Passage of the Continuing Resolution: Impacts on the Department of Energy

Executive Summary
Passage of the Continuing Resolution as amended would greatly impact every Department of Energy program office. It would derail key elements of our progress toward developing a clean energy economy. The CR’s proposed funding levels do not reflect America’s needs in 2011, nor do they reflect the portfolio of investments we need to win the future. Furthermore, many of the proposed cuts would not even be a cost-effective means to savings, as the Fiscal Year is halfway over.

National Nuclear Security Administration
- Many U.S. commitments to reduce the threat of nuclear materials worldwide would be compromised, leaving materials vulnerable to terrorist theft and undermining our national security.
- Nuclear weapons life extension and production capabilities will be reduced and/or delayed.
- 22% reduction for Naval Reactors would cause a 6 to 9-month delay to the overall shipbuilding program due to personnel reductions and limited reactor plant design activities.

Office of Science (OS)
- Thousands of highly skilled scientists, engineers, technicians, and support personnel and contractors will lose their jobs at national labs and universities.
- Several major user facilities at national labs would be shut down, temporarily shuttered, delayed or less available to their extensive user communities.
- The Early Career Research and Graduate Fellowships Programs and support for hundreds of PhD researchers and graduate students as U.S. universities would be terminated. This young talent is the foundation for tomorrow’s scientific and technological workforce, and Congress’ commitment to global competitiveness and long-term energy security would be called into question.
- Procurements, goods and services to be provided for projects underway would be immediately terminated or delayed, hurting local suppliers, construction workers, and contractors.

Advanced Research Projects Agency-Energy (ARPA-E)
- The CR would allow only $50 million for ARPA-E, providing for only one new program.
- ARPA-E has experienced unprecedented success in generating $4+ of private investment for every $1 and addresses the “valley of death” in potentially transformative, early stage energy technologies not otherwise addressed by DOE or industry.
- The CR would greatly impede DOE’s ability to swiftly address technical areas such as rare earths, thermal batteries, and high efficiency generation.
- The extraordinary scientific talent recruited by ARPA-E as program managers will be difficult to retain and new talent will be even more difficult to attract.

Office of Energy Efficiency and Renewable Energy (EERE)
- At least 4000 clean energy jobs will be directly eliminated. The number of temporary contractor jobs lost, and those lost in firms providing supplies, etc. for EERE-funded projects, will be much higher.
- The number of homes DOE can weatherize will fall from 31,000 to 0. This represents $250-300 million in lifecycle savings lost, and will hurt low-income families already struggling in this downturned economy. 8000 people working in Weatherization will be out of work by July 1, 2011.
• Decreased support for State Energy Programs will limit efficiency aid to small businesses and families, which saves $300 million in energy costs annually & leverages $10 in private money for every $1 spent.
• U.S. will be less competitive with China, Germany, Japan and Korea on solar and battery technologies, as well as the manufacturing opportunities for these commercial products.
• Research on wind energy, including offshore wind, would be curtailed at NREL, the University of Alaska, Sandia National Lab. Wind Manufacturing & Supply Chair R&D would be eliminated, hurting innovative designs and processes that keep jobs in the U.S.
• Optimization projects in dozens of hydropower facilities around the country will be cancelled or delayed, and programs supporting innovations in high-efficiency hydro technologies will be eliminated.
• Key goals for efficiency and cost improvements in clean and domestically available energy sources, such as geothermal and biomass technologies, will likely be unmet.

Loan Programs Office (LPO)
• The CR would decimate the Loan Guarantee Programs and pull the rug out from under dozens of companies that have already spent thousands, if not millions, on preparing meritorious projects that have already received, or are in the final stages to receiving, funding commitments.
• Private investors in these meritorious projects will, in turn, withhold or withdraw their support.
• Without the loan guarantees, these projects – which are slated to create tens of thousands of new, clean energy jobs across dozens of states – will struggle to get built.
• With $25 billion in authority cut from Section 1703, DOE’s ability to support advance fossil projects and renewable energy projects would be rescinded.

Office of Nuclear Energy (NE)
• R&D on reactor and fuel cycle technologies, including Small Modular Reactors, Nuclear Energy Enable Technologies, Light Water Reactor Sustainability, advanced fuels and fuel efficiency, and advanced modeling and simulation activities, would be blocked or significantly reduced.
• The U.S. competitive edge on nuclear technologies would be greatly compromised, as would any resurgence of nuclear energy production at home.
• Support for university R&D and infrastructure, which in FY2010 went to 49 universities across 31 states, would be significantly reduced.
• Restart of Pu-238 production would be delayed, impacting our ability to fuel our own NASA missions.

Office of Electricity Delivery and Energy Reliability (OE)
• Efforts to transform our fast-aging electric grid infrastructure, ensure compatibility for renewable energy sources, and increase reliability and efficiency would be diminished.
• Utility companies and financial investors will lose confidence in the government’s commitment to a clean energy economy and more efficient transmission, and much-needed technical assistance for states and regional entities would be curtailed.
• Reduced Cyber Security and Infrastructure Security programs would compromise U.S. defense of the electric grid and our communication networks against hostile attacks.
• Smart Grid R&D and infrastructure reductions would hinder national goals for plug-in electric vehicles, and advanced modeling research would be virtually eliminated.
Office of Environmental Management (EM)
- A variety of Defense Environmental cleanup and Decontamination activities at Hanford, WA, the Savannah River, Portsmouth, OH, Oak Ridge and Idaho National Lab would be blocked or delayed.
- The federal government would default on its moral and legal obligation to clean up its mess from the Cold War.
- These delays would also cause the lifetime costs of completing the projects to be much greater due to lawsuits, fines and scheduling challenges.

Office of Fossil Energy (FE)
- The Strategic Petroleum Reserve (SPR) would be slashed by 40%, causing a total shutdown of SPR and termination of all activities. Hundreds of SPR contractors and security personnel in LA and TX would be laid off. DOE would be forced to breach an international treaty, fail to comply with state laws on underground oil storage, and allow the continued operation of a faulty storage cavern in LA, posing major environmental risks.
- An $18M rescission from funds remaining in the Clean Coal Technology (CCT) account that support the close out of several CCT, Power Plant Improvement Initiative (PPII), and CCPI projects would be rescinded.

Energy Information Administration
- EIA’s International Program would be cancelled. The Program performs modeling and analyses on global trends, providing critical info for U.S. policymakers and businesses as energy demand in developing countries grows exponentially.
- Several key surveys on petroleum, electricity use, consumer prices, Commercial Buildings Energy Consumption, efficiency, energy company finances and biodiesel would be terminated, and other surveys greatly delayed.
- The states, businesses, lawmakers, teachers and the public would have less access to the quality information that they need on energy production and consumption.

Across all Programs:
The sudden budget cuts in the CR would cause many programs to be in non-compliance with mandates, deadlines, reporting requirements established by Congress and by Executive Order. They would cause programs to default on memorandums of understanding (MOUs) with other agencies. U.S. commitments in several international collaborations would be cancelled, delayed and/or underfunded, which may negatively impact U.S. relations with foreign partners. Layoffs would be late-notified, requiring additional expenses in severance pay, along with early retirement expenses.
National Nuclear Security Administration

H.R. 1 would adversely impact NNSA and limit our ability to support the President's National Security agenda, including implementation of Nuclear Posture Review (NPR) recommendations, and the President’s 4-year plan to secure vulnerable nuclear materials. Impacts will be exacerbated by the fact that H.R. 1 funding is below current operating levels with the exception of NR. The Bill also rescinds prior year balances in 3 of the 4 accounts, further limiting our flexibility to address emergent requirements.

Office of the Administrator

- **Immediate hiring freeze** would be enforced, and mission critical positions across the complex would not be backfilled.
- **Major restrictions to federal travel will compromise our ability to support mission requirements, including Presidential and DoD priorities.**
- **A reduction of approximately 50 support service contractors would be required (25-30% reduction).** This may not be possible due to the legality of the contractual agreements.
- **We would not be able to fund high priority emergent federal initiatives in FY 2011**
  - Workforce Planning study
  - PPBE enhancements in Defense Programs.

Weapons Activities

- **Proposed level is $312M below the FY11 request and the current anomaly.** Achieving these reductions 5 months into the year will result in significant impacts across the nuclear security enterprise.
- **Main challenge is to fully support the NPR commitments in a timely way.**
- **Potential adverse impacts to the following activities:**
  - Ramp-up to full production for the W76 LEP (PTX, Y-12 and KCP)
  - B61 and W78 LEP studies (LANL-NM and LLNL-CA)
  - W88 ALT due to slower ramp up to First Production Unit (PTX, Y-12 and KCP)
  - Increased stockpile assessment and certification within Science, Technology, and Engineering, and subcritical experiments at NNSS in support of these efforts (labs and NNSS)
  - Diagnostics for NIF weapon physics shots will be delayed by more than one year (LLNL, CA)
  - Delays build up to 10 pits per year under Plutonium Sustainment (LANL, NM)
  - Unable to support the ramp up of approximately 408 FTEs at LANL, SNL, and KCP to support NPR commitments

Defense Nuclear Nonproliferation

- **Undermines progress made in making our nation safer and puts at risk the goal of securing vulnerable nuclear materials by the end of 2013**
- **Unable to remove hundreds of kilograms of highly enriched uranium (HEU) from countries with unsecure facilities that are vulnerable to terrorist theft.**
  - Shipments already planned will be delayed and
  - Contracts cancelled for procurements and technical work will cost us U.S. jobs and incur penalties
- **Unable to recover and secure radiological material needed for dirty bombs both in the U.S. and overseas.**
Critical security upgrades at 70 hospitals and universities that use radioactive sources every day for life-saving procedures in NY, CA, IL, MA, and TX risk being delayed.

Unable to work with partner countries to upgrade security at over 50 vulnerable radiological facilities in Russia and the FSU, Mexico, Africa, the Middle East, and Asia.

- **Force indefinite delays in converting 6 of the most vulnerable reactors from HEU to safer LEU.**
- **Delays the establishment of reliable domestic source for Moly-99 by 2 years.**
- Loss of critical capability to develop and deploy technologies needed to monitor the nuclear activities of other countries and detect nuclear weapons tests.
- **Unable to complete construction projects** necessary to eliminate our own excess weapons materials, resulting in cost increases and delays in the US disposition program,
  - Approximately **350 lost jobs** beginning in March in the states of SC, GA, CO, NM and WA
  - Another potential **70 personnel could be lost** in TN
  - Due to the late notification of possible layoffs, as much as $16M in severance pay would be needed
  - Likely be in breach of other existing agreements that would result in legal actions and fines
- **Significantly delay installation of security upgrades** to detect radioactive material smuggling in critical countries such as Mexico and delay completion of training centers intended to improve Russian nuclear warhead security and initiation of work on a Nuclear Security Center of Excellence in India

**Naval Reactors**

- A 24% ($22M) reduction to the **OHIO-class Replacement Program** results in deferral of planned reactor plant component design subcontract placements to FY12, a staffing reduction of over 50 personnel at our laboratories and shipyards, and a deferral in planned hiring of approximately 150 personnel at our laboratories and shipyards to FY12.
- These actions will result in an overall combined **impact of 6 to 9-month delay to the overall shipbuilding program** due to required actions to recover lost reactor plant design activities and the inefficiencies associated with personnel reductions, hiring changes, and subcontract placements."
Office of Science

- **Immediate layoffs of thousands of highly skilled scientists, engineers, technologists, and support personnel and contractors** at both national laboratories and universities, including the termination of the highly regarded Early Career Research Program and the Graduate Fellowship Program that together build a foundation for tomorrow’s scientific and technological workforce. Estimates range from 20% of the workforce to perhaps double that at certain Office of Science laboratories that are heavily dependent on Office of Science funding. One estimate suggests that over ½ of the workforce of a laboratory might be terminated or furloughed. Impacts of this magnitude put into question the viability of some of our most important laboratories.

- **A sharp reduction in the operation—and in some instances the complete shutdown—of major Office of Science research facilities in which the U.S. government has already invested substantial resources.** Today the Office of Science facilities represent the greatest collection of major tools for science discovery operated by any single entity in the world; they are a national treasure. Hosting 27,000 researchers a year, they provide unique, complex, and expensive scientific tools and instruments. These facilities enable U.S. scientists and engineers from both industry and universities to perform cutting-edge research in areas such as nanotechnology, biotechnology, high-performance computing, advanced materials for industrial applications, structural biology to aid rational drug design, heavy-element chemistry, high energy and nuclear physics, and magnetic fusion.

- **Delays in or stoppage of procurements and goods/services for projects already underway,** including those for the National Synchrotron Light Source II, Thomas Jefferson National Acceleratory Facility, the NOvA project at Fermi Laboratory, and ITER, as well as other goods and services for general laboratory operations and maintenance. This will significantly impact local and regional suppliers, construction contractors, and construction workers.

- **Elimination of current government support for hundreds of PhD researchers and graduate students in university research programs all across the country,** which could purge an entire generation of scientists and engineers. The Office of Science currently invests more than $800M annually in university research, and this funding would be significantly reduced. This would send a very negative signal to industry, the science and technology community, and young American students contemplating careers in science and engineering, calling into question Congress’ commitment to U.S. scientific research essential for our continued global competitiveness and long-term energy security.
Advanced Research Projects Agency – Energy (ARPA-E)

- **Government efficiency:** ARPA-E has created an agency that is fast, efficient, nimble and thorough; which would be significantly hampered at this funding level. With a small staff, including some of the nation’s best and brightest scientists, and dedicated legal and procurement staff we have selected and initiated a suite of transformational projects and brought the government contracting process down to approximately two months. Also, ARPA-E Program Directors have three-year term limits that create a sense of urgency; another innovation that is proving successful. These features have been noted in assessments prepared by leading groups (e.g. PCAST report; the AEI / Brookings Breakthrough report, and the American Energy Innovation Council report).

- **Policy efficiency:** ARPA-E has the ability to react quickly new technical discoveries and geopolitical events. In critical areas such as rare earth metals, ARPA-E can establish a program in six months. A $50M budget would mean only one new program in FY 2011, and none of the others we planned for in FY 2011 that are ready to go. The planned programs are in areas that are not being explored by other federal R&D agencies but are important to enhancing U.S. economic and energy security and establishing U.S. leadership in key energy industries and sectors, including:
  - Rare Earth Metals/Critical Materials
  - Thermal Batteries (which has a nuclear component as well as electric vehicles component)
  - Grid Security & Reliability
  - High efficiency power generation
  - Open FOA

- **Hiring and Retention:** ARPA-E has recruited some of the Nation’s best scientists who select and actively manage the projects. At this funding level several Program Directors will leave due to lack of work, and the others will be severely limited and unable to conduct additional R&D programs due to their 3-year statutory term limit. Finally, this situation will make it difficult to recruit top talent, which jeopardizes ARPA-E’s ability to fill future staffing needs. Further, our projects are high risk and need special direction (e.g. General Compression, which received $750K in follow-on investment would not have been successful without ARPA-E’s technical guidance). Without our current Program Directors we might not have had the success we have seen and many of our ongoing projects might not reach their full potential.

- **Leveraging other federal agencies:** ARPA-E has made significant progress in establishing substantive partnerships with the Department of Defense. The $50M level will not allow for hiring talent toward this goal, and may prevent ARPA-E participation in these important initiatives. A lack of commitment could hamper both early and long term efforts towards implementing programs that are vital to national security interests.

- **Early Success:** In a little over one year, six projects that received a total of $23.6 million in seed funding from ARPA-E have generated more than $100 million in outside private capital investment. This indicates that there is a gap in early-stage research that cannot or was not being addressed, and the Government investment brought private investment off the sidelines. Good news stories like this are less likely to happen with ARPA-E funding fewer projects.
Office of Nuclear Energy

- The year-long Continuing Resolution proposed by the House of Representatives provides $661M for the Nuclear Energy appropriation. This allocation is $163M below the FY 2011 request and $125M below the current FY 2011 CR level.
- Funding for Idaho Sitewide Safeguards and Security is included in the Other Defense Activities appropriation. Under the proposed funding levels, DOE and non-DOE program access to Idaho National Laboratory facilities would be severely restricted forcing curtailment of mission-critical R&D.¹
- Activities associated with Small Modular Reactors and Nuclear Energy Enabling Technologies have been unable to begin due to the prohibition on new starts under the current CR, and may remain blocked if not permitted by the proposed CR. If allowed to begin, activities would be significantly curtailed.
  - In the case of SMRs the on-going delay in program start-up has negatively impacted our ultimate goal of developing a US competitive advantage in the global marketplace.
- On-going R&D on reactor and fuel cycle technologies would be significantly curtailed, impacting activities at Idaho National Laboratory, Oak Ridge National Laboratory, Los Alamos National Laboratory, and Argonne National Laboratory.
  - Activities associated with the Next Generation Nuclear Plant and Light Water Reactor Sustainability would be scaled back, particularly in the areas of advanced fuels, materials and safety technologies, impacting life extension activities for existing reactors and stalling development of advanced reactors.
  - Within fuel cycle R&D, the development of advanced fuels would be significantly curtailed, impacting the potential for making dramatic improvements in fuel efficiency that could result in less used fuel per megawatt electric and improved waste management.
  - Advanced modeling and simulation activities, which are supported by multiple NE R&D programs, would be curtailed inhibiting the development of "predictive" simulation capabilities that could speed development of new nuclear technologies.
- Support for university R&D and infrastructure development activities would be significantly reduced in order to maintain momentum in program-directed, mission-specific research areas. In FY 2010, NE supported 42 university R&D projects and 49 infrastructure development projects, amounting to $56.2 million; these awards were made to 49 universities in 31 states.
- Planned capital equipment purchases at Oak Ridge National Laboratory and Idaho National Laboratory would be delayed. In addition, Pu-238 production restart activities would be delayed.
- Material disposition and consolidation work at Idaho National Laboratory would be significantly impacted, threatening the Department’s relationship with the State of Idaho and Settlement Agreement commitments.

¹ Assuming a proportional reduction for all ODA programs, Idaho Sitewide S&S would be allocated $77.4M. This is $10.8M below the FY 2011 request and $6M below the current FY 2011 CR.
Office of Environmental Management

Defense Environmental Cleanup:

- The Office of River Protection increase for the Waste Treatment and Immobilization Plant (WTP) is challenging. We are conducting exercises to accommodate it. Our assumption is that we will be allowed under the CR to fund WTP at $740M rather than $690M in FY 2011 (CFO needs to validate this assumption). The new increased ORP funding profile is necessary in order to avoid a 2-year delay and over $600M of increased cost to the project and meet the consent decree commitments.
  - Tank Farm project scope associated with Supplemental Treatment, Interim Hanford Storage Facility, and Secondary Waste will be stopped effective April 1, 2011.
  - Both WTP Construction Project Review teams concluded that the only reasonable chance that DOE has to complete the WTP project on budget ($12.2B TPC) and on time (2019) is by increasing the near-term funding to concentrate construction work in the early years.

- Hanford soil and groundwater remediation, waste disposition, and D&D activities will be delayed.
  - 18 Tri-Party Agreement milestones would be jeopardized (11 involving cleanup of the Columbia River Corridor and 7 involving cleanup of the Central Plateau). If sufficient work scope is not completed in FY 2011 and December 2011 milestones are missed, the Department could incur fines and penalties of up to $7M.
  - The Idaho calcine project to treat and prepare the Idaho high-level waste for final disposal will be delayed. We will not be able to invest technology development funds to mature the Hot Isostatic Processing technology which would inhibit EM’s ability to obtain the RCRA Part B permit modification.
    - Failure to meet this Settlement Agreement commitment will suspend shipments of DOE spent fuel to Idaho and sets the stage for RCRA penalties and fines ($60K per day, $1.8M per month, and nearly $22M per year) until the milestone is satisfied.

- The retrieval of Savannah River high level waste in underground tanks will be delayed from the accelerated schedule to be accomplished with a new contract and technology development investments negatively impacting the site’s ability to deliver the 6-year, $3 billion cost avoidances.
  - Terminate long lead procurements for supplemental salt processing initiatives, delaying operational startup of small column ion exchange by one year.
  - Halt all tank isolation and closure activities not related to tanks 18, 19, 5, and 6.
  - Terminate Defense Waste Processing Facility (DWPF) enhancement activities that enable increase in DWPF production from 200 canisters per year to 400 canisters.

- The Oak Ridge project to stabilize and disposition U-233 will be delayed at least two years and we will fund only minimum safe monitoring and surveillance of Building 3019 where the U-233 is stored.
  - Suspension of the direct disposition approach currently underway would jeopardize cost avoidance measures worth approximately $100M.

Uranium Enrichment Decontamination and Decommissioning Fund:

- The cleanup of the Oak Ridge gaseous diffusion plant will be delayed and the compliance milestones in the Federal Facility Agreement (FAA) associated with this cleanup will not be met. The State of Tennessee has threatened to sue if further compliance milestones are missed.
  - 8 FFA milestones recently renegotiated as part of a Dispute Resolution with the State of Tennessee and U.S. EPA would be jeopardized.
• The long anticipated cleanup of the Portsmouth gaseous diffusion plant facilities will be delayed, and approximately 1,000 employees planned to transition to the cleanup contract would be laid off over the remainder of the fiscal year. The Secretary’s commitment to the Ohio Congressional delegation and the stakeholders regarding the accelerated completion of this cleanup will not be met.
  o In the alternative, DOE would continue bartering additional uranium for services to mitigate the shortfall over Congressional appropriators concerns.
  o Without the barter option, the Ohio Environmental Protection Agency may take enforcement action against the Department so as not to delay the cleanup of the contaminated media.

General:
• EM workforce impacts for sites noted above are currently being analyzed and details are forthcoming. In addition, EM is awaiting guidance from GC related to language in Section 1474 which prohibits the use of base funding for functions or operations previously funded entirely under public law 111-5 (Recovery Act).
Office of Electricity Delivery and Energy Reliability

The reduction of 25% from the FY 2011 and 20% from current operating levels, plus rescissions, would result in the estimated elimination of more than 100 contractor jobs at National labs across the country and in the DC metro area. The most significantly affected locations would be Pacific Northwest National Lab (PNNL), WA; Oak Ridge National Lab (ORNL), TN; Sandia National Lab, NM; and the DC metro area, which would each lose 15 to 25 jobs. Lawrence Berkeley National Lab, CA, and National Energy Technology Laboratory, WV, would lose approximately 10 jobs in each location.

This significant reduction would adversely affect efforts to accelerate the transformation of the electricity grid, critical to advancing a clean energy economy and increasing the reliability and efficiency of the grid. Reductions at this critical juncture are likely to be perceived as a lack of commitment to these important technologies, leading to a loss of confidence within the utility and the financial community. Specific major programmatic impacts include:

- **In Energy Storage**, planned field tests and prototype development of advanced technologies would be cancelled, resulting in the loss of highly leveraged funding from states and private sector and losing major ground on progress towards deployment. R&D of energy storage technologies at Sandia National Lab that promote grid stability and integration of clean energy resources and research on more cost-effective batteries at Pacific Northwest National Lab would be drastically cut back. Investigation on potential re-use of electric vehicle batteries for grid applications, jointly sponsored by five automotive manufacturers, would be curtailed.

- **Smart Grid R&D** reductions would force the cancelation of planned, collaborative projects to conduct analysis and demonstrations of the effects of plug-in electric vehicles (PEVs) on grid performance. This would affect progress toward the presidential goal of 1 Million PEVs by 2015 by hindering our understanding of the real-world impacts of PEV operations on the grid, and how power quality and reliability of the distribution grid would be affected. Funding of second year mortgages for Smart Grid awards would be reduced. R&D activities at National Renewable Energy Lab and Oak Ridge would be scaled back, possibly causing reductions in scientific personnel.

- **Reductions to the Cyber Security for Energy Delivery Systems** program would slow the development of cybersecurity measures for sensors on the grid, decreasing the security of a component that helps system operators know when the grid has a problem. Funding for second-year mortgages for FY 2010 awards to industry partners in NJ, TN, WA and FL for R&D of technologies that enhance control systems security could also be affected.

- **Reductions in power electronics** will have a three tier impact, starting with lost in cost and performance improvements in power electronics devices, which will delay the development of devices capable of operating at high voltage, and thus ultimately impede the development of utility scale components that increase the reliability and decrease the cost of power delivery.

- **Advanced modeling research** to analyze and predict grid behavior would be virtually eliminated, and therefore eliminating our ability to visualize and address multiple variables from a comprehensive, system wide perspective. The opportunity to develop the academic pipeline to produce the power system skills needed to address our future energy challenges would be lost.

- **Infrastructure Security and Energy Restoration** would be unable to fully meet its responsibilities (HSPD-7) as the Energy Sector-Specific Agency (SSA), working with other SSAs and private industry to protect National Critical Energy Infrastructure and Capabilities. The ability to provide cyber threat information and mitigation solutions to industry partners would be severely reduced.
• In the **Permitting, Siting and Analysis** program, OE would be unable to respond to all requests for assistance, at a time when state regulators and policy makers face significant new issues in grid modernization, hindering progress towards a cleaner energy future. Reduced funding would curtail the technical assistance and expertise OE provides to state and regional entities, through **Lawrence Berkeley National Lab**, in critical areas such as energy efficiency, demand response, smart grid.

• Reductions to **Program Direction** would severely reduce planned hires that are critical to building the technical and programmatic staff needed to meet the program’s mission. The impacts are greater in FY 2012, and include potential layoffs of Federal staff in West Virginia and Headquarters.
Office of Energy Efficiency and Renewable Energy (EERE)

**EERE Overall** - Cut from FY 2010 of $2.242B to FY 2011 of $1.456B is approximately 35%. At least 4,000 clean energy sector jobs will be directly eliminated due to funding reductions. Reductions in cost-sharing by companies and universities will result in significant additional job losses. Additional job losses will occur through indirect impacts to firms providing supplies and support for EERE projects.

**Weatherization (WAP)** - This is the core support for the emerging weatherization retrofit industry which has huge employment potential given the number of buildings in every part of the country that are not energy efficient.

- **Specific impacts:** More than 8,000 people work in the Weatherization public/private sector network. There are less than two months of 2009 and 2010 funds remaining at current operating levels. WAP operates in a delayed year, beginning in April 2011, layoffs of several thousand staff will occur. By July 1 at least 8,000 people will be out of work.
- The number of homes weatherized using DOE appropriated funds will be reduced from 31,000 to zero. These are families desperately in need of energy efficiency improvements in their homes. At least $250 to $300 million in projected savings over the life of the measures will be lost for these low-income families already struggling in this down-turned economy. The Program will lose its network of 59 grantees, 1,007 subgrantees and more than 4,000 private contractors throughout American and the U.S Territories.
- The DOE supported network creates the foundation for investments from other federal, state and local sources into WAP. Traditionally, DOE supports about 35 to 40 percent of the network’s investment in WAP services each year. Without the core functions of the network being paid for by DOE, investments by LIHEAP ($200 to $300 million per year), utility companies ($150 to $200 million per year), and state and local sources ($20 to $50 million per year) are in serious jeopardy.

**State Energy Program (SEP)** - Supports a nationwide infrastructure of state energy offices. Has resulted in $203.4 million (over the last 5 years) that states have leveraged to support investments that save consumers money by lowering their energy bills, created good-paying jobs in local communities, and developed a more secure, efficient and cleaner energy future for our country that depends less on foreign energy resources. An estimated 8,000 jobs lost in clean energy initiatives by severely limited States.

- **$50 million in SEP funding:** Leverages $585 million for energy related economic development; produces $333 million in annual energy cost savings for Families, Businesses, and State and Local Governments; Supports energy retrofit of 153 million square feet of state/local government buildings; Provides 300,000 energy efficiency technical assistance contacts with consumers and small businesses to aid them in implementing cost-effective energy efficiency actions.
- **SEP saves consumers over $300M in energy costs from reducing nationwide energy use by nearly 50 trillion BTUs annually - the equivalent of over a half million passenger cars off the road in a single year. The $50M per year SEP more than pays for itself in energy and cost savings. The SEP leverages an average of $10 in private sector funding for every $1 it expends**

**Biomass** -
- Eliminates a new solicitation for utility-scale biopower demonstrations, affecting power companies in 28 states that must meet a Renewable Portfolio Standard in the coming years.
Eliminates R&D on densification of feedstocks for more efficient co-firing biomass with coal in a power plant. Reduction in this effort will also affect the reduction in the cost of biomass-to-liquid fuels, as delivered feedstock cost is remains a critical barrier.

Eliminates several international activities, including the U.S. - India Joint Clean Energy R&D Center, collaboration with Brazil on improved GHG emissions modeling, and collaborative research with China on advanced hydrocarbon compatible fuels. This may negatively impact our relations with international partners.

Geothermal -

- The Program goal of developing innovative exploration technologies to discover and bring online 1GWe of the 30GWe in undiscovered geothermal by 2020 may not be met.
- The Program's objective of a 50% reduction in the reservoir engineering cost of enhanced geothermal systems (EGS) by 2035 may be delayed.

Hydrogen and Fuel Cells -

- Eliminate the potential for approximately 285 jobs through new awards distributed across industry, national labs and universities in the areas below.
- Defer new awards planned under the current Fuel Cell R&D FOA resulting in a 1 year delay for meeting the target of 6 kW/g platinum.
- Defer new awards planned for hydrogen fuel R&D and hydrogen for energy storage. The Program would not be able to implement the National Academies’ recommendations to reduce the cost of high pressure tanks or initiate projects on hydrogen for energy storage according to Senate recommendations.
- Eliminate new awards in early market deployments and in education activities which delays market penetration of fuel cell technologies and will jeopardize the U.S. industry leadership role in fuel cells (while the global fuel cell market grew by more than 40% in 1 year (2009), domestic growth remained flat).
- Eliminate funding planned for new awards in technology validation and would no longer support DOD-DOE joint program. Hydrogen technologies planned under the Hawaii Clean Energy Initiative would not be deployed.

Solar -

- Significantly delays attainment of PV cost goals to reach grid parity. Further weakens U.S. global competitiveness in PV compared to China, Germany and Japan.
- Eliminate the PV manufacturing initiative and greatly reduce critical industry and laboratory PV research which supports grid-parity solar energy.
- Eliminate the Concentrating Solar Power Demonstration Zone program completely. Reduces core capability at the National labs.

Water -

- Planned assessment of ideal generation levels at fifty facilities across the country will be postponed or eliminated, as will the selection and award of five detailed engineering studies to specify the technical elements necessary to maximize cost-effective generation at each site.
- Hydropower FOA will be reduced, this reduction would eliminate 1) the demonstration of three novel low-head hydropower technologies at Bureau of Reclamation facilities (a major objective of the 2010 DOE-Interior-Army MOU); 2) four planned industry awards to develop and deploy
innovative approaches to reducing the cost to hydropower operators of avoiding and mitigating environmental impacts; and 3) technical assistance to one of two pumped storage showcase projects, delaying their final design and jeopardizing their progress through the FERC licensing process.

- The program will eliminate all planned funding for Phase III SBIR grants. There are currently nine hydropower or marine renewable energy companies with active Phase II projects, ranging from the development of spherical turbines for installation in closed pipe systems to control systems for air turbines to a modular combined small hydro turbine and civil works system. The program will not award Verdant Power, the final full-scale marine and hydrokinetic development and testing project eligible for selection from the program’s 2010 MHK FOA. Verdant is in the process of developing a composite materials rotor for installation into New York’s East River, and the deployment and testing of their system may not be able to move forward without DOE support.
- There would be a loss of approximately 93 Industry related jobs.

**Wind -**

- The National Renewable Energy Laboratory (NREL) funding will be reduced impacting national laboratory research and test facilities at the National Wind Technology Center. Eliminates research on utility-scale wind turbines that were built last year and are currently undergoing testing in partnership with industry. Eliminates personnel hired to support testing at ARRA-paid dynamometer facility (an industry-user facility for testing of wind turbine drivetrains). Cancels facility upgrades requested by industry that incorporated advanced testing features (such as grid simulation and off-axis loading). Potential for up to 25 job layoffs at NREL and/or industry partners.
- Private industry impacts include elimination of entire Manufacturing & Supply Chain R&D, such as development of U.S. Standards and building a common wind turbine component breakdown structure in collaboration with the Department of Commerce. Elimination of any Phase III SBIR proposals impacting small businesses ability to take innovative designs to the market. Effects approximately 13 jobs in private industry.
- Will cancel or delay by one-year research and results on radar-mitigation underway in cooperation with DoD and Lincoln Labs. Eliminates advanced design rotor blade research and testing at Sandia National Laboratory in New Mexico and potential for up to 6 layoffs.
- Cancels wind turbine research at the University of Alaska

**FEMP -** $1.2M from Energy Savings Performance Contracts (ESPC) will remove the ability to utilize the Federal Financing Specialists who provide up-front development of ESPC contracts and will reduce the pipeline for projects by one-half resulting in a loss of 2,500 jobs.

**Facilities and Infrastructure -** The reduction for the Energy Systems Integration Facility (ESIF) eliminates both non-HPC equipment and HPC equipment. Construction schedule will be delayed if the non-HPC equipment is not available by 10/1/11 and the HPC equipment by by 1/1/12.

**Strategic Programs -**

- Reduction would lead to termination of international collaborations to which the U.S. has committed and led, such as the International Partnership for Energy Efficiency Cooperation.
- Analysis critical to supporting strategic planning by EERE leadership is ongoing for: buildings, industry, transportation, and renewable generation. Cuts to analysis funding would result in inability to fulfill contract commitments for multi-year work initiated with DOE national labs and may result in loss of 40 jobs at the labs.
Fossil Energy

Clean Coal Technology Impact of $18M rescission
- An $18M rescission from the Clean Coal Technology (CCT) account would impact the close out of several CCT, Power Plant Improvement Initiative (PPII), and CCPI projects and preparation of final reports and results for use in outreach. In addition, it would impact the ability to cover payments of potential liability claims for costs overruns. The proposed rescission does not reflect funding we have currently obligated.

Fossil Energy Research and Development Impact of $31M rescission
- There is $11M out of the proposed $31M that was earmarked for the Oil Spill Commission. The impact of the rescission would be to Program Direction since Program Direction funds were used for the Oil Spill Commission and there would be no replenishment if the rescission occurred; thereby creating the possibility for furloughs at NETL and FE HQ. There is $2.3M being transferred to the Office of Loan Guarantee to accompany the program function transfer out of Fossil Energy. The remaining funds ($17.7M) are being used to offset the 2012 Congressional Budget Request. If rescinded, this could produce and extreme hardship for the funding of certain FER&D projects in FY2012; thereby, creating the possibility of furloughs at NETL sites.

- If OMB approves the spend plan it is unlikely there would be funding for Oil and Gas R&D. Without a FY11 appropriation for Oil/Gas R&D, we cannot rejuvenate our R&D portfolio, a portfolio that will pursue enhanced safety and environmental sustainability goals. This research is required post-Macondo and to underpin shale gas development - part of a clean energy future. Overall, the oil/gas research portfolio supports over 550 professionals on an annual basis -- without an appropriation (for oil/gas); support of these professionals would be terminated.

Strategic Petroleum Reserve (SPR) Impacts of $139M level:
- CR proposes a 40% reduction to SPR funding level that will cause the shutdown of the SPR and termination of all SPR activities including layoffs of the majority of SPR Management & Operating contractors (530) and site security personnel (180) in Louisiana (New Orleans, District 02; Baton Rouge, District 06 and Iberville Parrish, District 06) and Texas (Beaumont, District 09 and Freeport, District 22).
- This impacts the U.S. national security and breaches the U.S. International Energy Program treaty.
- This impacts DOE/SPR compliance with state laws and regulations on underground oil storage.
- Halts replacement of a Bayou Choctaw existing storage cavern that has geotechnical issues and poses major environmental risks with continued use.

Impacts of $15M SPR rescission:
- $6.2 million is needed for unfunded contingent liability on a contract due to a court judgment.

Naval Petroleum Reserves (NPR) Impacts of $2M rescission:
- The $2.1 million is required to fund on-going DOE contracts for the environmental cleanup and remediation and, to safely conduct NPR-3 (Casper, WY) production operations and perform environmental remediation in compliance with State of Wyoming Oil and Gas Conservation Commission regulations.
LPO – Talking Points re: Proposed FY11 CR

- The proposed FY11 CR would decimate the DOE loan guarantee programs -- and it would pull the rug out from under dozens of companies that have already spent hundreds of thousands, if not millions, of dollars applying for loan guarantees – some of which have already received commitments for funding from the DOE.

- In the absence of DOE loan guarantees, these projects – which would create thousands of new, clean energy jobs across dozens of states – will struggle to get built.

- Specifically, the FY11 CR would (1) rescind all unobligated ARRA funds, which includes the remaining, unobligated 1705 Program credit subsidy appropriations; and (2) rescind, from the 1703 Program, $25 billion of loan guarantee authority that could otherwise be used to support renewables and advanced fossil projects.

- Rescinding the 1705 appropriations would have serious consequences.
  -Unlike other programs, LPO funds are not “obligated” until financial close.
  -Therefore, the CR would pull funding from those projects that have received a conditional commitment, but not yet closed, by the CR’s effective date. Depending on the effective date, this could ensnare upwards of 10 projects, which represent approximately $10 billion in investment and would create over 6,000 new jobs.
  -In addition, the rescission would prevent DOE from supporting the 20+ other projects that have already received a term sheet from DOE, and are on the path to receiving a loan guarantee from DOE if they close prior to the program’s September 30, 2011 expiration. Together, these projects represent over $20 billion in additional investment, and are projected to create over 20,000 new jobs.
  -Many of the companies affected by the rescission have expended hundreds of thousands, if not millions, of dollars applying for loan guarantees and developing their projects. Rescinding money now would not only be incredibly unfair to these companies, it could put them, or their projects, at risk of financial ruin.

- Rescinding $25 billion 1703 authority is also damaging.
  -While the rescission would not affect nuclear power or nuclear fuel projects, it would rescind almost all of DOE’s ability to support advanced fossil projects and all of its authority to support renewable energy projects.
  -With respect to renewables, the rescission would not only preclude LPO from supporting any renewable energy projects going forward, it would also prevent DOE from fulfilling its commitment to the two renewables projects that it has supported under 1703 to date.
  -Moreover, rescinding the 1703 renewables authority takes away a potential “landing spot” for projects that are currently eligible for 1705, but which are unable to receiving funding or commence construction by that program’s expiration date.
Energy Information Administration

- Dramatically curtail EIA’s program by cutting its Federal and contractor workforce by more than 15%, a loss of 103 jobs, and eliminating current data collection programs used by Congress, States, industry, policymakers, educators, and the public to better understand important topics such as energy consumption and efficiency measures for homes and businesses, petroleum product prices and supply, and electricity markets.
- Cancellation of EIA’s Commercial Buildings Energy Consumption Survey (CBECS). CBECS is mandated by the Congress and is the Nation’s only source of statistical data for energy consumption and energy-related characteristics of commercial buildings. Adequate funding would not be available to carry out the next scheduled CBECS cycle designed to collect data on calendar year 2011 energy consumption by commercial buildings.
- Cessation of all upgrades to the aging National Energy Modeling System (NEMS). NEMS is the country’s preeminent energy model, and its results are very widely used by the Congress and industry in making energy decisions. The multiyear project to replace existing NEMS components would be halted, leaving EIA unable to reliably assess and project supply, demand, and technology trends affecting U.S. and world energy markets.
- Dismantlement of EIA’s International Program, including modeling, analyses, and information dissemination. EIA’s release of detailed, timely international data and analyses—including the International Energy Outlook—would be dramatically curtailed, adversely affecting the agency’s ability to determine and communicate the economic impacts of energy market disruptions and crippling the forecasting capabilities needed to accurately answer questions concerning significant issues affecting world energy markets.
- Termination of other mandatory programs. Other Congressionally-mandated programs that would be eliminated include the collection of financial information from major energy producing companies and the Biodiesel Producers Survey.
- Termination of several key petroleum and electric surveys. EIA would cut back and in some cases eliminate important programs for collecting data on crude oil, gasoline, diesel fuel, heating oil, and electricity production, consumption, and prices.
- Undermines EIA’s initiative to build capacity for addressing energy market behavior and the interrelationship of energy and financial markets. This initiative, pursued at the request of the Congress, has been improving information collection, analysis, and engagement with market participants in order to increase understanding of the key factors driving oil and other energy prices. These efforts would be stalled.