develop an Energy-Water Research and Development Roadmap to define the future efforts necessary to address water-related challenges relating to sustainable energy generation and production.

- Energy-Water Clean Technology Grant Program – establishes a grant program for development of technologies that reduce the consumption of, or conserve, energy supplies and promote water conservation activities.
- Rural Water Utilities Energy and Water Efficiency Program -- requires the Secretary of Energy to provide technical assistance to rural water utilities relating to the development of alternative and renewable energy supplies and water conservation.
- Comprehensive Water Use and Energy Savings Study – directs the Secretary of Energy to study the interrelated nature of water and energy use and identify opportunities to reduce energy consumption and associated costs through the use of water conservation and water management strategies such as water reuse and the development of nonpotable water sources.

Increases Production of Renewable Energy on Public Lands

The development of renewable energy on our public lands holds great promise. For example, the Bureau of Land Management (BLM) manages over 20 million acres of land with wind energy potential and over 30 million acres with solar potential, and there is an active geothermal program on public lands. The bill will enhance the efficient and appropriate use of our public lands for renewable energy development while addressing the need for a reasonable return to the taxpayer, as follows:

- Improves permit coordination by establishing permit processing offices;
- Requires BLM to undertake a programmatic environmental impact statement on solar development and the Forest Service to do the same for wind, solar and geothermal development; and
- Requires the Secretary to establish pilot projects and authorizes the establishment of a leasing program if warranted by the results of those projects for wind or solar energy on public lands.

Enhanced Energy Efficiency

Improves U.S. Manufacturing Energy Efficiency

Confronts the challenges in the U.S. manufacturing sector by helping industries boost productivity while using less energy. This bill will create millions of high-quality jobs and help ensure that America retains its position as a top innovator of clean energy technologies.

This provision is aimed at renewing America's industrial sector by using less energy, reducing carbon emissions and producing the technologies that will help the U.S. (and world) reduce its reliance on fossil fuels.

It takes critical first steps in revitalizing our nation's manufacturing base by increasing our industry's energy productivity by:

- Establishing financing mechanisms for both small and large manufacturers to adopt advanced energy efficient production technologies and processes which will allow them to be more productive and less fuel dependent, cutting costs, not jobs.
- Spurring innovation in our manufacturing sector to decrease energy intensity and environmental impacts while increasing productivity. The bill establishes industry-led partnerships to develop industry-specific roadmaps to identify the breakthrough technologies necessary to reduce energy intensity and greenhouse gas emissions. It also stimulates, through competitive grants to industry and small businesses, the development, deployment and commercialization of innovative energy efficient technologies and processes.

- Expanding the number and expertise of the Industrial Research and Assessment Centers to better meet the needs of small and medium manufacturers. The bill also provides for workforce training through paid internships at the centers for students to work with industries and manufacturers to implement energy efficiency technologies.
- Establishing a Clean Tech Supply Chain Study that directs the Secretary of Energy to enter into an arrangement with the National Academy of Sciences to develop a report on developing the critical elements of and capabilities for the clean tech supply chain in the U.S. that will be necessary for the production of clean energy technologies and to prevent their production from being shifted overseas.

Makes Consumer Products More Energy Efficient

Helps to reduce national energy demand, the environmental impacts of energy production, and saves consumers money by strengthening existing appliance energy efficiency programs. For example, the bill will establish federal standards for table and floor lamps. This provision alone is expected to save enough electricity by 2020 to serve 350,000 homes.

It strengthens and improves two Federal energy efficiency programs that have a 20-year record of success: the Department of Energy's appliance standards program and the joint DOE-EPA Energy Star program.

DOE's appliance standards program targets the low-end of the efficiency spectrum by establishing minimum energy efficiency standards for dozens of products. Mandatory standards phase out the production and sale of the least efficient models of a product. The Energy Star program, in contrast, targets the high-end of the efficiency spectrum, using voluntary labeling to promote the development and sale of the most highly efficient products.

- Establishes initial minimum energy efficiency for portable light fixtures (table and floor lamps) and directs DOE to establish standards for commercial furnaces and certain light bulbs.
- Establishes a rebate program to purchase and install new large electric motors. Electric motors are one of the single largest users of electricity, but old inefficient motors are now usually rebuilt, instead of being replaced with highly efficient models.
- Strengthens the DOE standards and Energy Star programs by establishing processes for stakeholders to petition to revise program test procedures and standards, and requires the agencies to provide a timely response.
- Directs DOE to complete studies on: 1) compliance with the DOE appliance energy standards; 2) the costs and benefits of requiring direct-current electricity in buildings; and 3) assessing the use of electric motors and the electric motor market.

Increases Building Efficiency

The U.S. buildings sector consumes 72% of electricity, 55% of natural gas and 40% of U.S. primary energy. This is a larger share of energy than either the transportation or industry sectors. Investments in building efficiency are among the most cost-effective measures for reducing greenhouse gas emissions and saving energy.

The programs included in the Buildings title would improve the energy efficiency of new and existing buildings and would provide credible and consistent information to consumers about the energy performance of buildings. Key programs include:

Advanced building codes:

- This provision directs the DOE to set energy savings improvement targets for residential and commercial national model building energy codes at 30% in 2010 and 50% after 2016. The

Secretary may, before 2013, adjust the 50% target date for one or both codes if he determines that a 50% target cannot be met in 2016.

- The Secretary is authorized to set further energy savings targets at the maximum level of energy efficiency that is technologically feasible and life cycle cost effective and on a path to achieving net-zero-energy or “carbon neutral” buildings.
- The Secretary is directed to work with the national model codes bodies (ASHRAE and the International Code Council) to assist them in meeting these targets. Within one year after the new codes are updated, DOE is required to determine whether the IECC or ASHRAE 90.1 codes meet the efficiency targets; if not, DOE is required to propose modifications to the codes to meet the targets.
- Each State shall certify whether or not it has reviewed the model codes and updated the provisions of state codes regarding energy efficiency and whether or not the State has achieved compliance with the building codes.
- The provision would also significantly increase DOE funding assistance to the States for code compliance, technical analysis, training, and financial assistance.

State energy efficiency retrofit programs:

- Authorizes competitive grants to states to carry out retrofit programs for residential and commercial buildings. The programs, modeled on the current EPA/DOE program “Home Performance with Energy Star,” address many of the barriers to energy efficiency retrofits. Building owners would be eligible for financial incentives to help finance up to 50% of most retrofits, and would have access to certified contractors. Energy savings would be documented through a HERS rating or other approved ratings programs.

Home Energy Retrofit Finance Program:

- Authorizes grants to states to capitalize state revolving finance funds. Funds could be used for building retrofit programs, including municipal programs that allow owners to finance energy improvements through property tax bill payback, and energy utility programs that offer “on-bill” financing, as well as traditional financing.

Building Energy Performance Information Program:

- Authorizes the creation of model energy performance labels for commercial and residential buildings and encourages voluntary implementation of building labeling programs. The purpose of the labeling program is to provide information on building energy performance that would allow consumers and building owners to identify needed efficiency improvements and to compare similar buildings.

Federal Building Efficiency:

- Includes clarifying provisions related to energy savings performance contracts that will enhance the ability of federal agencies to meet goals for renewable energy and efficiency.

National Energy Efficiency Goals:

- Establishes goal to achieve an improvement of the nation’s energy productivity of at least 2.5% annually by 2012.

Evaluation, measurement and verification of energy savings:

- Directs the Secretary to promulgate uniform rules for the evaluation, measurement and verification of energy savings from efficiency programs.

Promotes Distributed Generation

Distributed generation is one of the ways that we can both meet electricity demand growth and meet our environmental goals and save consumers money by avoiding the need for new generation and transmission upgrades. This legislation removes one of the largest barriers to the rapid deployment of distributed generation by harmonizing the current patchwork and streamlining complicated regulations and processes. It does that by directing FERC to establish a national interconnection standard for small power production facilities (15 kW or less) which would cover nearly all residential-sized distributed generation.

Improved Energy Security

Aids in Thwarting Cybersecurity Threats

The American Clean Energy Leadership Act addresses the gaps in federal authority against cybersecurity dangers and will protect the U.S. against such an attack.

- Cybersecurity Threat means the imminent danger of an act that disrupts or attempts to disrupt the operation of electronic devices or communications networks for the control of critical electric infrastructure.
- FERC must promulgate rules or orders necessary to protect against cybersecurity vulnerabilities.

FERC may issue such rules without prior notice or hearing if it determines that the rule or order must be promulgated immediately to protect against cybersecurity vulnerability.

If immediate action is necessary to protect against a cybersecurity threat, the Secretary may require, by order, with or without notice that entities subject to the jurisdiction of the Commission under this section, take such actions as are necessary to protect against that threat.

Addresses Nuclear Waste Management

Establishes a Federal advisory commission to conduct a comprehensive study of alternative means of safely managing or disposing of spent nuclear fuel and high-level radioactive waste.

- The purposes of the National Commission are to conduct a comprehensive study of alternative means of safely managing or disposing of spent nuclear fuel and high-level radioactive waste from civilian nuclear activity and atomic energy defense activity; and to recommend to Congress such legislative or other action as may be necessary to manage or dispose of spent nuclear fuel and high-level radioactive waste successfully and safely.
- Expresses a sense of the Congress on the importance of nuclear energy and authorizes additional research on recycling of spent nuclear fuel.

Improves U.S. Strategic Reserves

Guarantees that the energy to fuel our cars is readily available during times of emergency by requiring the Department of Energy to hold at least 30 million barrels of the total 1-billion-barrel SPR inventory in refined petroleum products, such as gasoline and diesel fuel.

Our domestic oil market has changed and we must have a more sophisticated strategy to react to disruptions in our oil supply. While we are more dependent on imported crude oil than ever before, we also import more refined petroleum products. When U.S. refinery operations are disrupted, imported products from other countries are required to fill the gap. This legislation would provide a needed cushion while damaged infrastructure is repaired.

- Requires the Department of Energy to hold at least 30 million barrels of the total 1-billion-barrel SPR inventory in refined petroleum products, such as gasoline and diesel fuel.
- Authorizes the Secretary of Energy to make decisions regarding the drawdown of the SPR.

Aids Island Energy

The United States includes islands such as Puerto Rico, the Virgin Islands, Guam and American Samoa; they all have unique energy needs. This provision builds upon the Island Energy provisions of EPACT 05, which required updating of the 1982 Territorial Energy Assessment and authorized feasibility studies of the most promising projects. As a next step, this provision would direct DOE to establish a team of experts to assist the U.S.-affiliated islands in developing and implementing an Action Plan to evaluate the feasibility and implement the most promising projects.

Protects Consumers Additional FERC Market Authority

The Federal Energy Regulatory Commission is granted the same cease-and-desist authority that is already held by other regulatory bodies, such as the CFTC and SEC, empowering FERC to stop improper market behavior as soon as it is detected. FERC also gains authority to prevent the dissipation of assets, so that actors found guilty of market manipulation cannot get out of paying the fine by playing a shell game with the regulators, moving all their assets to other parts of the business that are out of reach.

Increasing Responsible Production of Traditional Energy Sources

Quantifies Our Domestic Marine Resources

Requires the first complete inventory and analysis of marine resources in the Atlantic, Gulf and Alaska regions, including seismic exploration of oil and gas in the outer continental shelf, and provides direct spending and authorizes appropriations to get this done. The report must also provide data on other marine resources, including the potential for alternative energy development, navigation uses, fisheries, aquaculture uses, habitat, conservation and military uses.

- Priority will be given to areas with the greatest potential for energy production and the first inventory must be available within 2 years of enactment.

Increases Domestic Production of Offshore Oil and Gas

Will open new resource-rich areas in the Eastern Gulf of Mexico to oil and gas production, including Destin Dome and the Eastern Gulf planning area. In the Eastern Gulf area, no development can occur within 45 miles of the coastline.

Improves Efficiency in Energy Production Permitting

Extends the current pilot offices for permit processing for oil and gas development for an additional five years, through 2020; and requires the Secretary of Interior to establish a regional joint Outer Continental Shelf lease and permit processing office for the Alaska region to ensure efficient and coordinated permit processing by all relevant federal agencies.

Provides for expedited leasing for geothermal development in areas in which production is already occurring under an existing federal oil and gas lease and in which co-production is possible.

Facilitates of Natural Gas Pipeline Expansion

In creases the amount of federal guarantee available for financing of an Alaska natural gas pipeline to \$30 billion, extends the time period for issuance of guarantee instruments, and makes other changes to facilitate the responsible financing of this pipeline.

Authorizes the Secretary of the Interior to issue rights-of-way for a high-pressure natural gas transmission pipeline in non-wilderness areas within the boundary of Denali National Park near the current road through the park, and sets forth terms and conditions required to ensure that it complies with applicable existing laws.

Requires Responsible Return to the Taxpayer

Repeals the 2005 law that prevents the Secretary from collecting royalties for certain offshore energy development, and returns to the usual approach of giving the Secretary the discretion to provide royalty relief in certain circumstances. Will prevent unjustified windfalls to the oil and gas industry and provide a reasonable return to the taxpayer for the use of federally-owned waters.

Requires that the Director of the Minerals Management Service, the component of the Department of the Interior that manages the collection of revenues from energy development on public lands and waters, be appointed by the President with the advice and consent of the Senate. Currently this position does not require Senate confirmation.

- Requires that any Director of the Minerals Management Service be appointed by the President, by and with the advice and consent of the Senate.

Energy Innovation and Workforce Development

Increases Research and Development

The Energy Innovation and Workforce Title proposes to double the authorization level of Department of Energy's energy R&D program from \$3.28Bn in fiscal year 2009 to \$6.56Bn in fiscal year 2013. The title includes provisions addressing large energy R&D grand challenges that are inherently interdisciplinary while enhancing training for energy utility technicians across all segments of the energy industry including advanced education for the subsurface geosciences and engineering fields.

Facilitates Carbon Capture, Transportation and Storage

Carbon capture and geologic storage holds promise as a measure that can be used to mitigate global climate change and this legislation establishes a national indemnity program through the Department of Energy for up to 10 commercial-scale carbon capture and sequestration projects to ensure this energy technology is fully realized for the future.

- The legislation establishes a national indemnity program through the Department of Energy for up to 10 commercial-scale carbon capture and sequestration projects.
- The legislation also sets qualifying criteria that will help to ensure that critical early-mover projects will be conducted safely while addressing the growing concerns of reducing greenhouse

gas emissions from industrial facilities, such as coal and natural gas fired utilities, cement plants, refineries and other carbon intensive industrial processes.

- The legislation also maps out a clear framework for final closure and longtime stewardship for a geological storage sites for carbon dioxide.

Energy Markets

Improves Energy Market Information

This legislation consists of several measures designed to increase the transparency of our energy markets.

- The Energy Information Agency (EIA) is directed to collect new data identifying all physical petroleum holdings of the fifty largest oil traders, as determined by the CFTC.
- A new Financial Market Analysis Office is created within EIA. Each of these measures is designed to help to help to shed some light on the elusive connection between the financial and physical oil markets.
- It creates a working group on energy markets, and requires that group to report to Congress both its assessment of the factors influencing oil prices, and also its recommendations for regulatory changes that might make markets function more smoothly in the future.

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