

GREEN BUILDINGS—AN EVALUATION OF ENERGY SAVINGS PERFORMANCE CONTRACTS

JOINT HEARING

BEFORE THE
SUBCOMMITTEE ON OVERSIGHT &
SUBCOMMITTEE ON ENERGY
COMMITTEE ON SCIENCE, SPACE, AND
TECHNOLOGY
HOUSE OF REPRESENTATIVES
ONE HUNDRED THIRTEENTH CONGRESS
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**GREEN BUILDINGS—AN EVALUATION OF
ENERGY SAVINGS PERFORMANCE
CONTRACTS**

THURSDAY, JUNE 27, 2013

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON OVERSIGHT &
SUBCOMMITTEE ON ENERGY
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY,
Washington, D.C.

The Subcommittees met, pursuant to call, at 10:04 a.m., in Room 2318 of the Rayburn House Office Building, Hon. Paul Broun [Chairman of the Subcommittee on Oversight] presiding.

LAMAR S. SMITH, Texas
CHAIRMAN

EDDIE BERNICE JOHNSON, Texas
RANKING MEMBER

**Congress of the United States
House of Representatives**

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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Subcommittees on Oversight and Energy

***Green Buildings – An Evaluation of Energy Savings Performance
Contracts***

Thursday, June 27, 2013

10:00 a.m. to 12:00 p.m.

2318 Rayburn House Office Building

Witnesses

Dr. Kathleen Hogan, Deputy Assistant Secretary for Energy Efficiency, U.S. Department of Energy

Dr. Woodrow Whitlow, Jr., Associate Administrator, Mission Support Directorate, National Aeronautics and Space Administration

Ms. Jennifer Schafer, Executive Director, Federal Performance Contracting Coalition

Mr. Ron King, President Advisor, National Insulation Association

**U.S. House of Representatives
Committee on Science, Space, and Technology
Subcommittees on Oversight & Energy**

HEARING CHARTER

Green Buildings – An Evaluation of Energy Savings Performance Contracts

Thursday, June 27, 2013
10:00 a.m. – 12:00 p.m.
2318 Rayburn House Office Building

Purpose

On June 27, 2013, the Subcommittees on Oversight and Energy will hold a hearing titled, “Green Buildings – An Evaluation of Energy Savings Performance Contracts.” The hearing will evaluate the benefits and shortfalls of Energy Savings Performance Contracts (ESPCs). Federal agencies, such as the National Aeronautics and Space Administration (NASA) and U.S. Department of Energy (DOE), engage in ESPCs with energy service companies (ESCOs) in order to achieve energy efficiency improvements at government-owned facilities. The hearing will also explore how frequently labs, centers and other facilities in the Committee’s jurisdiction use these contracts, to better understand their advantages and limitations.

Witnesses

- Dr. Kathleen Hogan, Deputy Assistant Secretary for Energy Efficiency, U.S. Department of Energy
- Dr. Woodrow Whitlow, Jr., Associate Administrator, Mission Support Directorate, National Aeronautics and Space Administration
- Ms. Jennifer Schafer, Executive Director, Federal Performance Contracting Coalition
- Mr. Ron King, President Advisor, National Insulation Association

Background

Congress authorized ESPCs in 1986 through amendments to the National Energy Conservation Policy Act (NECPA) of 1978.¹ In doing so, it introduced a mutually beneficial performance-based contracting mechanism to encourage private sector involvement in increasing federal building energy efficiency with limited exposure to taxpayers.

Energy Savings Performance Contracts help agencies upgrade buildings to achieve greater energy efficiency and perform major renovations without Congressional appropriations or upfront capital costs to the federal agency. ESPCs “cover a wide range of energy

¹ 42 U.S.C. § 8287, Pub. L. No. 95-619, Title VIII, § 801, as added Pub. L. No. 99-272, Title VII, § 7201(a) (Apr. 7, 1986).

conservation measures (ECMs)² that can include lighting improvements; heating, ventilating, and air conditioning improvements; energy efficient windows and doors; reduced flow plumbing fixtures; updated HVAC equipment; and updated and improved insulation, among others.

The ESPC process has changed in many ways since its creation in 1986. Agencies were initially hesitant to engage in ESPCs because negotiating such contracts was a technical and difficult process. In 1998, DOE's Federal Energy Management Program (FEMP), which oversees the ESPC program, created umbrella contracts known as "Super ESPCs" to simplify and reduce the negotiation process. FEMP-implemented Super ESPCs are:

"indefinite-delivery, indefinite-quantity contracts subject to specific rules that standardize the negotiation process. Agencies can use the Super ESPC process to take advantage of some pre-negotiated terms and conditions. These 'umbrella' contracts are competitively awarded to preapproved energy savings companies that have demonstrated their ability to provide energy projects to federal customers."³

Today, there are 16 such ESCOs pre-approved by DOE.⁴

During a typical ESPC project, an agency completes a number of steps prior to awarding a contract to an ESCO. The ESCO then conducts a comprehensive energy audit of the federal facility and identifies improvements to save energy. In consultation with the federal agency, the ESCO designs and constructs a project that meets the agency's needs and arranges the necessary funding. The ESCO guarantees that facility modifications will generate cost savings sufficient to pay back its upfront investment in the project over the term of the contract. After the contract ends, all additional cost savings belong to the agency.⁵

The ESCO receives payment from the federal agency out of the energy savings resulting from energy efficiency improvements. By law, the federal agency cannot pay more as a result of its involvement with the ESPC than it previously paid for its energy bills. Agencies may use appropriated funds to supplement ESPCs, which reduce the amount to be funded by ESCOs. Because financing rates are typically higher through ESCOs than direct federal government rates, it is cheaper for agencies to pay off these contracts expeditiously.

Laws and Regulations

There have been several revisions to the laws and regulations surrounding ESPCs that have shaped the program into what it is today. The Energy Policy Act of 1992 extended agency authority relative to ESPCs by authorizing federal agencies to execute guaranteed-savings

² Federal Energy Management Program Overview, "Energy Savings Performance Contracts: Frequently Asked Questions," available at: http://www1.eere.energy.gov/femp/pdfs/escp_faqs.pdf.

³ Jeff Belkin and Lydia Jones, "Energy Savings Performance Contracts: A Critical Look," Government Contract, June 2, 2008, available at: http://www.alston.com/files/docs/govcom_energy_savings.pdf; (hereinafter Government Contract Article).

⁴ DOE ESCOs, available at: http://www1.eere.energy.gov/femp/financing/escps_doescos.html.

⁵ DOE Federal Energy Management Program website, "Energy Savings Performance Contracts," available at: <http://www1.eere.energy.gov/femp/financing/escps.html>.

ESPCs. The act also required ESCOs to not increase costs, required measurement and verification of cost savings, and limited the maximum contract term to 25 years.⁶ The Energy Policy Act of 2005 “extended agency authority to enter into ESPCs until Sept. 30, 2016.”⁷ Most recently, the Energy Independence and Security Act of 2007 made the federal ESPC authority permanent, authorized the use of any combination of appropriated funds and private financing in federal ESPCs, and called for a study of non-building applications of ESPCs.⁸

During the 1990s, executive orders were issued to require federal agencies to significantly reduce their consumption of energy in federal facilities. For example, Executive Order 13123, issued in 1999, required agencies to reduce energy consumption by 35 percent by 2010 from a 1985 baseline.⁹ Further, in January 2007, Executive Order 13423 required agencies to “improve energy efficiency through reduction of energy use by (1) 3 percent annually through the end of fiscal year 2015, or (2) 30 percent by the end of fiscal year 2015, relative to the agency’s energy use in fiscal year 2003.”¹⁰

The Obama Administration has encouraged greater use of ESPCs by agencies through the issuance of an executive order in 2009 that established energy reduction goals by increasing agency use of renewable energy projects.¹¹ Additionally, in December 2011, the President issued a memorandum committing the federal government to enter into a combined \$2 billion in ESPCs and utility energy savings contracts (UESCs) by the end of 2013.¹²

ESPC Caucus

In December 2012, Reps. Cory Gardner (R-CO) and Peter Welch (D-VT) formed a bipartisan caucus to help promote ESPC use in government buildings across the country. At the time of its announcement, the Caucus consisted of ten Members and its founders hoped that the “formation of their caucus can move the process [of taking advantage of energy savings through the implementation of ESPCs] along a bit faster by getting executive branch departments to evaluate their own facilities and identify potential savings through ESPCs, Utility Energy Service Contracts (UESCs) and performance contracts that promote energy efficiency at the federal, state, and local level.”¹³

⁶ DOE Federal Energy Management Program website, “Energy Savings Performance Contracts Laws and Regulations,” available at: http://www1.eere.energy.gov/femp/financing/espcs_regulations.html; (hereinafter DOE FEMP Website).

⁷ Government Contract Article, *supra*, note 3.

⁸ DOE FEMP Website, *supra*, note 6.

⁹ GAO Report, “Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests,” GAO-05-340, June 2005, available at: <http://www.gao.gov/new.items/d05340.pdf>; (hereinafter GAO Report).

¹⁰ NASA IG Audit Report, “NASA’s Management of Energy Savings Contracts,” Report No. IG-13-014, April 8, 2013, available at: <http://oig.nasa.gov/audits/reports/FY13/IG-13-014.pdf>; (hereinafter NASA IG Report).

¹¹ Presidential Executive Order, “Federal Leadership in Environmental, Energy, and Economic Performance,” Oct. 5, 2009, available at: http://www.whitehouse.gov/assets/documents/2009fedleader_eo_rel.pdf.

¹² Presidential Memorandum, “Implementation of Energy Savings Projects and Performance-Based Contracting for Energy Savings,” Dec. 2, 2011, available at: <http://www.whitehouse.gov/the-press-office/2011/12/02/presidential-memorandum-implementation-energy-savings-projects-and-perfo>.

¹³ Rep. Gardner Press Release, “Gardner, Welch Announce Creation of Bipartisan Energy Efficiency Caucus,” Dec. 5, 2012, available at: <https://gardner.house.gov/press-release/gardner-welch-announce-creation-bipartisan-energy-efficiency-caucus>.

Issues

Reports

A 2005 GAO report,¹⁴ the most recent one on this subject, and 2013 NASA IG report,¹⁵ both identified concerns about the ESPC program. Concerns in the GAO report include:

- lack of a comprehensive database on federal agencies' use of ESPCs;
- inconclusive data on savings generated from ESPCs;
- complexity and costs of ESPCs sometimes resulted in agencies relying on ESCOs for guidance, raising questions about whether the agency negotiated the best possible contract;
- limited number of financiers available to ESCOs raise questions about competition and whether ESCOs spend enough time trying to acquire the best financing rate for agencies in ESPCs;
- whether or not Super ESPCs should be put out for competition more frequently.

The NASA IG report focused on contracts at Johnson Space Center (Johnson) and Ames Research Center (Ames) "in an effort to provide 'lessons learned' for contracts underway or planned at other Centers."¹⁶ Concerns identified in the NASA IG Report include:

- NASA should improve guidance and training for NASA employees regarding ESPCs;
- Johnson did not require the ESCO to submit annual reports verifying that the energy conservation measures continue to generate savings;
- Johnson did not adjust the contract for changed circumstances that affected energy savings generated by conservation measures;
- Johnson failed to incorporate cost savings measures to the contract modifications for additional work.

It should be noted that the GAO report is eight years old and the ESPC program has changed in the interim. Similarly, some of the concerns raised in the NASA IG report were in regard to NASA's first contracts, at a time when ESPC requirements differed than today.

Use of appropriated funds

The Energy Independence and Security Act of 2007 authorized the use of any combination of appropriated funds and private financing in ESPCs. While this helps agencies reduce the amount that has to be funded by ESCOs, therefore helping to lower payments and potentially the duration of the contracts as well, it dilutes the 'budget neutral' principle of these innovative contracts. According to DOE, 167 of 281 projects across the federal government utilized some level of appropriations for a total of \$357.6 million, representing 13 percent of the total project investment of \$2.72 billion.

Budget Scoring

¹⁴ GAO Report, *supra*, note 9.

¹⁵ NASA IG Report, *supra*, note 10.

¹⁶ *Ibid.*

Currently, ESPCs are not “scored” upfront in an agency’s budget at the time the contract is finalized. However, the “Congressional Budget Office believes that the obligation to make payments for the energy-efficiency improvements and the financing costs is incurred when the government signs the ESPC...[and] that the budget reflect this commitment as a new obligation at the time of signing.”¹⁷ On the other hand, the Office of Management and Budget treats the scoring issue differently as it “includes the costs of ESPCs in the budget on an annual basis as they are incurred.”¹⁸

Legislation

Although there is general, bipartisan support for ESPCs, legislation to modify current ESPC law has stalled due to CBO scoring concerns. Senators Jeanne Shaheen (D-NH) and Rob Portman (R-OH) introduced legislation¹⁹ containing a provision that would authorize the use of ESPCs to upgrade vehicle fleets to run on alternative fuels or electricity. The CBO scored that specific provision at \$350 million.²⁰

In the House, Representatives Cory Gardner and Peter Welch have considered introducing energy efficiency legislation intended to expand the use of ESPCs at federal agencies, but CBO scoring has raised concerns.²¹

¹⁷ GAO Report, *supra*, note 9.

¹⁸ *Ibid.*

¹⁹ S.761, “Energy Savings and Industrial Competitiveness Act of 2013,” available at: <http://www.govtrack.us/congress/bills/113/s761/text>.

²⁰ Nick Juliano, “Energy Efficiency: CBO Continues to Bedevil Efficiency Advocates,” *E&E News*, June 20, 2013, available at: <http://www.eenews.net/eedaily/stories/1059983172/search?keyword=juliano>.

²¹ *Ibid.*

Chairman BROUN. Good morning. This joint hearing of the Subcommittee on Oversight and the Subcommittee on Energy will come to order.

Good morning and welcome to today's joint hearing. In front of you are packets containing the written testimony, the biographies, and truth-in-testimony disclosures for today's witnesses. Before we get started, since this is a joint hearing involving two Subcommittees, I want to explain how we will operate procedurally so all Members will understand how the question-and-answer period will be handled. As always, we will alternate between the majority and the minority Members. We will recognize those Members present at the gavel in order of seniority on the full Committee, and those coming in after the gavel will be recognized in the order of their arrival.

I now recognize myself for five minutes for an opening statement.

Today's hearing is titled, "Green Buildings—An Evaluation of Energy Savings Performance Contracts." Energy Savings Performance Contracts, also known as ESPCs, are a unique mechanism by which the private sector pays for energy conservation measures at Federal facilities, and are reimbursed for their work out of the resulting savings in utility cost. Each contract creates jobs in the private sector while the Federal Government benefits from valuable upgrades without putting taxpayers on the line.

That last part is what makes this program particularly appealing, because during these constrained economic times, it is imperative that we manage our limited funds as best we can and be creative about accomplishing our goals while maximizing our strained resources.

However, as I have realized in my experience as a Member of Congress, when it comes to government programs, no matter how effective and efficient, they can all be improved. A couple of reports on ESPCs have raised some legitimate concerns about the complexity of these contracts. A 2005 GAO report, the most recent one on the subject, questioned whether agencies were getting the best deal possible from energy service companies in part based on the limited number of financiers available to the private sector for such projects.

A NASA IG report from earlier this year raised specific questions about an early contract involving Johnson Space Center. The report questioned if NASA employees were sufficiently trained in handling ESPCs because the Johnson contract did not require annual reports to verify the energy conservation measures were generating savings.

I realize the GAO report is dated and that the NASA IG report focused on an early contract, but they raise important questions. The most important features of these contracts are their flexibility in not relying on taxpayer dollars for the services provided and the ability to categorically identify and measure savings. To be assured of the success and effectiveness of ESPCs, we need meaningful transparency, accountability, and oversight during the length of all contract terms.

Additionally, despite a 2011 memo from the President encouraging agencies to engage in \$2 billion worth of performance-based contracting by the end of this year, Federal agencies continue to

encounter challenges in their efforts to “green” their buildings. The White House Council on Environmental Quality and the Office of Management and Budget recently released their annual agency energy and sustainability scorecards. Ironically, the green buildings category was notably problematic because out of 19 agencies that provided timely information, 10 scored in the red and yellow categories, while 5 others could not even be scored.

Perhaps instead of continuing to announce new broad and sweeping policies related to global warming, the President could focus on his current costly regulations that are already in the books. Perhaps instead of bypassing Congress to implement a plan by Executive Order that launches a “war on coal”—as well as a war on jobs—this Administration could work with Congress on an all-of-the-above energy approach that includes coal, energy efficiency, and everything in between.

While my Democratic colleagues and I don’t always see eye-to-eye on the issues that we review in this hearing room, I do believe we agree on the value and benefit of ESPCs, and I look forward to hearing from our witnesses on how we can improve the program.

[The prepared statement of Mr. Broun follows:]

PREPARED STATEMENT OF REPRESENTATIVE PAUL C. BROUN, CHAIRMAN,
SUBCOMMITTEE ON OVERSIGHT

Today’s hearing is titled “Green Buildings—An Evaluation of Energy Savings Performance Contracts.”

Energy Savings Performance Contracts, also known as ESPCs, are a unique mechanism by which the private sector pays for energy conservation measures at federal facilities, and are reimbursed for their work out of the resulting savings in utility costs. Each contract creates jobs in the private sector while the federal government benefits from valuable upgrades without putting taxpayers on the line. That last part is what makes the program particularly appealing, because during these constrained economic times, it is imperative we manage our limited funds as best we can, and be creative about accomplishing our goals while maximizing our strained resources.

However, as I have realized in my experience as a Member of Congress, when it comes to government programs, no matter how effective and efficient, they can all be improved. A couple of reports on ESPCs have raised some legitimate concerns about the complexity of these contracts. A 2005 GAO report, the most recent one on the subject, questioned whether agencies were getting the best deal possible from energy service companies in part based on the limited number of financiers available to the private sector for such projects. A NASA IG report from earlier this year raised specific concerns about an early contract involving Johnson Space Center. The report questioned if NASA employees were sufficiently trained in handling ESPCs because the Johnson contract did not require annual reports to verify that the energy conservation measures were generating savings.

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Additionally, despite a 2011 memo from the President encouraging agencies to engage in \$2 billion worth of performance-based contracting by the end of this year, federal agencies continue to encounter challenges in their efforts to “green” their buildings. The White House Council on Environmental Quality and the Office of Management and Budget recently released their annual agency energy and sustainability scorecards. Ironically, the green buildings category was notably problematic because out of 19 agencies that provided timely information, ten scored in the red and yellow categories, while five others could not even be scored.

Perhaps instead of continuing to announce new broad and sweeping policies related to global warming, the President could focus on his current costly regulations already in the books. Perhaps instead of bypassing Congress to implement a plan

by executive order that launches a “war on coal”—as well as a war on jobs—this Administration could work with Congress on an “all of the above” energy approach that includes coal, energy efficiency, and everything in-between.

While my Democratic colleagues and I don’t always see eye-to-eye on the issues we review in this hearing room, I do believe we agree on the value and benefit of ESPCs, and I look forward to hearing from our witnesses on how we can help improve the program.

Chairman BROWN. Now, I will recognize the Ranking Member, my good friend and gentleman from New York, Mr. Maffei, for his opening statement.

Mr. MAFFEI. I thank you, Mr. Chair. And I do want to thank both you and Chairwoman Lummis for holding this hearing today, and indeed all of the Members. And we are also honored to be joined by the distinguished Ranking Member of the full Committee, Ms. Bernice Johnson—Eddie Bernice Johnson from Texas. I am always honored to be in the same room with her.

And I do want to concur with the statements of the Chairman in terms of Energy Savings Performance Contracts. I will submit my full statement to the record, but these are—at a time when all Federal agencies are fiscally challenged, these are an idea worth pursuing. ESPCs are widely seen as a good idea with potential large savings to the Federal Government and the U.S. taxpayer.

Like any government program, they need to be properly managed and carefully overseen. They have been implemented so far primarily through the Department of Energy’s Federal Emergency—I am sorry—Federal Energy Management Program. And since 1998, the program has awarded ESPC projects through 25 separate Federal agencies for a total estimated savings of \$7.2 billion. And most of these projects have occurred without any indication of abuse.

However, a recent audit of NASA Energy Savings Contracts by the NASA Inspector General found that that is not always the case. And while the NASA IG documented a case of poor government oversight, I believe if properly managed, Energy Savings Performance Contracts, our partnership between the Federal Government and the business community that can well serve the U.S. taxpayers and help conserve and protect our natural resources.

So I do look forward to hearing from the witnesses today about how to properly manage and oversight these contracts that improve the energy efficiency while reaping potential large Federal cost savings.

And I do again want to thank the Chairman for holding this hearing. I do note this is particularly well-timed with the President’s speech on Tuesday. I don’t know if you are coordinating that on purpose. But I do appreciate you doing this because I do think that these—this is a really good idea potentially, very—offering very much savings as long as we execute it correctly, and Congressional oversight is an important component of that.

I yield back.

[The prepared statement of Mr. Maffei follows:]

PREPARED STATEMENT OF REPRESENTATIVE DAN MAFFEI, RANKING MINORITY MEMBER, SUBCOMMITTEE ON OVERSIGHT

Thank you Chairman Broun and Chairwoman Lummis for holding this hearing today.

Energy Savings Performance Contracts or E-S-P-Cs are contracting vehicles that have permitted federal agencies to meet energy efficiency, renewable energy, water conservation and emissions reduction goals since they were first established by Congress in 1986. They allow federal agencies to implement energy efficient projects with limited up-front costs and significant long-term savings in unique public-private partnerships.

As part of these arrangements private sector Energy Service Companies (ESCOs) conduct comprehensive energy audits of federal facilities and identify long-term energy savings that will pay for the cost of the project over the term of the contract with the federal agency. The private contractor is responsible for paying for the building or facility's modifications up front and once the contract ends the cost savings accrue to the federal agency.

E-S-P-Cs have been implemented primarily through the Department of Energy's Federal Energy Management Program (FEMP) and since 1998 the program has awarded ESPC projects through 25 separate federal agencies for a total estimated savings of \$7.2 billion dollars.

At a time when all Federal agencies are fiscally constrained I believe ESPCs are an idea worth pursuing. ESPCs are widely seen as a good idea with potential large savings to the federal government and U.S. taxpayer. But like any government program they need to be properly managed and carefully overseen. A recent audit of NASA's Energy Savings Contracts by the NASA Inspector General found that is not always the case.

While the NASA IG documented a case of poor government oversight, but I believe if properly managed Energy Savings Performance Contracts (ESPCs) are a win-win for the federal government, American taxpayer and U.S. business community.

I look forward to hearing from our witnesses today about how to ensure proper management and oversight of these contracts that improve federal energy efficiency while reaping potentially large federal cost savings.

Chairman BROWN. Thank you, Mr. Maffei.

The Chair now recognizes the Chairman of the Subcommittee on Energy, Mrs. Lummis, for her opening statement. You are recognized.

Mrs. LUMMIS. Thank you very much, Mr. Chairman. And welcome, all, to this morning's hearing on Energy Savings Performance Contracts.

Improved energy efficiency can be a commonsense, market-oriented solution to lower energy bills. Just as consumers may choose to purchase more efficient vehicles to save on fuel costs and homeowners install insulation to reduce energy bills, the Federal Government should take similar steps when they make economic sense.

ESPCs are a mechanism to do that. ESPCs provide for a public-private partnership to increase the energy efficiency of federally owned facilities. The private sector assumes the upfront costs while sharing the rewards of reduced energy costs with American taxpayers. The Federal Government owns or leases almost 400,000 buildings, so even minor improvements to individual facilities can accumulate into major savings.

As with all government initiatives, it is important that ESPCs are implemented with maximum effectiveness. ESPC projects must be monitored for quality control and energy savings must be verified. Federal agencies should look at the overall impacts of a project. I look forward to hearing from the witnesses today on exploring opportunities and challenges associated with the use of ESPCs.

While ESPCs represent a mutually beneficial, market-based approach to reducing energy costs, they contrast sharply with the regulatory onslaught that President Obama announced on Tuesday. The President is again pushing an agenda that will punish hard-

working American families. His approach consists of policies already rejected by Congress in a bipartisan fashion. He wants expensive energy mandates, job-killing regulations, and hidden energy taxes.

These increased energy costs and burdensome regulations will punish our economy, especially for my State of Wyoming; it is the Nation's second-leading energy producer. Even more concerning are the direct consequences of higher energy costs on American households living paycheck to paycheck. And we have new information that shows how many people are living paycheck to paycheck. As household energy costs soar, moms' and dads' economic security slips away. As American families struggle to pay the Obama electricity tax, they will have less for their children's college fund, less for emergencies like unexpected illnesses or job loss, less to provide care for their aging parents, less for day-to-day expenses just to make ends meet. And why? So the President can impose more regulation, more mandates, and more taxes, chasing carbon reductions that are already occurring under current law.

While increasing the cost of energy might make the most privileged among us gleeful, you will forgive the millions of underprivileged Americans and the billions of poor around the world living in the literal dark for not supporting this elitist regime.

President Obama's efforts to threaten family energy security stand in stark contrast to my views and those of my colleagues on the Republican side of the aisle, pro-family energy strategies that take full advantage of America's abundant domestic energy supply, including natural gas, coal, oil, nuclear, renewables, and energy efficiency, which we will be discussing here today. I hope the President takes notice. We don't need carbon policy dictated from the White House. We need to work together to produce real results.

Thank you for the time, Mr. Chairman. I yield back.

[The prepared statement of Mrs. Lummis follows:]

PREPARED STATEMENT OF REPRESENTATIVE CYNTHIA LUMMIS, CHAIRWOMAN,
SUBCOMMITTEE ON ENERGY

Chairman Lummis: Improving energy efficiency can be a commonsense, market-oriented solution to lower energy bills. Just as consumers may choose to purchase more energy efficient vehicles to save on fuel costs, and just as homeowners install insulation to reduce electric bills, the Federal government should take similar steps when they make economic sense. Energy Savings Performance Contracts, or ESPCs, are a mechanism to do just that.

ESPCs provide for a public-private partnership to increase the energy efficiency of federally owned facilities. In doing so, the private sector assumes the upfront costs, while sharing the rewards of reduced energy costs with American taxpayers. The Federal government owns or leases almost 400,000 buildings, so even minor improvements to individual facilities can accumulate into major savings.

However, as with all government initiatives, it is important that ESPCs are implemented with maximum effectiveness. For example, ESPC projects must be monitored for quality control and energy savings must be verified. Federal agencies should look at the overall impact of a project, not solely at the dollar value attached to it. I look forward to hearing from the witnesses today and exploring opportunities and challenges associated with the use of ESPCs. It is important to note that, while ESPCs represent a mutually, beneficial, market-based approach to reducing energy costs, they contrast sharply with the heavy-handed regulatory onslaught that President Obama announced on Tuesday.

The President is again pushing an extremist environmental agenda, the costs of which will fall most harshly on hard-working American families. His approach consists of worn policies already rejected by Congress in a bipartisan fashion, and dou-

bles down on his preferred approach of expensive energy mandates, job-killing regulations, and hidden energy taxes.

These increased energy costs and burdensome regulations will throttle our economy, especially for my state of Wyoming, the nation's leading energy producer. Even more concerning are the direct consequences of higher energy costs on American households, living paycheck to paycheck.

As household energy costs soar, moms and dads will be left grasping as their economic security slips away. They will have less for their children's college fund. They will have less for an emergency, such as an unexpected illness or job loss. They will have less to provide care for their aging parents. They will have less for day-to-day expenses, all so the President can have more regulation, more mandates, and more taxes.

President Obama's policies stand in stark contrast to House Republicans' "all of the above" energy strategy. This strategy takes full advantage of America's abundant domestic energy supply, including coal, oil, nuclear, natural gas and energy efficiency, as we will discuss here today. Thank you for the time and I yield back.

Chairman BROWN. Thank you, Mrs. Lummis.

The Chair now recognizes Mr. Swalwell for his opening statement. You are recognized for five minutes.

Mr. SWALWELL. Thank you, Chairman Broun, Chairman Lummis, also Ranking Member Maffei, and of course our Committee Ranking Member, Ms. Bernice Johnson. I look forward to having this hearing today.

Energy Savings Performance Contracts, also known as ESPCs, are truly a win-win-win tool for the Federal Government and the U.S. taxpayer. The Federal Government is the largest energy customer in the country with over 1.2 million buildings that it is responsible for and hundreds of thousands of acres that it is also responsible for. ESPCs save money, improve energy efficiency, and reduce carbon pollution all with little to no upfront cost required.

As I am sure we will hear about more from this panel today, ESPCs, as well as Utility Energy Service Contracts, or UESCs, have a proven track record of saving the government billions of dollars and hundreds of trillions of BTUs so far.

I know these contracts work well because when I served as a city councilmember in the City of Dublin, California, I worked to implement our own local equivalent of an Energy Savings Performance Contract, and when I served on the Council, we saw a savings of approximately \$100,000 per year over the life of the lease that we signed.

The City of Livermore, our neighbor in Dublin, also enjoys an annual savings of \$74,000 a year over the life of their lease. Of course, these improvements will last longer than the 15 years it will take to repay the lease, and in year 16, each city anticipates a savings of roughly \$675,000 a year.

They will also tell you that, in addition to the savings, the real advantages of the program are the ability to move forward with these energy-saving improvements with very little risk and the access it gives communities like Livermore and Dublin to expertise that they wouldn't be able to otherwise afford.

One example we should be particularly proud of is the NASA Ames Research Center project. Thanks to the partnership between NASA and Pacific Gas and Electric, also known as PG&E, they were able to craft a plan that will exceed their energy efficiency and renewable energy goals. The UESC will result in an annual energy savings of 159 million BTUs, which will provide an 11 percent reduction in overall energy intensity. In short, these contracts

are not only good for local economic budgets, for the Federal budget, they are also good to make our Earth healthier.

PG&E also has a UESC project with the Veterans Administration in California. This project includes five separate medical center projects throughout California and over two million square feet. The project will save 15.7 million gallons of water, 1.3 million burns of natural gas, 9 gigawatt hours of electricity, and \$1.6 million annually in water and energy costs. Federal energy programs not only benefit the government entities that realize the savings from these improvements, but they also enjoy broad support from private industry.

To that end, I would like to submit to the record with permission from the Chair a letter from a number of groups and businesses, including the Chamber of Commerce and the Business Roundtable applauding the Obama Administration for their focus on energy efficiency and encouraging continuation and expansion of these activities.

I look forward to discussing how this unique authority might be improved upon and used for a wider range of applications such as the Federal vehicle fleet at our Nation's array of energy-hungry data centers. I expect that our national laboratories—we also have two of those in my Congressional District, Sandia and Lawrence Livermore—would be able to make great use of such improvements as well.

Thank you again, Mr. Chair, and I yield back the balance of my time.

[The prepared statement of Mr. Swalwell follows:]

PREPARED STATEMENT OF REPRESENTATIVE ERIC SWALWELL, RANKING MINORITY MEMBER, SUBCOMMITTEE ON ENERGY

Thank you Chairman Broun and Chairman Lummis for holding this hearing today, and I also want to thank the witnesses for being here.

Energy Savings Performance Contracts, or ESPCs, are truly a win-win-win tool for the federal government and the U.S. taxpayer. The federal government is the largest energy customer in the country and ESPCs save money, improve energy efficiency, and reduce carbon pollution, all with little-to-no upfront cost required. As I'm sure we'll hear more about from this panel, ESPCs, as well as Utility Energy Services Contracts, or UESCs, have a proven track record of saving the federal government billions of dollars and hundreds of trillions of BTUs so far.

I know these Contracts work because I have seen them work in my own district. In Dublin, California where I served on the City Council, we have seen a savings of approximately \$100,000 annually over the life of the lease.

The city of Livermore, California will enjoy an annual savings of \$74,000 a year over the life of their lease. Of course these improvements will last longer than the 15 years it will take to repay the lease and in year 16, they anticipate a savings of approximately \$675,000 a year. They will also tell you that, in addition to the savings, the real advantages of this program are the ability to move forward with these energy-saving improvements with very little risk and the access it gives communities like Livermore and Dublin to expertise that they otherwise couldn't afford.

One example we should be particularly proud of is the NASA Ames Research Center Project. Thanks to the partnership between NASA and Pacific Gas & Electric, they were able to craft a plan that will exceed their energy efficiency and renewable energy goals. This UESC will result in an annual energy savings of 159,909 million BTUs, which will provide an 11 percent reduction in overall energy intensity.

PG&E also has a UESC project with the Veterans Administration in California. This project includes five separate medical centers throughout California and over two million square feet. The project will save: 15.7 million gallons of water; 1.3 million therms of natural gas; 9 gigawatt-hours of electricity; and \$1.6 million annually in water and energy costs.

Federal energy efficiency programs not only benefit the government entities that realize savings from these improvements, but they enjoy broad support from private industry. To that end, I would like to submit for the record a letter from a number of groups and businesses, including the Chamber of Commerce and the Business Roundtable, applauding the Obama Administration for their focus on energy efficiency and encouraging continuation and expansion of these activities.

I look forward to discussing how this unique authority might be improved upon and used for a wider range of applications, such as the federal vehicle fleet or our nation's array of energy hungry data centers. I expect that our national laboratories, like Lawrence Livermore and Sandia, would be able to make great use out of such improvements.

Chairman BROUN. Mr. Swalwell, did I hear unanimous consent request to enter that letter into the record?

Mr. SWALWELL. Yes, please, Mr. Chair.

Chairman BROUN. We have a unanimous consent request. Hearing no objections, so ordered.

[The information follows:]

Chairman BROUN. I now recognize the Ranking Member of the full Committee, my dear friend from Texas, Ms. Eddie Bernice Johnson. Ms. Johnson, you are recognized for five minutes.

Ms. JOHNSON. Thank you very much, Mr. Chairman.

And I want to thank you for holding this hearing along with Chairwoman Lummis to evaluate Energy Savings Performance Contracts. And I want to thank the witnesses as well for being here today.

Energy Savings Performance Contracts, or the ESPCs, are tools capable of providing substantial financial and environmental benefits to both the Federal Government and companies in the private sector. A study conducted by the Oak Ridge National Laboratory earlier this year found that the extra cost savings of an ESPC project to the government are nearly twice as great as the guaranteed savings.

Investments in energy efficiency improvements can reduce energy costs, as well as generate much-needed jobs through the acquisition and development of necessary infrastructure and equipment. Often, the useful life of the equipment extends well beyond the performance period of the ESPCs.

Another key component of many ESPCs is the training and implementation of sustainable energy practices. I look forward to hearing from these witnesses on how we encourage the use of ESPCs to help make the Federal Government a leader and a leader in energy efficient building technology.

And I thank you and I yield back the balance of my time.

[The prepared statement of Ms. Johnson follows:]

PREPARED STATEMENT OF REPRESENTATIVE EDDIE BERNICE JOHNSON, RANKING MEMBER, COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY

I want to thank Chairman Broun and Chairwoman Lummis for holding this hearing to evaluate energy savings performance contracts, and I want to thank the witnesses on the panel as well.

Energy Savings Performance Contracts, or ESPCs, are tools capable of providing substantial financial and environmental benefits to both the Federal government and companies in the private sector. A study conducted by Oak Ridge National Laboratory earlier this year found that the actual cost savings of an ESPC project to the government are nearly twice as great as the guaranteed savings.

Investments in energy efficiency improvements can reduce energy costs as well as generate much needed jobs through the acquisition and development of necessary infrastructure and equipment. Often the useful life of the equipment extends well

beyond the performance period of the ESPC. Another key component of many ESPCs is the training and implementation of sustainable energy practices.

I look forward to hearing from these witnesses on how we can encourage the use of ESPCs to help make the Federal Government a leader in energy efficient building technologies.

Chairman BROWN. Thank you, Ms. Johnson.

If there are Members who wish to submit additional opening statements, your statements will be added to the record at this point.

At this time I would like to introduce our panel of witnesses. Our first witness is Dr. Kathleen Hogan, Deputy Assistant Secretary for Energy Efficiency at the U.S. Department of Energy. Our second witness is Dr. Woodrow Whitlow, Jr., Associate Administrator of the Mission Support Directorate of the National Aeronautics and Space Administration. Our third witness is Ms. Jennifer Schafer, Executive Director of the Federal Performance Contracting Coalition. And our final witness is Mr. Ron King, President Advisor of the National Insulation Association.

As our witnesses should know, spoken testimony is limited to five minutes each. And if you all would try to constrain yourself to five minutes. After which the Members of Congress will have five minutes each to ask questions. Your written testimony will be included in the record of the hearing.

And it is the practice of the Subcommittee on Oversight to receive testimony under oath. Now, if you would please stand.

Do any of you all have an objection to taking an oath?

Let the record show that all witnesses indicated by shaking their head from side to side in the usual manner to indicate they have no objections.

Now, if you would raise your right hand.

Do you solemnly swear or affirm to tell the whole truth and nothing but the truth, so help you God?

Okay. You may be seated. Let the record reflect that all the witnesses participating have taken the oath.

And before I recognize our first witness, let me say that I am anxious to hear your testimony, Dr. Hogan. I was even more anxious or eager to hear it 48 hours ago when it was due. I understand and I hope that you are not directly responsible and personally responsible for the tardiness in submitting your testimony to this Committee, but I would like for you to pass on this message to the appropriate person or persons that it is inconsiderate to provide testimony 18-1/2 hours before a hearing when the deadline is 48 hours. And we have seen this problem before out of your Department.

When testimony is delivered this late, it does not provide Members of this Committee sufficient time to review and prepare to engage in an informative discussion with you about the program. This is not the first time that the Department has exhibited such irresponsible behavior before this Committee, and it is a pattern that reflects very poorly on the Department and the Administration by default.

Further, if you will please confirm that you will personally ensure this Committee receives its responses to our questions for the record following the hearing in a timely manner that is closer to

two weeks than two months? Would you personally guarantee that, Dr. Hogan?

Dr. HOGAN. Yes, we are committed to a timely response and we also do apologize for the delay in the submittal of the testimony.

Chairman BROWN. Okay. Is that an affirmative that we will get our responses to written questions for the record closer to two weeks than two months?

Dr. HOGAN. Yes, that is.

Chairman BROWN. Thank you, ma'am. I appreciate that.

I thank everybody for your indulgence. And I now recognize Dr. Hogan for five minutes.

**TESTIMONY OF DR. KATHLEEN HOGAN,
DEPUTY ASSISTANT SECRETARY FOR
ENERGY EFFICIENCY,
U.S. DEPARTMENT OF ENERGY**

Dr. HOGAN. Thank you, Chairman Broun, Chairman Lummis, Ranking Members Maffei and Swalwell, and Members of the Subcommittee. And thank you for inviting me to testify today on behalf of the Department of Energy regarding energy efficiency and performance contracting.

We all know energy efficiency is a large, untapped resource in the United States that can provide savings for consumers, improve competitiveness, build jobs, and reduce reliance on foreign oil. And as the Nation's largest energy consumer, the Federal Government has a tremendous opportunity to reduce energy use, save taxpayer money, and lead by example.

Consider, as we have already heard mentioned, that the Federal Government operates a very large number of buildings and other structures comprising more than three billion square feet, operates a fleet of more than 600,000 civilian and non-tactical military vehicles, and does pay approximately \$25 billion for energy each year. This is approximately the same energy use as the city of Hong Kong or of all of New Zealand.

The size of the government has prompted a number of Federal energy management and sustainability goals to be established through statute and Executive Orders, and the preliminary data from Fiscal Year 2012 indicate that the Federal Government is making steady progress in achieving its energy, water, and greenhouse gas savings goals as outlined in my written testimony.

We also know that performance contracting does play an important role in helping the Federal Government unlock the considerable energy efficiency potential embedded in our Federal buildings as part of meeting these goals. Energy Savings Performance Contracts, or ESPCs, are one kind of performance-based contract. They are an arrangement between a Federal agency and an energy service company, known as an ESCO, who conducts a comprehensive audit for the Federal facility, identifies energy and/or water conservation measures, and implements those measures using their capital.

The ESCO also guarantees that the improvements will generate cost savings sufficient to pay for the project over the term of the

contract, and therefore, these contracts allow agencies to undertake energy savings projects without upfront capital outlays.

ESPCs do have built in accountability. The ESCO is required to conduct periodic measurement and verification to ensure that the guaranteed savings are being realized. Once the contract is complete, the agency and the U.S. taxpayer receive the full benefit of the remaining energy efficiency savings.

Since the Department's ESPC program began in 1998, there have been over 280 ESPC projects awarded through the Department of Energy's contract vehicle in particular for a total investment of about 2.7 billion and total guaranteed savings of about 7.2 billion. And on top of that, we do have the Presidential Performance Contracting challenge for the Federal Government to enter into a minimum of 2 billion in performance contracts by the end of this year, which is catalyzing additional use of this mechanism.

As of June, the agencies have identified projects in the pipeline or awarded with an estimated value of \$2.3 billion in investment, and so far, about 64 projects have been awarded with an investment value of over \$575 million. And clearly, there are more projects in the pipeline.

In addition, the President's issued Climate Action Plan this week did call for a number of actions to further strengthen efforts to promote energy efficiency through performance contracting.

At the Department of Energy, we do have the Federal Energy Management Program, which helps all the Federal agencies implement strong performance contracts, specifically that provides tools, training, and expertise to the agencies to help them achieve their statutory and Executive Order goals. This technical assistance and guidance helps overcome some of the barriers that we have seen such as limited agency contracting and technical staff familiar with the ESPC process.

Technical support is available at each stage of the ESPC process. That includes helping agencies determine whether an ESPC project is feasible, guiding them through project development and project acceptance, and also coordinating with the agencies and ESCOs as we provide life-of-contract support. FEMP also compiles best practices for the agencies and continues to improve the program where possible.

So looking forward, we see continued opportunity. As of March of this year, agencies have identified a potential for over 700 million a year in annual energy savings for audits they have already completed for energy and water savings. We know that ESPCs will be critical in achieving much of these savings and will provide multiple benefits to both the Federal Government and the American people.

So again, I thank you for the opportunity to be here today and look forward to our discussion and happy to answer any questions you may have.

[The prepared statement of Dr. Hogan follows:]

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Statement of

Dr. Kathleen Hogan

Deputy Assistant Secretary for Energy Efficiency
Office of Energy Efficiency and Renewable Energy
U.S. Department of Energy

Before the

Committee on Science, Space and Technology
Subcommittee on Oversight
Subcommittee on Energy
U.S. House of Representatives

June 27, 2013

Chairmen Broun and Lummis, Ranking Members Maffei and Swalwell, and Members of the Subcommittees, thank you for inviting me to testify today on behalf of the Department of Energy (DOE) regarding energy savings performance contracts (ESPCs).

Energy efficiency is a large, untapped resource in the United States that can provide savings for consumers, improve competitiveness, and reduce reliance on oil. As Deputy Assistant Secretary for Energy Efficiency in the Office of Energy Efficiency and Renewable Energy (EERE), I am responsible for overseeing DOE's portfolio of energy efficiency research, development, demonstration, and deployment activities.

I am pleased to be here today, and look forward to working with Congress to use performance contracting as a tool to help address our nation's energy challenges and save taxpayers money, especially in the current fiscal environment.

In my testimony, I will discuss:

1. Progress by the Federal government in meeting energy and sustainability goals;
2. Federal government use of performance contracting;
3. How DOE helps Federal agencies overcome barriers to performance contracting; and
4. The importance of ESPCs in continuing to achieve energy and cost savings.

1. Progress by the Federal government in meeting energy and sustainability goals

As the nation's largest energy consumer, the Federal government has a tremendous opportunity and a clear responsibility to lead by example. The Federal government operates more than 500,000 buildings and other structures comprising more than 3 billion square feet and operates a fleet of more than 600,000 civilian and non-tactical military vehicles. In FY 2012, the total primary or source energy consumption of the U.S. government, including energy consumed to produce, process, and transport energy, was 1.6 quadrillion British thermal units (Btu) or "quads." These 1.6 quads represent 1.7 percent of the 95.4 quads¹ of total United States energy consumption. Of that consumption, approximately one-third was attributable to building energy use, and two-thirds to vehicles and equipment. The total cost to the Federal government was approximately \$25 billion² in FY 2012, representing 0.7 percent of total Federal expenditures for that year.³ For comparison, this level of energy use is approximately the same as the city of Hong Kong or all of New Zealand.

¹ DOE/EIA, Monthly Energy Review March 2013, Table 1.1. <http://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf>

² Unless otherwise noted, all costs cited in this report are in constant 2012 dollars, calculated using Gross Domestic Product implicit price deflators. See Bureau of Economic Analysis web site, <http://www.bea.gov/national/xls/gdplev.xls>.

³ *Annual Report to Congress on Federal Government Energy Management and Conservation Programs, FY 2012.*

The size and impact of the government's investment in buildings and vehicles—and the corresponding use of energy and other resources—has prompted a number of energy management and other sustainability goals to be established through statutes and Executive Orders. These include the Energy Policy Act of 2005 (EPACT 2005), the Energy Independence and Security Act of 2007 (EISA), and Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance.

The preliminary data from FY 2012 indicate that the Federal government as a whole is making steady progress in achieving many of its energy, water and sustainability goals. For example:

- The Federal government achieved over a 20 percent reduction in energy use per square foot as compared to FY 2003. Under Section 431 of EISA, the Federal government is required by FY 2015 to reduce energy intensity by 30 percent compared to 2003 levels.
- Renewable energy sources provided 7.1 percent of the Federal government's electricity use, ahead of a 5 percent target. In FY 2013 and beyond, the goal under Section 203 of EPACT 2005 is for the government to derive at least 7.5 percent of its electricity from renewable sources to the extent economically feasible and technically practicable.
- The Federal government reduced its potable water intensity use by 16.6 percent as compared to FY 2007. The target was a 10 percent reduction by FY 2012, with a long-term goal of a 26 percent reduction by FY 2020 under Executive Order 13514.
- The Federal government's emission of direct and indirect greenhouse gas (GHG) emissions from the consumption of purchased electricity, heat or steam (the majority of which arise from building energy use) were reduced by 15.1 percent in FY 2012 relative to FY 2008. The government's long-term target is a 28 percent reduction by 2020.

In addition to the goals outlined above, the Presidential Performance Contracting Challenge asks the Federal government to enter into a minimum of \$2 billion in performance-based contracts by December 2013.

2. Federal government use of performance contracting

Performance based contracts are a particular form of contracts that makes payment contingent on successful completion of certain tasks outlined in the contract. As part of the Administration's efforts to improve contracting, the Administration issued a directive to agencies to increase the use of this kind of contract, which reduces risk to government. ESPCs and UESCs help Federal agencies meet their energy, water, and other savings goals by allowing them to undertake certain projects without up-front capital costs.

An ESPC is an arrangement between a Federal agency and an energy service company (ESCO). The ESCO conducts a comprehensive energy audit for the Federal facility and identifies energy conservation measures, water conservation measure, or a series of such measures at one or more locations. Each energy conservation measure must be applied to a Federal building, improve energy efficiency, be lifecycle cost effective, and involve energy conservation, cogeneration facilities, renewable energy sources, improvements in operation and maintenance efficiencies, or retrofit activities. Each water conservation measure must improve the efficiency of water use, be life cycle cost effective, and involve water conservation, water recycling or reuse, more efficient treatment of wastewater or stormwater, improvements in operation or maintenance efficiencies, retrofit activities, or other related activities.

While purchase of Federal building improvements with appropriated funds is the lowest-cost approach for the government, since private borrowing costs exceed those of the government, competing demands for funds within agencies often means that these investments in infrastructure get lower priority. Therefore, because the ESCO guarantees that the improvements will generate energy cost savings sufficient to pay for the project over the term of the contract, which is a maximum of 25 years, the government can acquire these assets through ESPCs without capital outlays. The ESCO is also required to conduct periodic measurement and verification to ensure that guaranteed savings under the ESPC are being realized by the Federal agency. Once the contract is completed, the agency—and the U.S. taxpayer—receive the full benefit of any residual energy efficiency savings.

A utility energy service contract (UESC) is a contract between a Federal agency and its serving electric or gas utility for comprehensive energy and water efficiency improvements and demand management services. The utility assesses the opportunities designs and implements the accepted energy conservation measures and may provide third party financing to cover all or a portion of the required capital expenditure.

The Federal government has made great progress in achieving savings through performance contracting. Since the Department's ESPC program began in 1998, there have been over 281 ESPC projects awarded through DOE's contract vehicles alone with a total investment amount of \$2.7 billion.⁴ The total guaranteed savings of these 281 ESPCs was \$7.2 billion. Historical program performance for ESPCs has shown that reported savings is on average 105 percent of guaranteed savings, thus yielding an approximately \$7.5 billion in annual savings from the implemented projects to date, for a net savings of over \$300 million. The first UESC was awarded in 1991 with 1,763 projects reported through June 24, 2013 totaling over \$2.6 billion in total capital investment.

⁴ An additional 125 projects have been award through the U.S. Army Corp of Engineers IDIQ contract since 1998.

The Presidential Performance Contracting Challenge for the Federal government to enter into a minimum of \$2 billion in performance contracts, which include both ESPCs and UESCs, is catalyzing additional investment. As of June 2013, agencies have identified projects (in the pipeline or awarded) with approximately \$2.3 billion investment value. As of June 15, 2013, agencies have identified 301 projects, with 182 of those identified projects to be completed through DOE's contracting vehicle. So far, 65 projects have been awarded with an investment value of \$576.5 million. Another 230 projects are in the development pipeline with the expectation of a project being awarded.

3. How DOE helps Federal agencies overcome barriers to performance contracting

DOE's Federal Energy Management Program (FEMP) provides services, tools, and expertise to Federal agencies to help them achieve the statutory and Executive Order goals. FEMP offers technical assistance and guidance to agencies on energy efficiency, renewable energy and other energy management projects. FEMP also helps agencies use both appropriated funds and money leveraged through performance contracts to implement and fund energy efficiency, renewable energy, and water efficiency projects. This type of assistance helps agencies overcome barriers such as lack of available agency contracting and technical staff familiar with the performance contracting process. Thanks in part to FEMP's increased involvement and streamlining efforts, many Federal agencies increased their understanding and utilization of these performance contracts. Efforts around standardization, training, process simplification, project facilitation, and the establishment of goals to help bring these important tools to the attention of agency leadership and staff, are all key ingredients to helping these tools become standard in the Federal government.

One contracting vehicle used to make ESPCs as practical and cost-effective as possible for Federal agencies is the indefinite-delivery, indefinite-quantity (IDIQ) contract. The general terms and conditions of the IDIQ contract provide for an indefinite quantity, within stated limits, of supplies or services during a fixed period. Contracting Officers use the contract only when a recurring need is anticipated. DOE awarded this type of "umbrella" contract to ESCOs based on their abilities to meet specific terms and conditions. ESPCs, including those awarded under the IDIQ contracts are used by Federal facilities worldwide.

FEMP is available to provide technical support to agencies at each stage of the ESPC and UESC process. For example in ESPCs, support is delivered through FEMP project facilitation and development, FEMP training programs, Federal financing specialist services, and project facilitator services. DOE's National Laboratories have also developed screening and analysis tools for renewable and emerging technologies. Projects have utilized these tools to help in their decision making progress.

FEMP staff also coordinates with Federal agencies and ESCOs to provide support, including tracking of performance and completion of upcoming measurement & verification (M&V) activities through the life of the contract. FEMP's ENABLE program also provides a standardized and streamlined process for using ESPCs to implement energy efficiency and water conservation measures in Federal facilities smaller than 200,000 square feet. With the ongoing optimization efforts of FEMP, agencies using the ESPC ENABLE can now realize energy and water savings within six months of project completion.

FEMP has also put together new best practices for the notice of opportunity, the preliminary assessment, and the investment grade audit that will result in reduced cycle time and avoid duplication of efforts. This has resulted in significant progress in shortening the schedule for agencies to make ESPC awards. As a result, FEMP recommends a 12 month planning cycle, but certain project circumstances may add development time beyond this time frame. Agencies can now use this streamlined approach as a template for planning, scheduling, and tracking their activities during the award process.

Finally, FEMP is continually reviewing the DOE IDIQ contract, the FEMP-provided contract documents and templates, and ESPC training materials to identify opportunities to streamline the process and make changes that will allow projects to be awarded as efficiently as possible. The most recent update to the DOE IDIQ contract was to place particular emphasis on assessing renewable energy opportunities along with other energy and water conservation measures.

4. The importance of ESPCs in continuing to achieve energy and cost savings

Federal agencies continue to work on a number of energy and water savings and sustainability goals, and performance contracts will remain an important tool in achieving them. As of March 2013, agencies had identified a potential \$735 million in total annual savings from EISA-mandated energy and water audits. The audits identified 75,000 energy and water efficiency/conservation measures, which have the potential to produce \$683 million in annual energy savings (34 trillion Btu) and \$25 million in annual water savings (15 billion gallons). Federal agencies have reported potential efficiency investments of \$9.7 billion in their facilities, so the opportunity for future investments is there for future energy waste reductions. The agency audits estimate an implementation cost for these identified measures of \$9.5 billion. Absent appropriated funds to carry out these projects, ESPCs will be critical in achieving significant progress toward reaching these energy and cost savings.

Conclusion

ESPCs offer a great deal of flexibility to Federal agencies by allowing them to perform significant energy and water management upgrades to their facilities without significant upfront costs when appropriated funds for capital investments are not available. By engaging private

sector financing and ESCO expertise, ESPCs provide multiple benefits to both the Federal government and the American public. By making the use of ESPCs, agencies will be able to incorporate more energy and water conservation measures to maximize savings and meet their statutory and Administration energy and sustainability goals.

Thank you again for the opportunity to speak to this important issue, and I would be happy to answer any questions you may have.

Kathleen Hogan

Deputy Assistant Secretary for Energy Efficiency
U.S. Department of Energy



Dr. Kathleen Hogan is the Deputy Assistant Secretary for Energy Efficiency in the Office of Energy Efficiency and Renewable Energy (EERE) at the U.S. Department of Energy. In this capacity, Dr. Hogan oversees a more than \$900 million annual energy efficiency policy, program, and research portfolio including industrial, buildings, and vehicle technologies, along with federal energy management. As part of EERE's senior leadership, Dr. Hogan helps to oversee \$16.8 billion in American Recovery and Reinvestment Act funding.

Prior to this position, Dr. Hogan served for more than 10 years as the Division Director at the U.S. Environmental Protection Agency responsible for the development and operation of EPA's clean energy programs focused on removing market barriers for energy efficiency and renewable energy. These programs included the ENERGY STAR[®] program, programs for combined heat and power and renewable energy, corporate leadership programs, and efforts focused on state clean energy policies. Under her management, ENERGY STAR grew to a national brand for energy efficiency across products, new homes, and buildings. She was also a key convener of the National Action Plan for Energy Efficiency and has served as a technical advisor on the boards of a number of national and regional energy efficiency organizations.

Earlier in her EPA career, Dr. Hogan developed and managed programs to address emissions of methane and the high global warming potential gases including programs with the natural gas, waste management, livestock, aluminum smelting, and electronics industries. She also worked to address methane emissions in the Russian natural gas system and was an expert contributor on these topics to assessment reports of the Intergovernmental Panel on Climate Change.

Dr. Hogan has been recognized for her work with a Presidential Rank Award, induction into the Energy Efficiency Hall of Fame of the U.S. Energy Association, and as a contributor to the Nobel Peace Prize awarded to the Intergovernmental Panel on Climate Change.

Dr. Hogan has a Ph.D. from the Department of Geography and Environmental Engineering at the Johns Hopkins University and a Bachelor of Science in Chemistry from Bucknell University.

Chairman BROUN. Thank you, Dr. Hogan. I now recognize our next witness, Dr. Whitlow. Dr. Whitlow, you are recognized for five minutes.

**TESTIMONY OF DR. WOODROW WHITLOW, JR.,
ASSOCIATE ADMINISTRATOR,
MISSION SUPPORT DIRECTORATE,
NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION**

Dr. WHITLOW. Chairman Broun and Lummis, Ranking Members Maffei and Swalwell, and Members of the Subcommittees, thank you for the opportunity to appear here today to discuss NASA's use of the ESPCs.

NASA has established policies and procedures to improve energy efficiency through the reduction of energy use and implementation of sustainable energy practices. The use of performance contracting vehicles such as ESPCs and UESCs enables NASA to protect and leverage the value of its appropriated facilities funding while providing a guaranteed return on investment in conservation measures that help the Agency to achieve Federal energy and water reduction and renewable energy goals.

NASA's field centers actively consider and pursue the use of energy savings contracts in order to repair and renew our infrastructure. This is consistent with NASA's master planning goals. ESPCs contribute to better facility operational conditions while reducing our energy consumption. This reduced utility consumption ultimately decreases energy and water risks to NASA's missions.

NASA field centers have awarded over \$174 million in ESP contract value across 20 projects since we began using ESPCs in 1999. These projects resulted in annual energy consumption reductions of approximately 495 billion BTUs and \$8.5 million in savings. NASA's ESPC projects contribute significantly to the \$2 billion Federal investment in energy savings projects directed by President Barack Obama in December 2011. We pledged to award \$19.6 million of investment value in ESPCs and UESCs before the end of this year. Our field centers awarded \$28 million of investment value by November 2012, 24-1/2 million of this via ESPCs, making us the first Federal agency to fulfill its pledged investment amount.

Specifically, Goddard Space Flight Center's Wallops Flight Facility in Virginia continues to conduct a particularly noteworthy ESPC project with a total contract value of nearly \$36 million. The associated infrastructure energy efficiency improvements resulted in significant reductions in Wallops' energy and water intensities and in greenhouse gas emissions. Virginia recognized the first phase of this project among the Gold Medal winners of the 2012 Governor's Environmental Excellence Award, and the Department of Energy featured this project on an energy action campaign poster.

As mentioned, in April of this year, the NASA IG issued a report on NASA's management of energy savings contracts, and its review included an examination of our first use of ESPCs, a DOE contract task order awarded by the Johnson Space Center in 1999. The IG identified shortcomings in the administration of this first contract

and provided recommendations for management actions to reduce the risk of error in management of ongoing and future ESPCs.

Accordingly, we have undertaken actions to ensure that sound management practices are applied to the implementation of ESPCs. We have issued interim direction for the immediate implementation of these requirements as we finalize our procedural requirements.

In conclusion, ESPCs represent an important tool that is available to NASA field centers in the ongoing effort to repair and renew agency facility and utility infrastructure in order to improve energy and water efficiency and security. We expect to continue to actively utilize this tool to support our mission in the years ahead.

Again, thank you for the opportunity to appear here today.
[The prepared statement of Mr. Whitlow follows:]

HOLD FOR RELEASE
UNTIL PRESENTED
BY WITNESS
June 27, 2013

Statement of

Dr. Woodrow Whitlow, Jr.
Associate Administrator
Mission Support Directorate
National Aeronautics and Space Administration

before the

Subcommittee on Oversight
and
Subcommittee on Energy
Committee on Science, Space, and Technology
U.S. House of Representatives

Chairmen Broun and Lummis, Ranking Members Maffei and Swalwell, and Members of the Subcommittees, thank you for the opportunity to appear today to discuss NASA's use of Energy Savings Performance Contracts (ESPCs). I will summarize NASA's use of ESPCs as part of the Agency's energy management and conservation effort, address how this procurement mechanism supports NASA's mission, and provide an overview of our success with ESPC implementation and continual improvement actions underway.

Federal ESPC Authority: Consistent with and in support of the requirements of the National Energy Conservation Policy Act (NECPA), as amended by the Energy Policy Act of 1992, and a body of executive orders that mandate the improvement of energy efficiency in Federal facilities, NASA has established policies and procedures to improve energy efficiency through the reduction of energy use and implementation of sustainable energy practices. These efforts to strengthen NASA's environmental stewardship of its physical assets reduce energy and water risk to the Agency's missions. The use of performance contracting vehicles such as ESPCs enables NASA to protect and leverage the value of its appropriated facilities funding while providing a guaranteed return on investment in conservation measures that help the Agency to achieve Federal energy and water reduction and renewable energy goals.

Authorization for Federal agencies to implement energy efficiency improvements through the use of ESPCs is provided under the NECPA (codified at 42 U.S.C. § 8287 et seq.) The ESPC mechanism establishes a partnership between a Federal agency and an energy service company (ESCO). The ESCO conducts a comprehensive energy audit for the Federal facility and identifies improvements to save energy and water. In consultation with the Federal agency, the ESCO designs and constructs a project that meets the agency's needs and then arranges the necessary funding through competitive means. The ESCO guarantees that the improvements

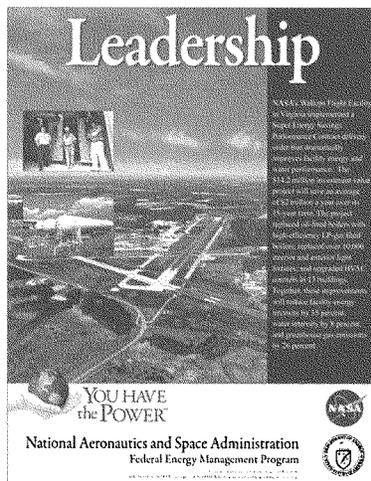
will generate energy and water cost savings sufficient to pay for the project over the term of the contract. After the contract ends, all additional cost savings accrue to the agency. To streamline the procurement process, the Department of Energy (DOE), Federal Energy Management Program (FEMP), developed master indefinite delivery indefinite quantity contracts that provide Federal agencies the opportunity to implement projects by awarding individual task orders under these umbrella contracts. Further, the FEMP provides a support system that includes legal and funding guidance, project facilitators, and expertise and training to support agencies' implementation of ESPCs.

Mission Benefit: NASA relies on the performance and efficiency of its facility and utility infrastructure in order to safely conduct the Agency's mission. NASA Field Centers actively consider and pursue the use of energy savings contracts such as ESPCs and Utility Energy Services Contracts (UESCs) in order to repair and renew our infrastructure in alignment with NASA master planning goals. ESPCs contribute to better facility operational conditions such as temperature, humidity, ventilation, and lighting levels by upgrading facility systems. Advances in technology enable improved operational performance while simultaneously reducing utility consumption. Reducing our utility consumption ultimately decreases energy and water risk to NASA's mission associated with regional utility capacity, regional air quality, local and national energy security vulnerability, and utility price volatility.

NASA ESPC Implementation and Success: NASA Field Centers have awarded over \$174 million in ESPC contract value across twenty projects since NASA began using ESPCs in 1999. Together, these projects enabled infrastructure energy efficiency improvements resulting in NASA energy consumption reductions of approximately 495 billion British thermal units and \$8.5 million annually.

NASA ESPC projects successfully contributed to the \$2 billion Federal investment in energy savings projects directed by President Barack Obama in his December 2011 Memorandum for the Heads of Executive Departments and Agencies. NASA pledged to award \$19.6 million of investment value in ESPCs and UESCs before the end of 2013. NASA Field Centers awarded \$28 million of investment value by November 2012, \$24.5 million of this via ESPCs, which resulted in NASA becoming the first Federal agency to fulfill its pledged investment amount.

Regarding the success of a specific project, Goddard Space Flight Center's Wallops Flight Facility (WFF) in Virginia continues to conduct a particularly noteworthy ESPC project with a total contract value of nearly \$36 million. The first phase of this project replaced oil-fired boilers with high-efficiency liquefied petroleum gas-fired boilers; replaced over ten thousand interior and exterior light fixtures; and upgraded heating, ventilating, and air conditioning (HVAC) controls in thirteen buildings. These infrastructure energy efficiency improvements produce a 35 percent reduction in WFF's energy intensity, an eight percent reduction in water intensity, and a 26 percent reduction in greenhouse gas emissions. Currently underway, the second phase of this project upgrades HVAC systems on Wallops Island to ground-source heat pump technology. This technology presents a maintenance advantage over the previous air-source heat exchangers, which repeatedly experienced premature failure due to the island's corrosive ocean salt air environment. Virginia recognized the first phase of this project among the Gold Medal winners of the 2012 Governor's Environmental Excellence Award. The Department of Energy featured this project on the following energy action campaign poster:



Continual Improvement: In April 2013, the NASA Office of Inspector General (OIG) issued an audit report on NASA's Management of Energy Savings Contracts. The OIG review included controls and management of active ESPCs at five NASA facilities, and in particular, an examination of the procurement that represented NASA's first foray into the use of ESPCs, a DOE contract task order awarded by the Johnson Space Center, Texas, in 1999. The OIG identified shortcomings in the administration of this first contract, and provided recommendations for management actions to reduce the risk of error in management of ongoing and future ESPCs, both at the outset of an award and in continued monitoring and oversight to assure a correct return on investment over time. Accordingly, NASA has undertaken actions to ensure that sound management practices are applied to the implementation of ESPCs. The Agency has initiated updates to official procedural requirements to include requirements for comprehensive training, such as that provided by DOE's FEMP, to be completed by ESPC request originators and contracting personnel, and for ESPC projects to be implemented in accordance with DOE guidance and contract management tools. Updated procedures also include improved requirements for monitoring factors that affect the consistency of annual energy savings over the life of the contract, such as site conditions, building renovation or demolition. NASA has issued interim direction for the immediate implementation of these requirements as its Agency-level procedural requirements are finalized.

In conclusion, ESPCs represent an important tool available to NASA Field Centers in the ongoing effort to repair and renew Agency facility and utility infrastructure in order to improve energy and water efficiency and security. NASA expects to continue to actively utilize this tool to support our mission in the years ahead.

DR. WOODROW WHITLOW, JR.
Associate Administrator for Mission Support Directorate



Dr. Woodrow Whitlow, Jr. is the Associate Administrator for Mission Support Directorate at NASA Headquarters. He was appointed to that position by Administrator Charles F. Bolden on Feb. 3, 2010.

The Mission Support Directorate enables program and institutional capabilities to conduct NASA's aeronautics and space activities. As the directorate's associate administrator, Dr. Whitlow is responsible for most NASA management operations, including human capital management, headquarters operations, agency operations, the NASA Shared Services Center, strategic infrastructure, cross-agency support, and construction and environmental compliance and restoration.

Prior to being appointed to his current position, Dr. Whitlow was Director of the Glenn Research Center. There, he was responsible for managing an annual budget of approximately \$750 million, and overseeing a workforce of approximately 1,680 civil service employees that is supported by approximately 1,580 contractors. The center has 24 major facilities and over 500 specialized research facilities located at the 350-acre Cleveland site and the 6,400-acre Plum Brook Station site in Sandusky, Ohio. At Glenn, Dr. Whitlow led research and development efforts in the areas of aero-propulsion, in-space propulsion, aerospace power and energy conversion, communications technology, and human research.

From September 2003 through December 2005, Dr. Whitlow served as the Deputy Director of the NASA John F. Kennedy Space Center. There his duties included assisting the director in determining and implementing center policy and in managing and implementing the center's missions and agency program responsibilities in the areas of processing, launch, and recovery of launch vehicles; processing of spacecraft; and acquisition of launch services. Prior to this appointment as Deputy Director, he served as the Director of Research and Technology at the Glenn Research Center.

Dr. Whitlow began his professional career in 1979 as a researcher at the NASA Langley Research Center, Hampton, Virginia. He assumed various positions of increasing responsibility before moving to the Glenn Research Center in 1998. In 1994, he served as Director of the Critical Technologies Division, Office of Aeronautics, at NASA Headquarters.

Whitlow earned his Bachelor of Science, Master of Science and Doctor of Philosophy degrees in Aeronautics and Astronautics from the Massachusetts Institute of Technology. He also holds an honorary doctor of engineering degree from Cranfield University. He has written over 40 technical papers, most in the areas of unsteady transonic flow, aeroelasticity, and propulsion.

Whitlow has received numerous awards, including the Presidential Rank of Distinguished Executive, Presidential Rank of Meritorious Executive, U.S. Black Engineer of the Year in Government, NASA Exceptional Service Honor Medal, NASA Equal Opportunity Honor Medal, the (British) Institution of Mechanical Engineers William Sweet Smith Prize, Minorities in Research Science Scientist-of-the-Year Award, and National Society of Black Engineers Distinguished Engineer of the Year Award. The American Institute of Aeronautics and Astronautics elected him as a Fellow in 2010.

Chairman BROUN. Thank you, Dr. Whitlow. I now recognize Ms. Schafer for five minutes.

**TESTIMONY OF MS. JENNIFER SCHAFFER,
EXECUTIVE DIRECTOR,
FEDERAL PERFORMANCE CONTRACTING COALITION**

Ms. SCHAFFER. Good morning, Mr. Chairman and Members of the Committee.

My name is Jennifer Schafer. I am the Executive Director of the Federal Performance Contracting Coalition, which represents many of the leading energy service companies that do work with the Federal Government. Our members include—and I am going to read them—Ameresco, Chevron Energy Services, Constellation Energy, Honeywell, Johnson Controls, Lockheed Martin, NextEra Energy Solutions, NORESO, Schneider Electric, Siemens Government Technologies, and Trane/Ingersoll-Rand.

This group of ESCOs performs about 90 percent of the work with the Federal Government and has done so historically. These companies have been improved through a very rigorous process to pursue ESPCs with the Federal Government through an indefinite delivery and indefinite quantity contract. Basically, that contract prequalifies companies to pursue opportunities with Federal facilities and individual sites.

The contract has been updated several times over the past several years, particularly in the area of measurement and verification and in operations and maintenance. In fact, the most recent contract, which was initiated in 2009, has very aggressive protocols to ensure that the government gets what it pays for. Ranking Member Johnson mentioned the Oak Ridge National Lab report that bears this out and says that Federal ESPC-based projects save almost twice what is guaranteed by the contractor.

ESPCs aren't just for saving energy and therefore saving money; they also provide the government with critical infrastructure, energy-related infrastructure, that they can't afford to purchase right now; critical operations and maintenance support, which we can't afford the staff right now; and they also solve individual problems for facilities.

In 2011 when the U.S. Chamber of Commerce testified about ESPCs before this Subcommittee—excuse me, full Committee—they emphasized the expertise brought by the ESCOs, the jobs created in the private sector, and the guarantee of energy savings.

There have been studies indicating that compared to projects achieved with appropriated dollars or other ways to get energy efficiency, comprehensive efficiency projects in the Federal Government, ESPCs deliver a much better value overall to the taxpayer even though they include financing costs. Right now, those costs are very low.

A 2006 Oak Ridge study asserted that even at the higher interest rates in 2006, ESPCs were a better deal for the government because they ensure the performance of the equipment. In a design-build project, operations and maintenance are generally not as rigorous and efficiencies and therefore dollars saved can erode very quickly.

Another major benefit of the ESPCs is that they are set up to provide an abundance of information about performance, which is not the case with other types of projects. There is no other program in the Federal Government that requires this level of measurement and verification, which may just be that transparency—that is why they have been examined so frequently over the years.

Questions or concerns about ESPCs typically revolve around the fact that contracting for them is not business as usual. Changes in personnel at agencies and elsewhere make education a critical and ongoing effort. Often, delays in executing projects stem from legal, contracting, or other personnel who simply are unfamiliar with the contracting vehicle. The DOE has done much to address this through training and other efforts. Our group also constantly works on that same thing.

This program has evolved and improved over the years. It is now time to take it to the next level, time to focus on shorter contracting cycles, bigger project scopes, and frankly, just more ESPCs. Even at the current enhanced run rates under the President's initiative, the companies on the IDIQ contract have excess capacity.

We would like to see a continued focus on ESPCs as, thankfully, has been the case for the last three Administrations. We now have a bipartisan caucus here in the House that is chaired by Congressman Welsh and Congressman Gardner that really works on reducing barriers to their use. Citizens against Government Waste recently supported their efforts in a June 7 commentary entitled "ESPC Zone: Everybody Scores with Energy Efficiency."

Using private sector money and expertise to reduce energy and infrastructure expenditures is a natural during this time of constrained budgetary Federal budgets, so I appreciate the opportunity to talk about the program and look forward to answering questions. Thank you.

[The prepared statement of Ms. Schafer follows:]

**Testimony of Jennifer Schafer-Soderman, Executive Director
Federal Performance Contracting Coalition (FPCC)
Before the House Science Subcommittees on Oversight and Energy
June 27, 2013**

Chairman Broun, Chairwoman Lummis and members of the subcommittee, thank you for inviting me to testify today regarding private sector mechanisms and financing available to advance energy efficiency across the Federal government.

I am Jennifer Schafer, Executive Director of the Federal Performance Contracting Coalition, which is a national industry coalition comprised of Energy Service Companies advocating for increased federal use of Energy Savings Performance Contracts (ESPCs). Our coalition focuses exclusively on Federal use of ESPCs and has spent time over the last thirteen years removing congressional and administrative barriers to usage, extending necessary authorities, educating about ESPCs and otherwise encouraging their usage as a means for saving the government money on both energy and infrastructure. This year, we have worked closely with Congressmen Cory Gardner and Peter Welch to increase Congressional Membership of the bipartisan Energy Savings Performance Caucus.

The Federal Performance Contracting Coalition's members have delivered over 90 percent of Federal Energy Savings Performance Contracts. This coalition is comprised of companies such as Ameresco, Chevron Energy Solutions, Constellation Energy, Honeywell, Johnson Controls, Lockheed Martin, NextEra Energy Solutions, NORESKO, Schneider Electric, Siemens Government Technologies, and Trane/Ingersoll Rand.

I am here today to discuss the FPCC experiences in working with the Federal government and to suggest ways that the process may be improved.

Energy Savings Performance Contracting (ESPC)

As the nation's single largest energy consumer, the Federal government spends more than \$7 billion annually on its energy costs. Energy efficiency improvements can reduce this expenditure as well as help agencies acquire necessary infrastructure and equipment. In 2007, the Energy Independence and Security Act required Federal agencies to perform energy audits of their facilities. Today, with only half of the buildings audited approximately \$9 billion worth of energy conservation measures with a ten year payback or less have been identified. There is clearly a vast opportunity for energy efficiency across the Federal government at a time of reduced discretionary funding.

Energy Savings Performance Contracts can fill this funding gap. For over 20 years, performance-based contracts for energy savings have provided critical upgrades to Federal buildings, including the House and Senate Office Buildings and the U.S. Capitol.

Under an ESPC, private sector Energy Service Companies finance and install new energy efficient equipment at no upfront cost to the Federal government. Federal agencies repay this investment over time with funds saved on utility costs. The private sector contractors measure, verify and guarantee these energy savings. Private sector financiers provide the capital, which today is available at historically low interest rates. By law, and on a negotiated basis, the government never pays more than it would have paid for utilities if it had not

entered into the ESPC. *In fact, a June 2013 Oak Ridge National Laboratory study found that under an ESPC federal agencies are saving an average of almost twice as much energy as is guaranteed by the contractor.* In addition to generating energy and dollar savings, years of deferred maintenance at Federal facilities are successfully addressed by ESPC retrofits at no additional cost to taxpayers. For these reasons, ESPCs have proven to be a highly successful means to implement comprehensive energy efficiency projects.

ESPCs are used in Federal, state and municipal buildings as well as in schools, hospitals and universities. Over 30 states have authorized state ESPC programs and the Energy Service Company market is estimated to exceed \$5 billion annually. In the past twenty years, the US ESCOs delivered about \$45B in projects paid from savings, \$50B in energy and maintenance savings - guaranteed and verified, 400,000 person-years of direct employment, \$30 billion of infrastructure improvements in public facilities and 450 million tons of CO₂ savings at no additional cost.

FPCC Experience with the Federal ESPC Contract

To capture these benefits more readily, the Federal government has Indefinite Delivery/Indefinite Quantity ESPC contracts that allow for their agencies to more simply develop ESPC projects. For the Federal government, both the Department of Energy and the Army Corps of Engineers have such master contracts both of which have evolved over the last two decades. According to DOE's Federal Energy Management Program there have been 570 performance contract projects worth \$3.9 billion awarded to 25 federal agencies and organizations. These projects reduced annual energy consumption by 32.8 trillion Btu, and resulted in energy savings valued at \$13.1 billion, of which approximately \$10.1 billion went to finance project investments, leaving a net savings of \$3 billion to the federal government.

In 2009, the Department of Energy prequalified 16 Energy Service Companies for Super ESPC IDIQ contracts of \$5 billion each. The FPCC represents 11 of these contractors and those ESCOs have been responsible for approximately 90% of the ESPCs within the Federal government. The "Super" contract, which was significantly updated over the previous contract, represents a total potential of \$80 billion in private sector financing available to the Federal government to implement ESPC projects. Today, almost \$78 billion remains available to Federal agencies. Even with the current focus on and increased pace of ESPCs, the current contract holder have the capacity to do more.

An Oak Ridge National Laboratory study looked at what might happen if each contractor really did invest \$5 B in the Federal space. The Study indicated that the result would be net energy savings (beyond paying back the contractor) of \$20 B. In addition, this would result in the Federal government acquiring \$30 billion of new energy equipment at no up-front cost.

Most Federal ESPC contracts range from 15 to 18 years and, by law, cannot exceed 25 years. This allows for the bundling of multiple energy conservation measures; that is, the ability to pull a comprehensive package of energy saving measures together that maximizes energy and cost savings opportunities for the customer. Individual energy conservation measures (ECMs) which can make up a bundled ESPC project may include lighting, building controls, HVAC, boiler or chiller plant improvements, building envelope modifications, water conservation, refrigeration, renewable energy systems, load shifting and others. The ESCO ensures that savings accrue and is reimbursed for their investment over this period.

Challenges and Opportunities

Despite the associated benefits of utilizing ESPC, including how they provide much needed facility improvements without the need for upfront capital, the mechanism has been underutilized by the Federal government.

The barriers to increased usage are difficult to quantify but revolve mostly around the fact that performance contracting is different from traditional procurement processes. To address this we need better education of contracting and legal personnel within agencies, in addition to strong government advocacy at the Congressional and Administration levels. Education is generally accomplished through the Federal Energy Management Program at DOE, a small program which leverages the billions of dollars in savings that are being delivered through private sector performance contracting with the federal sector. There is a need to make performance contracting “business as usual” within the Federal government.

In December 2011, the President released a Presidential Directive directing Federal agencies to enter into \$2 billion worth of performance-based contracting for energy savings over a two year period. The FPCC is encouraged by this Directive and we have seen the many Notices of Opportunity (NOOs) for new projects being issued by Federal agencies and subsequent selections of ESCOs to move forward.

More than \$550 million has been contracted to date and the FPCC anticipates an additional \$1 billion to be contracted by the conclusion of this year. Should this goal be met fully it would be quite a success, particularly in comparison to the approximately \$400 million per year that is generally contracted for ESPC by the Federal government. We believe the momentum established by this Directive should be continued with aggressive ESPC targets for next year, just as the federal agency targets for increasing overall energy efficiency have been extended each time they have been achieved during the past two decades.

Some agencies are more vested in ESPCs than others. Some personnel, both in the Federal government, Congress and elsewhere believe that agencies should not be financing energy-related infrastructure improvements but rather should fund them directly. During this time of fiscal constraint, however, that is impossible and the low interest rates and guarantee of savings make ESPCs an attractive alternative.

The Federal Performance Contracting Coalition recommends the following ESPC Contract Improvements:

- Standardize portions of the contract that will encourage faster and better contracting while retaining the flexibility to address individual facility needs. Standardize an expedited contracting procedure to reduce cycle time. Include in the contract a suggested process timeline along the lines of the one developed by the Federal Energy Management Program that calls for a 12 month cycle time to award.
- Expedite Selection process: All ESCOs under the Super Contracts are very well vetted and qualified to do work for the Federal government; therefore we encourage ESCO selections based on qualifications. In an ESPC, the overall project is not known until it is developed through the Investment Grade Audit and thus, price will be unavailable until final contract is negotiated between the selected ESCO and site personnel.

The FPCC recommends the following ESPC Process Improvements:

- Oversight is necessary: Continue the current level of White House oversight aimed at persuading agencies to move swiftly on project. This type of hands-on leadership has been successful in past endeavors and we suggest it be formalized. We strongly recommend a streamlined government review process for ESPCs, since delays generally occur during agency reviews. In addition, we suggest that for simple projects or follow on task orders, agencies could combine the Preliminary Assessment and the Investment Grade Audit, thereby expediting projects.

Drive more consistency among agencies: Despite the priority these contacts have been given by the President, some agencies are taking almost 12 months just to select a contractor to work with. We recommend all agencies use the one step selection process. We believe that policies where only a two-step selection process is utilized should be changed. In addition, the Administration should put in place a process by which legal and contracting personnel at all the federal agencies can vet their various interpretations of what is allowable under an ESPC. These legal and contracting interpretations seem to change with personnel and has a generally negative impact on projects moving forward. The FPCC recommends the following to ensure ESPC Persistence of Energy Savings:

- FEMP should continue their life of contract oversight established two years ago: At a time when the government has fewer dollars and energy management personnel, this oversight provides the confidence in the savings that are being accrued and that the government is getting a good deal. We suggest that DOE look at establishing evaluation criteria, including M&V criteria, that encourage comprehensive deep retrofits through a systems wide, lifecycle cost based analysis. This would encourage systems integration for optimal overall efficiency.

FPCC recommends the following congressional improvements to ESPCs:

- Policy levers such as codifying new energy efficiency goals for the federal government, setting goals for ESPCs moving forward and clarifying authority would all be beneficial but would trigger a "score" by the Congressional Budget Office. However, the last three Administrations have considered ESPCs to be score neutral and Congress and the CBO should follow their lead. We are grateful that Republicans and Democrats alike continue to question CBO about the score.

In summary, ESPCs are a private sector financing mechanism that allows government to increase their energy efficiency, decrease their energy costs without upfront appropriations and the savings are guaranteed by the contractor. These contracts have delivered more than \$7 billion in energy related savings to the Federal government alone and significant additional opportunities abound.

Chairman Broun, Chairwoman Lummis and members of this subcommittee, thank you for the opportunity to appear before you today. I stand ready to answer any questions you might have.

Example ESPC Projects at Facilities over which House Science Committee has Oversight

NASA:

Glenn Research Center, Cleveland, Ohio

In 1999, Glenn Research Center awarded to Ameresco Solutions (then awarded to Duke Solutions of which Ameresco, Inc. later acquired) a \$1.9M ESPC to provide Energy Conservation Measures (ECMs) for energy savings measures including lighting systems upgrades and lighting controls. These improvements were designed to reduce energy use by over 1,362,000 kWh/year and reduced peak demand by over 440 kW each month. Overall, these improvements supported the NASA site in meeting federal energy reduction goals. Annual savings for the contract term ranged between \$220k for the first year savings to \$268k in the final performance year. The contract payments concluded in calendar year 2009.

Goddard Space Flight Center, Greenbelt, Maryland

In 2010, Goddard Space Flight center awarded to Ameresco Solutions a \$6.8 million ESPC to prove the installation of four Energy Conservation Measures (ECMs) which included high-efficiency lighting retrofits; measures to improve building envelope through window, frame and door improvements; improvements to water efficiency through the installation of a waterside economizer; and to provide retro-commissioning of HVAC and associated controls systems. Retro-Commissioning is the commissioning of existing building systems to meet current building operating criteria. A waterside economizer utilizes the cooling towers to create chilled water in place of mechanical chillers whenever outside air conditions permit. Together the four ECMs reduced future O&M demands, reduce energy intensity and improved equipment performance. Construction and implementation of the ESPC was completed in 2012 and Ameresco provided the post-installation report to Goddard in June 2012. Less than a year into the first Measurement & Verification (M&V) reporting cycle by the contractor, Goddard elected to pay the entirety of the contract payments early.

NASA Wallops Flight Facility

Since 2009, Ameresco has been awarded two phases of work under an ESPC providing in excess of \$30M of energy savings to NASA Wallops Flight Facility. As part of this first phase of the facility-wide project, Ameresco replaced approximately 10,000 interior and exterior lighting fixtures with high-efficiency lighting and controls in 85 buildings. Additionally, Ameresco decentralized the 1940s vintage central steam plant with the installation of a propane vaporizer plant with three 60,000-gallon storage tanks, over five miles of new underground propane gas piping, and 63 propane-fired condensing boilers. Finally, Ameresco upgraded and expanded the existing energy management control system in 14 buildings to include equipment and ventilation air scheduling and interconnected the newly installed propane gas meters to the EMCS. In May 2012, NASA Wallops modified their existing ESPC with Ameresco to include an additional phase of work. Ameresco is currently installing over 500 tons of geothermal heat pumps at facilities at the Visitor's Center and the Wallops Island Launch Range. Implementation of these measures will provide a valuable renewable energy resource and will reduce extensive maintenance requirements for the existing equipment due to the corrosive coastal environment.

Ames Research Center, Moffett Federal Airfield, California

In August 2000 Johnson Controls, Inc. was awarded a \$5.1 million energy contract for the installation of energy efficient lighting systems and enhancements to its building management control system. The upgrades are providing Ames guaranteed savings of \$5.2 million in energy costs. Ames awarded a second energy contract to Johnson Controls in March 2002 for \$4.7 million to install efficient lighting in more buildings which is providing Ames with an additional \$4.7 million in guaranteed savings. On top of the energy savings, reduced repair and replacements of control System components NASA will avoid costly unplanned equipment expenses and will reduce trouble calls which will free up staff to perform other tasks.

Federal Aviation Administration:

Northern California Terminal Radar Approach Control, Mather, California

On May 24, 2012, NORESKO, LLC was awarded an ESPC that will leverage almost \$1.9 million in private sector investments for energy efficiency and water conservation measures at the Northern California facility. This project includes a power purchase agreement (PPA) that will help to finance an onsite, one-megawatt photovoltaic (PV) solar energy system, bringing the total contract value to \$9 million. The project also includes lighting upgrades, water conservation upgrades, and an energy management control system. The combination of renewable energy and energy efficiency measures will save the facility 7.7 billion Btu per year or enough energy to power more than 80 homes. In dollar terms, the energy efficiency measures will save the FAA at least \$334,000 on energy and water costs in the first year and \$9 million over the life of the 20-year contract.

Department of Energy:

Oak Ridge National Laboratory, Oak Ridge, Tennessee

Johnson Controls will help the U.S. Department of Energy save more than \$264 million and reduce fossil fuel use by 72 percent at Oak Ridge National Laboratory under a \$94 million ESPC investment which includes the installation of a new biomass steam plant and seven additional energy conservation measures. The steam plant, dedicated in July 2012, uses wood chips collected within 50 miles of Oak Ridge, TN, to supply 60,000 pounds of steam every hour for the campus. In addition to the steam plant, seven other energy conservation measures were implemented, including a mechanical equipment upgrade, steam system upgrades, digital metering, lighting upgrade, building management system improvements, domestic water conservation and a plant air system upgrade.

Jennifer A. Schafer
Executive Director
Federal Performance Contracting Coalition

Jennifer Schafer is the President of Cascade Associates, a governmental affairs consulting firm located in Washington, DC. Cascade Associates primarily represents the energy efficiency community, companies and organizations. The firm advocates policies that advance the position of energy efficiency and clean energy technology in an environmentally-friendly manner, and works to ensure adequate research, development and demonstration funding for such technologies.

Ms. Schafer has more than twenty years of public policy experience in energy and environmental issues. She began her work in governmental affairs for private clients in 1992 and has worked extensively with several Congressional Committees and Offices. Ms. Schafer began her Washington tenure at the office of Senator Ted Stevens of Alaska, later serving as a consultant to the U.S. Department of Energy.

In her capacity as President of Cascade Associates, Ms. Schafer is serving her 17th year as the Executive Director of the Federal Performance Contracting Coalition (FPCC) representing companies involved in Energy Savings Performance Contracting with the Federal government. Among other things, the FPCC worked tirelessly to ensure reauthorization of the ESPC program was included in both the FY2005 Defense Authorization bill and the Energy Policy Act of 2005. She additionally participated in the drafting and passage of numerous relevant sections of the Energy Independence and Security Act of 2007 and led efforts to correctly apply enhanced competition requirement to ESPCs. The group continues to work with the Federal Government to improve the program.

Chairman BROUN. Thank you, Ms. Schafer.
I now recognize our final witness, Mr. Ron King.

**TESTIMONY OF MR. RON KING,
PRESIDENT ADVISOR,
NATIONAL INSULATION ASSOCIATION**

Mr. KING. Chairman Broun, Chairwoman Lummis, and Ranking Members Maffei and Swalwell and Members of the Oversight and Energy Committee, thank you for the opportunity to participate in this hearing and to discuss the importance of Energy Savings Performance Contracts.

My name is Ron King. I am the President Advisor and a past president of the National Insulation Association. Our industry, the vast majority of which are small businesses, represent over 120,000 employees across the United States and have an extensive track record of providing energy efficiency and emission reduction initiatives in manufacturing facilities and private and government buildings across the country.

I sit here today as a supporter of energy performance contracts being employed by Federal agencies and to express to you the value that mechanical insulation can provide to achieving energy efficiency and financial return objectives.

Thermal insulation for piping, equipment, and other mechanical devices, known as mechanical insulation, is a proven energy efficiency and emission-reduction technology that can create tens of thousands of jobs. It is also important to note that 95 percent of the products utilized in this industry are manufactured in the United States.

Unfortunately, the benefits of mechanical insulation are often overlooked by all pipeline stakeholders in new construction, in retrofit, and in maintenance opportunities. The benefits of this technology are further reduced because minimum requirements in new construction and retrofit applications are seldom exceeded and maintenance opportunities are completed in a non-timely and proper manner.

The National Insulation Association estimates that implementing a comprehensive mechanical insulation maintenance program in the commercial and industrial market segments would lead to annual energy savings of 1.2 quads of primary energy or savings of roughly \$3.8 billion per year with a return of investments ranging from 25 percent to over 100 percent while reducing CO₂ emissions by 105 million metric tons.

Even with a relatively slow implementation rate, these numbers on a compounded basis over 10- or 20-year period would yield tremendous savings and this does not include the additional savings of going beyond minimum standards in new construction and retrofit applications.

As you are aware, buildings are responsible for 40 percent of the United States' energy demand and greenhouse gas emissions, which makes efficiency gains in this area crucial if we are to markedly reduce America's energy consumption. Energy performance contracts can be and usually are comprehensive and employ a wide array of cost-effective measures to achieve energy savings. These

measures often include the high-profile energy efficiency measures such as lighting, heating and air-conditioning, efficient motors, centralized energy management systems. Mechanical insulation and potentially other less-known and proven energy efficiency initiatives they or may not be included.

Unfortunately, we have found that mechanical insulation is easily and often overlooked. Mechanical insulation typically yields a return on investment ranging from a few months to less than seven years. As an example, a mechanical insulation energy appraisal was conducted on low-pressure steam and domestic hot water systems in a variety of State of Montana facilities. Estimated energy savings represent roughly eight percent of the total natural gas consumption with an annualized rate of return of 24 percent.

The use of energy performance contracts by Federal agencies is an excellent means to which to achieve high-performance building objectives. These types of contracts have led the effort to verify results rather than imperially rely on estimates. Prescriptive measures like mechanical insulation are well-suited, add value, and should be an integral part of energy performance contracts and the resulting holistic savings verification process.

As another example, one of our Members completed a mechanical insulation energy appraisal of four different operating systems at the National Institute of Health in Bethesda, Maryland. They determined by insulating areas not previously insulated and where insulation was missing, the potential of annual savings of \$400,000 with a simple payback of 3.3 years and over 6 million pounds of CO₂ emissions reduction was attainable.

Inclusive or independent of energy performance contracts, the return on investment of implementing and maintaining a proper and timely insulation maintenance program is compelling and easy to implement without extensive engineering support, and in many cases, any disruption of the workplace.

We are committed to working with Congress, the Department of Energy and key stakeholder groups on energy performance contracts that will lead to greater energy efficiency nationwide, including working with the Department of Energy and other agencies to bring together a coalition to develop, implement, and provide mechanical insulation research, education, and training programs. Mechanical insulation is a simple, proven, prescriptive technology that can contribute to successful execution of Energy Savings Performance Contracts.

Thank you for the opportunity to submit testimony in support of a program that is critical to job creation, economic growth, energy savings, and emissions reduction. I look forward to answering any questions you may have. Thank you.

[The prepared statement of Mr. King follows:]

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Testimony Submitted
By

The National Insulation Association



Submitted To:

The U.S. House of Representatives
Committee on Science, Space, and Technology
Subcommittees on Oversight and Energy

**"Green Buildings—An Evaluation of
Energy Savings Performance Contracts"**

June 27, 2013
Rayburn House Office Building
Room 2318

Ronald (Ron) L. King
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Chairman Broun, Chairwoman Lummis and Ranking Members Maffei and Swalwell and Members of the Oversight and Energy Subcommittees, thank you for the opportunity to participate in today's hearing on the importance of Energy Service Performance Contracts (ESPC). My name is Ron King and I am the President Advisor and a Past President and of the National Insulation Association (NIA), the national trade association for the mechanical insulation industry. Our members, the vast majority of which are small businesses and represent over 120,000 employees, have over 800 corporate locations across the United States, and have more than a century-long track record of providing large and small scale long-term energy efficiency, cost savings, safety benefits, and emissions reductions at manufacturing facilities, power plants, refineries, hospitals, universities, and government buildings across the country.

I sit here today as a supporter of the Energy Service Performance Contracts being employed by federal agencies, and to express to you the value that mechanical insulation can provide to achieving energy efficiency and financial return objectives.

Thermal Insulation for piping, equipment, and other mechanical devices, known as mechanical insulation, is a proven energy efficiency and emission reduction technology that will improve personnel safety and reduce costs while also creating tens of thousands of jobs. On this point, it is important to highlight that 95% of the products utilized in the mechanical insulation industry are made in the United States.

Unfortunately, the benefits of mechanical insulation are often overlooked by all pipeline stakeholders—mechanical engineers, facility owners and managers, financial officers, etc.—during new construction, retrofitting, and maintenance opportunities. The benefits of this technology are further reduced because minimum requirements in new construction or retrofit applications are seldom exceeded and maintenance is not accomplished in a timely and proper manner.

The National Insulation Association estimates that implementing a comprehensive mechanical insulation maintenance program in the commercial and industrial market segments would lead to annual:

- energy savings of 1.22 quads of primary energy or \$3.8 billion
- return on investment range from 25%–100%
- CO₂ reductions of 105 million metric tons (MMTCO₂)

Even with a relatively slow implementation rate, the numbers on a compounded basis over 10 or 20 years would yield tremendous savings—and this does not include the additional savings of going beyond minimum standards in new construction and or retrofit projects.

What do these numbers mean?

Energy savings of 1.22 quads per year equates to:

- 115 billion kWh of electricity, enough to power 10.8 million households (9.4% of U.S. households) for a year. This is the equivalent of annual output from 26,300 wind turbines
- 207 million barrels of oil, enough to fill about 103 supertankers
- 1,220,000,000,000,000 Btus (1.22 quadrillion Btus) of primary energy—about 1.2% of total U.S. annual consumption or 4.5 days of energy consumption for the entire United States

105 MMTCO₂ of CO₂ reductions per year equates to:

- adding 4.6 billion mature trees (10.6 million acres of new forest, an area the size of Maryland and Massachusetts combined)
- removing 19.2 million cars from the roads, about 7.6% of 254 million cars registered in the United States
- installing 1.8 billion compact florescent light bulbs, equivalent to 6 light bulbs for every man, woman, and child in the United States

Mechanical insulation maintenance is also an excellent example of American job opportunities that can be implemented within weeks or months instead of years. It can put tens of thousands of people to work immediately and retain existing jobs while contributing to the competitiveness of U.S. manufacturing, increasing the profitability of private and public businesses and facilities, reducing our country's dependence on foreign energy sources, and improving our environment. Equally important, the majority of insulation contractors who install and maintain mechanical insulation systems represent independent small businesses in every state. Mechanical insulation is a proven technology. It does not require research and development or engineering or design processes. Materials and skilled craft personnel are available now and are ready to be deployed. As I stated previously, 95% of the materials used are made in the United States with the balance primarily manufactured in Canada.

The total number of jobs created by implementing a comprehensive mechanical insulation maintenance program extends well beyond the direct and indirect jobs that are created. The employed workers will spend their earnings on a variety of products and services, which stimulates growth in other sectors. Furthermore, businesses will have additional dollars to spend on capital, expansion, or other projects as a result of reduced energy cost. The cycle of job creation is ongoing.

The American Council for an Energy-Efficient Economy recently released a white paper, "Energy Efficiency Job Creation: Real World Experiences" by Casey J. Bell (October 2012). It indicated that, on average, every \$1 million spent on energy efficiency in the construction sector supports

approximately 20 jobs. While we think that number is potentially low for mechanical insulation maintenance opportunities because of the magnitude of the return on investment, that estimate extrapolated to the potential of mechanical insulation maintenance would equate to roughly 153,000 total jobs—more than double the direct and indirect jobs.

In a single day, one worker can accomplish the following tasks, leading to significant savings:

- Insulating 45 linear feet of 8-in. high-pressure steam line equates to about \$13,600 per year, equivalent to removing 13 cars from the highways. Assuming the facility exists for 20 more years, the total savings from that one workday would be \$272,000.
- Insulating 70 linear feet of 3-in. low pressure steam line equates to over \$4,000 per year in energy savings, reducing CO₂ emissions as much as removing 3.7 cars from the highways. Assuming the facility exists for 20 more years, the total savings from that one workday would be \$80,000.

As you are well aware, buildings are responsible for 40% of U.S. energy demand and 40% of all greenhouse gas emissions, making efficiency gains in this area crucial if we are to markedly reduce America's energy consumption. The industrial sector is similar in energy efficiency opportunities. At the residential level, insulation is well publicized for its efficiency benefits. However, the same cannot be said in the commercial and industrial sectors, which together consume 2½ times more energy than homes, according to the Energy Information Administration. Mechanical insulation has the potential to slash the energy demand for the building and industrial sector.

By definition, an Energy Service Performance Contract is one that employs an Energy Service Company (ESCO), which is a business that develops, installs, and arranges financing for projects designed to improve the energy efficiency and maintenance costs for facilities over a typical 7 to 20 year time period.

“ESCOs generally act as project developers for a wide range of tasks and assume the technical and performance risk associated with the project. Typically, they offer the following services:

- develop, design, and arrange financing for energy efficiency projects;
- install and maintain the energy efficient equipment involved;
- measure, monitor, and verify the project's energy savings;
- assume the risk that the project will save the amount of energy guaranteed

These services are bundled into the project's cost and are repaid through the dollar savings generated”¹

ESCO projects can be, and usually are, comprehensive and employ a wide array of cost-effective measures to achieve energy savings. These measures often include the high profile energy efficiency measures such as high efficiency lighting, high efficiency heating and air conditioning, efficient motors and variable speed drives, and centralized energy management systems. Mechanical insulation and potentially other less known energy efficiency initiatives may or may

not be included. Unfortunately, we have found that mechanical insulation is easily and often overlooked.

Mechanical insulation typically yields a return on investment ranging from a few months to less than 7 years. As an example: a mechanical insulation energy appraisal was conducted on a variety of State of Montana facilities located in and around Helena, Montana. The appraisal was a part of the Montana Mechanical Insulation Assessment Pilot Program (Pilot Program). The objective of the Pilot Program was to determine the energy, cost, and emission reduction opportunities available via the repair, replacement, and/or maintenance of mechanical insulation systems in Montana's state facilities. The assessment addressed mechanical rooms in 25 facilities pre-selected by State of Montana personnel based on the potential for energy savings.

Each of the facilities chosen for analysis had at least a few items that needed insulation. Overall, approximately 3,500 items were identified in the 56 mechanical rooms visited. Low pressure steam and domestic hot water systems were the primary systems included in the analysis. Estimated energy savings were approximately 6 billion BTUs per year. The resulting overall payback period was 4.1 years, with an annualized rate of return of 24%. These projected savings are primarily savings in natural gas usage and represent roughly 8% of the total natural gas consumption of the facilities analyzed. Associated reductions in CO₂ emissions are estimated at 300 metric tonnes per year. On a square foot of gross building area basis, the energy cost savings averaged \$0.043/sf.

"From the materials produced to construct buildings and the energy used to operate them, buildings consume vast amounts of resources and are responsible for nearly half of all greenhouse gas emissions. High-performance buildings, which address human, environmental, economic, and total societal impact, are the result of the application of the highest level design, construction, operation, and maintenance principles—a paradigm change for the built environment.

- Our homes, offices, schools, and other buildings consume 40% of the primary energy and 70% of the electricity in the U.S. annually.
- Buildings consume about 12% of the potable water in this country.
- The construction of buildings and their related infrastructure consume approximately 60% of all raw materials used in the U.S. economy.
- Buildings account for 39% of U.S. CO₂ emissions a year. This approximately equals the combined carbon emissions of Japan, France, and the United Kingdom.
- Americans spend about 90% of their time indoors.
- Poor indoor environmental quality is detrimental to the health of all Americans, especially our children and elderly."²

The use of Energy Service Performance Contracts by Federal agencies is an excellent means by which to achieve federal high performance building and energy efficiency objectives. These types of contracts have led the effort to verify—rather than estimate—energy savings. Holistic

metering of energy usage and the resulting savings is the key component for payment of the investment.

In addition, many Energy Service Performance Contracts also include estimates of ongoing maintenance cost, the need for any specialized employee training, identification of hazard materials, and a host of similar services.

Prescriptive measures like mechanical insulation are well suited to be an integral part of energy service contracts and the resulting holistic savings verification. They add value in achieving the projected energy savings, return on investment expectations, emission reduction, and achieving other high-performance objectives.

As an example, one of our members completed a mechanical insulation energy assessment of 4 different operating systems at the National Institute of Health in Bethesda, MD and determined that by insulating areas not previously insulated and where insulation was missing, the potential annual savings of \$400,000 with a simple payback period of 3.3 years and over 6 million pounds of CO₂ emission reduction was obtainable.

Independent of an Energy Service Performance Contract, the return on investment of implementing and maintaining a proper and timely mechanical insulation maintenance program is compelling and easy to implement without extensive engineering support or in many cases, any disruption of the work place.

Mechanical insulation opportunities can be easily identified, with potential energy savings and emissions reduction determined with proven DOE-utilized software technology. For facility owners and operators, the savings are swift and sustainable, and the return on investment from mechanical insulation in building applications is typically less than 4 years (and sometimes as little as 6 months).

NIA and its members are committed to working with Congress, the Department of Energy and other federal agencies, and key stakeholder groups on Energy Service Performance Contracts and other initiatives that will lead to greater energy efficiency nationwide.

We have formed alliances with engineering and other industry trade organizations and have offered to work with the Department of Energy and other agencies to bring together a coalition to help develop, implement, and provide mechanical insulation educational awareness programs established and funded in a partnership environment by industry and Congress.

We have included below a list of available resources that will provide additional information on the many benefits of mechanical insulation. All of these resources can be found directly or via links on the NIA website, www.insulation.org.

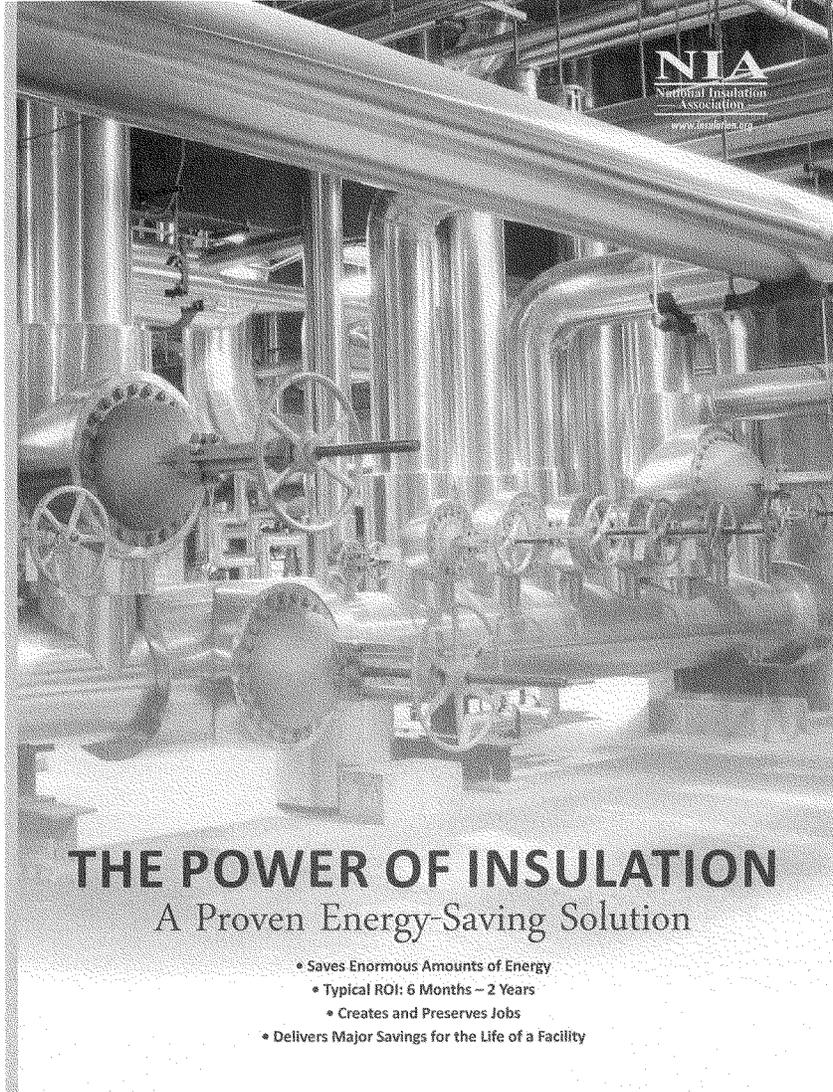
- National Insulation Association, www.insulation.org

- National Institute of Building Sciences, Mechanical Insulation Design Guide (MIDG), www.wbdg.org/midg
- Midwest Insulation Contractors Association, National Commercial & Industrial Insulation Standards Manual, www.micainsulation.org
- E-Learning Modules—DOE National Training & Education Resource, www.nterlearning.org,
- Simple Energy Calculators can be found at the Department of Energy's Industrial Technologies Program's Software Tools website, www1.eere.energy.gov/industry/bestpractices/software.html

Thank you for the opportunity to submit testimony in support of a program that is critical to job creation, economic growth, energy savings, and emissions reductions.

¹ National Association of Energy Service Companies (NAESCO), website ESCO Market Analysis, What is an ESCO?, www.naesco.org/resources/esco.htm

² High Performance Building Congressional Caucus Coalition website, www.hpbccc.org

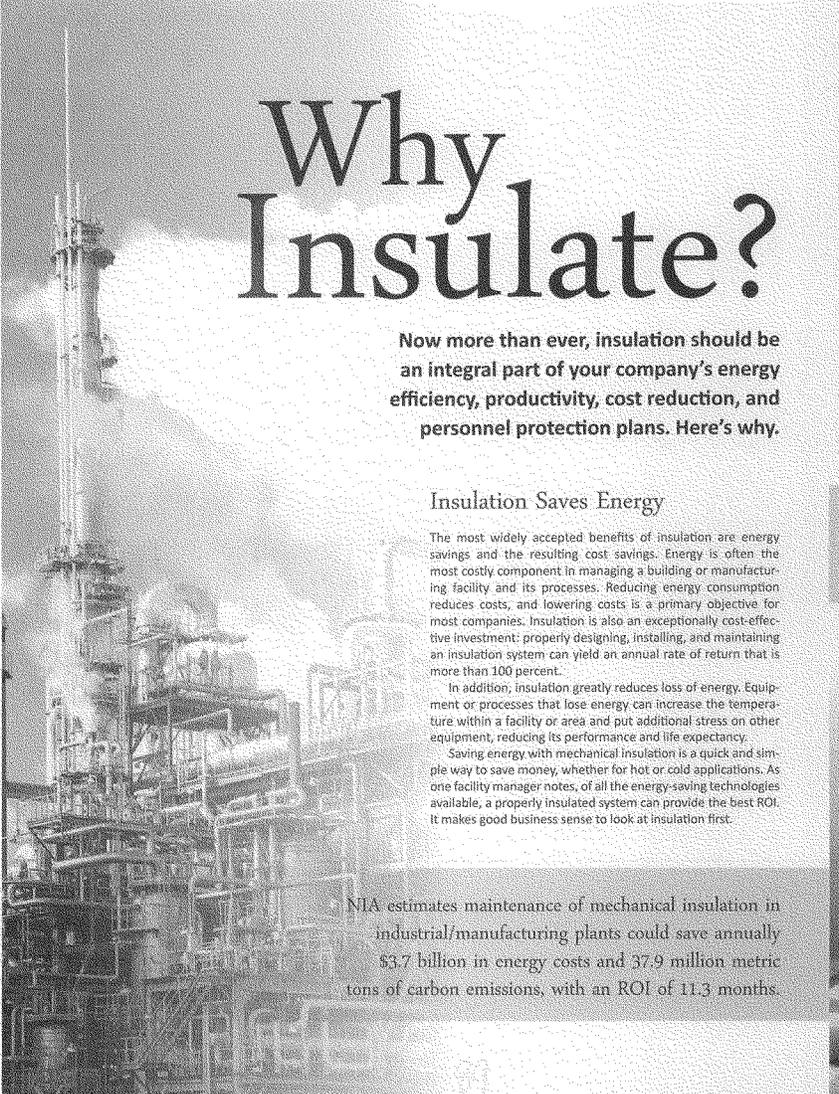


NIA
National Insulation
Association
www.insulation.org

THE POWER OF INSULATION

A Proven Energy-Saving Solution

- Saves Enormous Amounts of Energy
- Typical ROI: 6 Months – 2 Years
- Creates and Preserves Jobs
- Delivers Major Savings for the Life of a Facility



Why Insulate?

Now more than ever, insulation should be an integral part of your company's energy efficiency, productivity, cost reduction, and personnel protection plans. Here's why.

Insulation Saves Energy

The most widely accepted benefits of insulation are energy savings and the resulting cost savings. Energy is often the most costly component in managing a building or manufacturing facility and its processes. Reducing energy consumption reduces costs, and lowering costs is a primary objective for most companies. Insulation is also an exceptionally cost-effective investment: properly designing, installing, and maintaining an insulation system can yield an annual rate of return that is more than 100 percent.

In addition, insulation greatly reduces loss of energy. Equipment or processes that lose energy can increase the temperature within a facility or area and put additional stress on other equipment, reducing its performance and life expectancy.

Saving energy with mechanical insulation is a quick and simple way to save money, whether for hot or cold applications. As one facility manager notes, of all the energy-saving technologies available, a properly insulated system can provide the best ROI. It makes good business sense to look at insulation first.

NIA estimates maintenance of mechanical insulation in industrial/manufacturing plants could save annually \$3.7 billion in energy costs and 37.9 million metric tons of carbon emissions, with an ROI of 11.3 months.

Insulation Reduces Emissions

A reduction in energy consumption means less fossil fuel is burned to produce energy. The result is a reduction in the amount of greenhouse gases emitted into the atmosphere. These gases have been directly linked to global warming and pollution. Reducing energy and emissions is a great win-win scenario.

Insulation Offers Amazing Returns and Reduced Life-Cycle Cost

Insulation can provide unrivaled ROI and improve life-cycle cost. Quantifying the rate of return is easy; software and energy assessment procedures are proven and readily available, as are certified insulation energy appraisers. It has been estimated that a building's initial construction cost represents only 20 to 30 percent of the building's entire cost over its 30- to 40-year life. For the schools in a recent study, it is estimated that mechanical insulation saves on average 20 percent of the total usage. Consider the life-cycle cost of the total project rather than just the initial capital cost.

For hospitals, energy savings from mechanical insulation average 78% of the total site energy usage.

"[In one plant] Dow saves \$800,000 per year through steam systems insulation improvements."

-Frederick "Fred" P. Fendt, P.E., Energy Efficiency and Conservation Team Leader, Dow Advanced Materials, The Dow Chemical Company

Insulation Is Critical to Sustainable Design

What is sustainability? According to the National Institute of Building Sciences' Whole Building Design Guide, sustainability or "sustainable design" supports an increased commitment to environmental stewardship and conservation, and results in an optimal balance of cost, environmental, societal, and human benefits while meeting the mission and function of the intended facility or infrastructure. Sustainability should provide a bottom line supporting: (1) economic growth, (2) environmental stewardship, and (3) social progress.

Mechanical insulation is a sustainable design technology whether used with equipment or on its own. Whether you are pursuing certification or just want to start thinking "green," insulation systems—both individually or in combination with other building or equipment design options—can be vital to accomplishing your objectives.

Environmental stewardship is no longer just an option. The potential of green buildings being mandated in many industry segments is real. The proper design, installation, and maintenance of mechanical insulation should be a major consideration in all sustainable design initiatives.

Insulation Protects Workers

When was the last time you heard about mechanical insulation at a safety meeting? Protecting workers from contact with hot or cold surfaces should be a focus of any safety program. Insulation systems can be a vital component in applications related to life safety, such as commercial kitchen ducts, return air plenums, protection of power and communication conduit trays, and similar applications. Far beyond the impact on a company's bottom line is insulation's direct impact on employees' well-being.

Insulation also plays a role in fire safety through firestopping, which seals wall penetrations and prevents fire, gases, and smoke from migrating from one room to another.



Insulation Provides a Healthier Work Environment

Study after study has proven that improved indoor air quality increases occupants' productivity and efficiency. Noise control—whether in an office or a manufacturing facility—can increase productivity. Improved air quality and sound attenuation both benefit an occupant's health, productivity, and overall job satisfaction. Insulation can play a major role in accomplishing these goals.

Insulation Improves Process Control and Productivity

Most processes involve fluid, air, or gas leaving point A at one temperature or pressure and arriving at point B at another. The initial design incorporates a series of engineering assumptions. If the insulation system in the initial design is not installed and maintained, process control and productivity will suffer. A properly designed, installed, and maintained insulation system can provide the expected results or even improve upon them.

"We were pleasantly surprised by the results of our mechanical insulation energy assessment pilot program. We found that small items added up to large savings and that mechanical insulation provides opportunities for quick projects with good energy savings and return on investment. We will continue to assess mechanical insulation savings opportunities in more buildings."

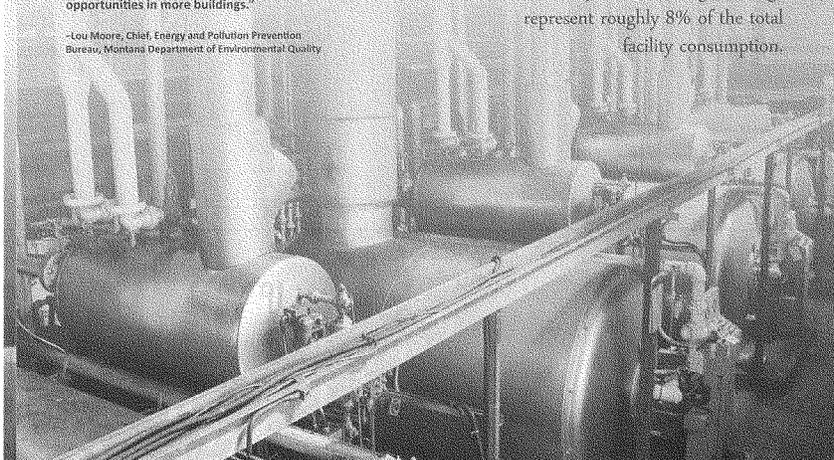
-Lou Moore, Chief, Energy and Pollution Prevention Bureau, Montana Department of Environmental Quality

Insulation Controls Condensation

Insulation systems are needed to maintain a process system's surface temperature above the dew-point temperature of the ambient air. Condensation is a real-world problem that if not corrected can lead to other serious problems. If designed, installed, and maintained properly, insulation can minimize condensation damage, including damage to surrounding surfaces and equipment; mold growth, which affects indoor air quality; and corrosion under insulation (CUI).

CUI is a major safety and cost concern. Insulation that is correctly designed, installed, and maintained in a timely and effective manner can minimize or even eliminate CUI. "Pay now or pay later" applies to insulation and CUI. By not properly designing, installing, and maintaining an insulation system, you could be creating bigger, more expensive problems.

An audit of 56 mechanical rooms identified approximately 3,500 under- or un-insulated items resulting in an estimated energy savings of approximately 6 billion Btu per year. The resulting overall payback period was 4.1 years, with an annualized rate of return of 24%. Projected natural gas savings represent roughly 8% of the total facility consumption.





The Power of Insulation

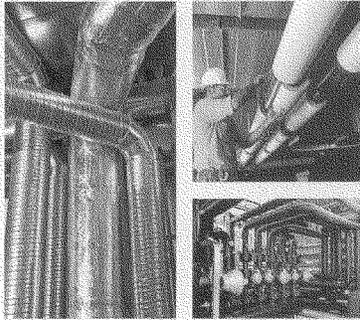
Insulation is a proven means for saving energy, reducing greenhouse gas emissions, increasing process productivity, providing a safer and more productive work environment, controlling condensation (which can lead to mold growth), supporting sustainable design technology, and a host of other benefits. It does all of this while providing an ROI that is seldom rivaled. So why is it so often overlooked?

Many people are more attracted to energy conservation solutions they think are more exciting or offer what they see as more quantifiable results. But a properly designed, installed, and maintained insulation system can provide short- and long-term benefits that exceed expectations, and the results are proven and quantifiable.



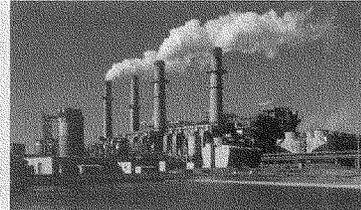
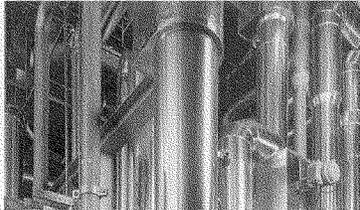
Insulation— An Engineered Approach

An insulation system is a technology—one that needs to be engineered into a facility and maintained throughout its life. It has been estimated that between 10 and 30 percent of all installed insulation is now missing or damaged. Not replacing or maintaining an insulation system in a timely and correct manner means missing out on the full benefits of insulation. In many cases, significant issues develop, such as excessive energy loss, CUI, mold growth, increased cost of operations, and reduced process productivity.



Results Are Easy to Calculate

Insulation's ROI is no mystery. Software and assessment programs can calculate the amount of energy being saved with existing insulation systems or lost if the insulation is missing or damaged. They can also determine the potential dollar savings that can be obtained by upgrading an insulation system or replacing what is missing. These programs calculate the greenhouse gas emissions that could be prevented; insulation thicknesses required for condensation control, personnel protection, and surface temperatures; and the estimated ROI. The benefits of insulation are easily and quickly quantifiable; see the list of Resources on the back panel for tools.



Resources

Insulation.org

A world of information devoted to the mechanical insulation industry is available at www.insulation.org. The site boasts:

- A searchable database of technical articles
- A database of NIA's Certified Insulation Energy Appraisers, searchable by company name, last name, and location
- A Guide to Insulation Product Specifications
- The NIA Membership Directory & Resource Guide, searchable by member type, specialty, products, and location
- A bookstore offering books, DVDs, and brochures
- A free subscription to the NIA E-News Bulletin, which provides updates on association and industry news

Bookmark www.insulation.org and check it frequently for the latest NIA and industry news.

E-Learning Modules

The Mechanical Insulation Education and Awareness Campaign has produced a series of free E-Learning Modules. These interactive modules put valuable insulation information at your fingertips, from basics such as insulation terminology, a better understanding of energy, and the benefits of insulation to more complex topics such as design objectives and installation and maintenance. Whether you are new to the industry or a veteran, you will find these modules valuable tools. Learn more at www.insulation.org.

Simple Calculators

The Simple Calculators in the Mechanical Insulation Design Guide provide assistance for common calculations used in the design and analysis of mechanical insulation systems. These calculators are useful for both the beginner and experienced professionals. Calculators include: Energy Loss, Emission Reduction, Surface Temperature, and Annual Return for Equipment and Horizontal Piping; Financial Returns/Considerations; Personnel Protection for Horizontal Piping; and Temperature Drop for Air in an Insulated Duct or Fluid in an Insulated Pipe. Visit www.wbdg.org/design/midg_calculators.php for the complete list.

Mobile Apps

The Mechanical Insulation Financial Calculator app, based on the Financial Returns/Considerations Simple Calculator in the Mechanical Insulation Design Guide, helps quickly determine the financial returns related to investments in mechanical insulation. It can be used for an overall project or a small investment such as insulating a valve or replacing a section of insulation.

This app is available for Android phone users in the Android Market—just search for “mechanical insulation.” Use this free tool to find out how quickly mechanical insulation can pay for itself in a building or facility and discover how much energy, money, and greenhouse gas emissions can be saved.

More apps for other smartphone operating systems will be available in the future. Check with NIA for availability.

MIDG

Whether you are looking for basic insulation information or need to design a complex insulation system, the Mechanical Insulation Design Guide (MIDG) is the best resource. Designed to assist the novice or the knowledgeable user alike in the design, selection, specification, installation, and maintenance of mechanical insulation, the MIDG is continually updated. Visit www.wbdg.org/midg for this free, comprehensive resource.

MTL Product Catalog

The MTL Product Catalog is the only online library of technical literature for the insulation industry. This one-stop shop for product information is the easiest way to find insulation product information. Visit it at www.insulation.org/mtl.

InsulationOutlook.com

The *Insulation Outlook* website is devoted to the needs of the magazine's readership of mechanical engineers, plant managers, specifiers, and other technical end-user professionals. *Insulation Outlook* produces high-quality information to educate its audience of more than 11,500 subscribers. The website features bonus materials, a searchable articles archive, a handy subscription-management area, additional information about advertisers, information for prospective writers, and more.

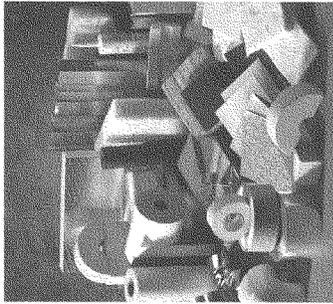
3E Plus® Software

The 3E Plus® Insulation Thickness Computer Program is a tool for selecting the appropriate insulation thickness needed to reduce heat loss or gain, maintain process-control temperature, maintain a safe surface temperature for personnel protection, and control condensation. The program can also calculate the quantity of greenhouse gas emissions (CO₂, NO_x, and others) associated with each thickness. The program includes thermal conductivity curves from current ASTM Material Specifications for most insulation materials. Users have the option of inputting thermal data from other sources if desired. Visit www.pipeinsulation.org to download the free software, or send an e-mail to the North American Insulation Manufacturers Association at 3Eplus@naima.org.

About the National Insulation Association (NIA)

NIA is a not-for-profit trade association representing both the merit (open shop) and union contractors, distributors, laminators, fabricators, and manufacturers that provide thermal insulation, insulation accessories, and components to the commercial, mechanical, and industrial markets throughout the nation. Since 1953, the northern Virginia-based association has been the voice of the insulation industry and is dedicated to keeping the commercial and industrial insulation industry up to date on the latest industry trends and technologies. For more information about NIA, visit www.insulation.org.

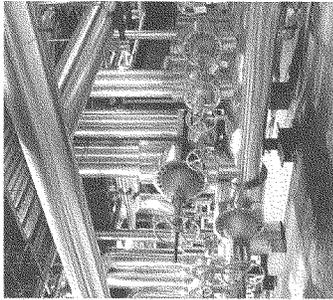
National Insulation Association | 12100 Sunset Hills Rd., Suite 330, Reston, VA 20190 | phone 703-464-6422 | fax 703-464-5896 | niainfo@insulation.org



Mechanical
insulation products



Valve missing
insulation



Finished insulation system —
manufacturing facility



Heating, ventilation, and
air conditioning (HVAC)
applications

Typical Examples of Mechanical Insulation



*Biography***Ronald (Ron) L. King*****National Insulation Association (NIA) President Advisor, Past President, and Consultant***

Ron's career has provided him one the most extensive and diverse backgrounds in the mechanical insulation industry. He pursued his Bachelor of Arts degree from Strayer University. During his 50-year career in the commercial and industrial insulation sector, he has owned and operated a small contracting business, has served as a Vice President and General Manager of a large national specialty contractor, as President of national accessory manufacturer, and retired as Chairman, President, and Chief Executive Officer of Specialty Products and Insulation, Co. He is a past president of NIA, the Southwest Insulation Contractors Association, and the World Insulation and Acoustic Congress Organization. Ron has been honored with a President's Award on three different occasions from two insulation associations.



Ron currently serves as a full time President Advisor and consultant to the NIA on a variety of educational, outreach, and governmental initiatives, including coordinating many allied association alliance-partnership activities. He is Chairman of the National Institute of Building Sciences' National Mechanical Insulation Committee, Immediate Past Chairman of the Consultative Council, and is NIA's liaison to the Federation of European Insulation Societies (FESI), which represents the European mechanical insulation market. In addition, Ron serves as a Director of Eastern Insurance Holdings, Inc., and has held that position since early 2000; he also serves on several private company boards and community organizations. He is frequent author and an accomplished speaker who specializes in industry opportunities and the power of insulation as well as the challenges in the insulation industry.

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Chairman BROUN. Thank you, Mr. King. I now want to publicly thank you for your very timely and efficient response to the request from this Committee for information, and I thank you so much. You are an example that every person who testifies before any Committee in the Congress should be utilized as an example of response for somebody whose testimony is requested. So thank you so much.

I thank all the witnesses for their testimony. Reminding Members that Committee rules limit questioning to five minutes, the Chair at this time will start the first round of questions, and I recognize myself for five minutes.

Dr. Hogan, given that the credibility of ESPCs rest on strong measurement and verification of energy savings, who is currently responsible for monitoring and verifying energy savings?

Dr. HOGAN. So each performance contract in the Federal Government has a contracting officer that would reside in the agency that is putting that contract in place. So that is where the responsibility does reside. What our Federal Energy Management Program does is provide guidance on how to do that MTV well starting with sort of what the MTV plan should be at the start of the contract that gets written into the upfront contract as well as how to effectively do the ongoing monitoring. So we provide assistance, but it is the contracting officer in each agency who would be ultimately responsible.

Chairman BROUN. During your testimony, you indicated that you are monitoring these things, and during my opening statement, I indicated that five couldn't even be scored and numerous of them were in the red and yellow as far as their energy scoring. This is intolerable as far as I am concerned.

Following up on that response, I would also like to ask Dr. Whitlow and Ms. Schafer to answer this: considering that the estimated savings directly relates to the financial payback of the ESCOs, would you support regular, mandatory, third-party measurement and verification of all projects over a certain threshold? Dr. Whitlow?

Dr. WHITLOW. Well, when we implement our projects, we have our measurement verification, which we then use to verify saving. If third parties were to come in and provide some additional oversight of our savings, I think that would only verify the savings that we report. So there would be no objections to third party oversight.

Chairman BROUN. So that is a yes?

Dr. WHITLOW. That would be a yes.

Chairman BROUN. Yes. Okay. Ms. Schafer?

Ms. SCHAFER. You know, my organization hasn't discussed that as a group but—so I don't have really an official position. I would think that, you know, the guaranteed savings, the savings, they guarantee the savings. So if somebody is watching over their shoulder, I am sure that is great. The agencies do that already. DOE does that.

DOE has something called life-of-contract oversight, which is really nice because every year they come in as a third party and they look at what the agency is getting and then they can say, oh, well, you know, agency actually didn't ask for—or you didn't re-

spond to this MTV or this piece doesn't look right. How do we deal that? So some of that is being taken care of.

One thing is if you have a third-party come in, if it is a government person who is a third party or a nongovernment person who is a third-party, it is not part of the contract. So again, we are going to have to find funding for that, which is an ongoing problem with getting more efficient in the Federal Government right now.

Chairman BROUN. I am trying to figure out if your answer is yes, no, or maybe.

Ms. SCHAFER. You know, I don't have an official position.

Chairman BROUN. Okay.

Ms. SCHAFER. I can get one because we haven't discussed it, but it seems to me as though we have that going on both with the agency and with the Department of Energy doing that, the labs actually doing that, on a yearly basis to verify that the MTV is correct.

Chairman BROUN. Okay. Dr. Hogan, what is your opinion about this, having third-party assessment?

Dr. HOGAN. So I think what we are interested in doing is having a program of continuous improvement. We are interested in looking at any number of ideas that can continue to deliver value for the Federal Government and we would be happy to engage in this conversation.

Chairman BROUN. Okay, thank you.

Mr. King, comparatively speaking, what are some benefits of mechanical insulation versus—as you mentioned in your testimony, “high-profile energy efficiency measures” such as high-efficiency lighting, high-efficiency heating and air-conditioning?

Mr. KING. Because mechanical insulation is dealing with the installation of domestic hot water or steam systems and so forth, the temperature differentials are much greater. Thus, the energy savings on a per-dollar, per-capita basis is 10, 20, 50 times that of a lighting or air-conditioning primarily driven by just the science of energy efficiency based on thermal conductivity and what we are dealing with.

Chairman BROUN. Very good. I hope our government will start looking more at insulation as a process, and I am sure you would be happy with that.

My time is about expired. I now recognize Mr. Maffei for five minutes.

Mr. MAFFEI. I thank the Chairman and agree with him on that last point about insulation.

My understanding—Dr. Hogan, my understanding is that there is a current performance contract that involves energy efficiency gains and a data center that OMB is holding up. Do you have any idea why OMB's holding that up? I know that the Energy Department is trying to do its best to administer it, but you are not allowed to go forward, I suppose, until OMB gives the go-ahead? So do you have any idea why they are holding that up? This is the one involving Lockheed Martin and the Department of Energy. It is a \$70 million contract. Are you aware of the one I am talking about?

Dr. HOGAN. Yes, so this, of course, is a particular contract that we are working on. It is under discussion and review. We are work-

ing to get it resolved. And I can't really speak to much more than that at this time other than we hope to resolve it as soon as we can.

Mr. MAFFEI. All right. I respect that. Do you know who can speak to it? Is it—does it have to be OMB to speak to it or—I mean we do have oversight responsibility so I understand why you and the Department may not be able to, but is it OMB that has to address—

Dr. HOGAN. Certainly, this is a Department of Energy decision and the contract is under review at the Department of Energy. We are happy to engage with you after the hearing today to further figure out what we can talk about here.

Mr. MAFFEI. Yes. No, okay. I would like as close as you can a specific answer as to why that is being delayed. And the reason is, it is not just—I am not just trying to pick on this one contract but I do think that with all the good things we have been saying about these ESPCs, there is a chilling effect if one of the major ones that is—has been presented that as far as anybody can see is a good idea is being held up in this way, it is a—it creates this perception that there is going to be a lot of red tape. So I do think it is important not just for this particular contract but for others.

Ms. Schafer, one of the issues that we face as we look at the savings in this is the fact that the Congressional Budget Office refuses to score the savings from these contracts. I presume that your group disagrees with their position. Can you enlighten us at all as to why CBO has that position and why it is, you believe, incorrect?

Ms. SCHAFER. Yes, thank you. In 2002 or 2003 CBO started to score ESPCs for the first time. That became apparent to us when our 40 was about to expire. As we understand it—and this is been the case for the past several years with the CBO, although not the case with the OMB—they do not score it and haven't—and it has been reaffirmed through three Administrations.

But they assume that in ESPC you enter into a mandatory contract to pay back the contractor. So you are going to pay them back over several years. You are going to get paid back out of energy savings. So what you have now is a mandatory expenditure on the books according to the CBO and discretionary money—energy bills—that pay that back. We don't count energy bills in the CBO sort of—they don't have a way to rectify those things. They assume anything that is appropriated is discretionary money. It could not be appropriated. You could just not appropriate money for those energy bills. So it doesn't count the same as the mandatory expenditure that is on the books. So that is the large part of it.

The other part is some of the savings that accrue, accrue outside of the ten-year scoring window. So—

Mr. MAFFEI. So does your organization—what do you say in response to that? You have actually explained it very, very well, I think, but what do you say in response to it?

Ms. SCHAFER. Well, we don't believe the score makes any amount of sense, and I don't know how else to say it other than, you know, there should be a way to find, you know, we have got admissions from CBO in the past that are somewhat different because there is a guarantee of savings. It is the only thing where there is a

guarantee of savings. It is the only thing where OMB and CBO do not agree on how to score it.

And our point is—I mean, Chairman Nichols of the Budget Committee, his line was “ignore the score” several years ago, you know, tough to do these days.

Mr. MAFFEI. Well, yes, particularly since it is in the Congressional rules that we can’t ignore the score.

Dr. Whitlow, do you—have you seen the savings from this that isn’t scored by CBO in the contracts you have worked on?

Dr. WHITLOW. I will have to go and—

Chairman BROUN. Turn on the mike.

Mr. MAFFEI. You know, that is fine, and I am out of time anyway—

Dr. WHITLOW. Yeah.

Mr. MAFFEI. —but, yes, I am looking for specific instances where clearly there has been savings. I—this is very frustrating because it is one of those issues where I think all of us—and I didn’t even ask Mr. King; I am just presuming that you would agree. I think all of us sort of see clear savings here and yet, you know, there is all these sort of inside baseball technical reasons or whatever. So I do want to look at that further.

And, Mr. Chairman, I apologize for going over and I yield to you.

Chairman BROUN. Well, I thank you, Mr. Maffei. And I think we all want answers to those questions because I think it is critical for the taxpayers to have those answers because this scoring problem is certainly something that we need to get to the bottom of it.

Mr. MAFFEI. If the Chairman would yield, yes, absolutely. It prevents us from doing something that is going to save the taxpayers money if there is absolutely no way that we can record that it is likely to save the taxpayers money. It just doesn’t make any sense. I thank you for your comments on that.

Chairman BROUN. Absolutely. I agree. I now recognize Mr. Hultgren for five minutes.

Mr. HULTGREN. Thank you, Chairman. Thank you all for being here.

With the President’s budget continuing to slash funding for discovery sciences in the Department of Energy in order to pay for ever-expanding loan guarantee programs and energy subsidies, I have seen personally how our labs must find creative ways to reduce their cost so they can continue their groundbreaking work.

In my district, I have Fermilab. And just Fermilab alone has over 400 buildings on its site, as they talked about in their last newsletter, and there is no question that we can find energy savings with 400 buildings in our laboratories and we need to do that.

First question, Dr. Hogan, if I can address it to you, can you tell me how much energy consumption has been reduced at agencies due to ESPC usage and how that figure can be verified?

Dr. HOGAN. Yes, so as we have been talking about within the energy performance contracts, there is guaranteed savings. There are MTV plans that go with that guaranteed savings. In the program that the Department of Energy runs—and keep in mind that is just a piece of what goes on in the performance contracting space—we have been able to report on \$2.7 billion of investment in energy ef-

efficiency projects and \$7.2 billion in savings that go with those contracts.

Mr. HULTGREN. And how are those verified?

Dr. HOGAN. So that is, as we have been discussing, through ongoing monitoring and verification. There is an MTV plan that is part of every contract in terms of what the pieces of equipment need to do to perform to sort of meet the elements of the contract and then the ongoing monitoring that shows indeed that those pieces of equipment do perform that way.

Mr. HULTGREN. Shifting or getting a little more specific, in 2009, DOE awarded a 15-year ESPC at Fermilab for 1.4 million in up-front cost projecting savings of 3.25 million over the life of the contract. I wonder if you could tell me how realistic these savings are looking and how quickly they are coming into place?

Dr. HOGAN. I certainly can go back and look specifically—

Dr. HOGAN. —into that contract—

Mr. HULTGREN. If you could and if you can respond maybe in writing.

Dr. HOGAN. Sure.

Mr. HULTGREN. I will follow up with you on that.

Dr. HOGAN. Absolutely.

Mr. HULTGREN. And wonder if you can also respond how long after the life of these contracts can we expect to see savings?

Dr. HOGAN. So that is actually one of the topics that is taken up in this Oak Ridge report that people are talking about. You know, the average life of a contract has been on the order of 17 years. Clearly, some of the measures that go into these buildings, such as a chiller, can have a lifetime of 25 years. So indeed a fair amount of time there for additional savings beyond the guaranteed savings in the contract.

Mr. HULTGREN. Shifting over to Ms. Schafer, as interest rates fluctuate, can ESPCs be renegotiated to take advantage of lower financing rates that we have seen recently? If so, how many FPCC companies have done this?

Ms. SCHAFFER. Well, several FPCC companies have been working with their agency customer and the financing community on potential refinancing opportunities. That really is something that the financial community has to do. We are sort of in the middle of that. So some of them will agree to them. Often, they will agree to a refinance if there is additional scope. And we work to see if we can make that happen when it makes sense for the site.

Mr. HULTGREN. Okay. You had testified about the work at Oak Ridge National Laboratory saving twice the guaranteed amount. Is this common for these type of contracts and can you tell me how that number was derived?

Ms. SCHAFFER. I can tell you as much as I know because I am not the technical guy at Oak Ridge, but what I understand is that when we went under ESPC, an ESCO guarantees an amount of savings over the life of the contracts. So say it is a 15-year contract, and over that lifetime they will guarantee X dollars. Generally, more occurs because they underestimated whatever it might be, and that savings goes directly to the agency, to the customer during the life of the contract. After the contract, you get a lot more savings because then you don't pay back for all the invest-

ment that the ESCO did. And so that is included, too, and so it is those types of things that have really increased the value of the ESPC.

The other thing that isn't counted is the fact that you get things. So agencies generally enter into an ESPC because they need something. My chiller is in bad shape, I have got to get a new one. That is infrastructure expenditures that go away upfront.

Mr. HULTGREN. Right. Okay. I have only got 30 seconds left.

Real quickly, I wonder if you could again, Ms. Schafer, staying with you, can you tell me of any of the downsides to the Federal use of ESPCs?

Ms. SCHAFFER. Well, I think that depends on who you are talking to. I think some people feel that financing an ESPC, financing energy projects is a bad idea, that it is cheaper to do it with appropriated dollars. Oak Ridge in a 2006 report said that is not the case, but if you just look at it flat out, you say why should I pay financing charges if I don't have to? That is a potential downside.

Some people may want to have the expertise in-house; we can't really afford that right now, so for the time being, I don't see a lot of downside to an ESPC.

Mr. HULTGREN. Well, my time is expired so I do want to yield back, but if any of you would have a response to that, other thoughts of things we should be watching for, be concerned about, potential downsides, and maybe if we can follow up with some other questions, that would be great as well.

So with that, I yield back. Thank you, Mr. Chairman.

Chairman BROUN. Now the Chairman recognizes Mr. Swalwell for five minutes.

Mr. SWALWELL. Thank you, Mr. Chairman.

We have seen locally in the cities that I referred to, Dublin and Livermore, that having these types of contracts not only reduce the city's energy bill but the installation of the different types of upgrades that take place and the maintenance that is required thereafter creates new local jobs.

And so I am wondering, Ms. Schafer, if you can talk about if there is a correlation between creating jobs and also reducing the Federal Government's energy bill?

Ms. SCHAFFER. Well, the nice thing about Energy Savings Performance Contract or really any energy efficiency project is it is local. You can't offshore efficiency upgrades to a building that is here. We have estimated that we get about 10 jobs per million dollars of investment. So it does add up. The Chamber testified to, you know, I think it was like 400,000 jobs or something from ESPCs already so—

Mr. SWALWELL. And also, do you see a potential—and I would also ask Dr. Hogan this question—do you see a potential to increase the role that ESPCs play with respect to data centers? And we know that data centers, you know, a growing trend to add more and more data centers across the country or move information into the cloud. I mean they really do consume a lot of energy. Now, are there more opportunities out there to use ESPCs for data centers? And I will start with Dr. Hogan.

Dr. HOGAN. Well, I think that is a great question. Certainly, there are some sort of data center configurations that we can use

ESPCs for now given the reliance on, you know, intensive air-conditioning in data centers. But we do know that there is interest in figuring out how to do more with these ESPCs and we would be happy to respond to any proposals that people might have in that space.

Mr. SWALWELL. Great. And Ms. Schafer?

Ms. SCHAFFER. We are very concerned about the data center area. It—we feel it is completely in the authority of existing ESPCs. There are—the government has definitely seen some opportunity for data centers. They have put out notices of opportunity to our ESCO community asking them to bid on projects for data center consolidations. We have had selections for those from NASA Glenn at GSA and in the Navy. We have also had just NOOs that are some of them a little bit held up because of this current holdup on the first one with the Department of Transportation, the Air Force, and with the USDA.

So we do—the government definitely sees it as an opportunity and so do our members.

Mr. SWALWELL. Can you—ESPCs be applied to the Federal vehicle fleet under existing law? And we saw Dr. Hogan refer to, I think, 600,000 civilian vehicles. And I know there are efforts underway, but what role can ESPCs play in upgrading our vehicle fleet to hybrid or electric cars? And, Dr. Hogan, I will start with you.

Dr. HOGAN. So as the statute is currently written, it does not allow us to use ESPCs for our fleets.

Mr. SWALWELL. And, Ms. Schafer, is that—would that be a positive change? Is there interest in industry to compete for that if it was available?

Ms. SCHAFFER. There definitely would be and we have seen legislation, bipartisan legislation in the past trying to do this. But it triggers a score from CBO because it is an expansion of our authority. So scores are triggered both when we try to expand the authority into things that are non-building-related or non-plug-load-related, as well as when we actually say from a Congressional angle, hey, get more efficient if they might use us to—use an ESPC, then that also scores. So it is back to the scoring.

Mr. SWALWELL. I am glad the scoring has been brought up and maybe this is an opportunity that the Chairman and I and Ranking Member Maffei can work on to address and try and correct this because it sounds like there is agreement among the three of us that it is just a—kind of a mindless approach to scoring and there are opportunities for further savings that we could look into.

Chairman BROUN. Mr. Swalwell, you are suggesting the Federal Government is mindless?

Mr. SWALWELL. Not too mindless, that you and I, Mr. Broun, couldn't fix it.

Chairman BROUN. Well, I will agree with that, Mr. Swalwell.

Mr. SWALWELL. Well, thank you, and I yield back.

Chairman BROUN. Thank you so much. Now, the Chairman will recognize Mr. Cramer for five minutes.

Mr. CRAMER. Thank you, Mr. Chairman, Ranking Members, for this, and thank you to all of the witnesses.

I am still trying to get over the fact that the Federal Government manages half-a-million buildings in the United States, and that speaks to a whole other challenge, which I think, frankly, is symptomatic of why Administration officials and bureaucrats can come in here and give roundabout answers to direct questions. The bureaucracy is too big.

That said, I want to expand this discussion on efficiency a little bit because my personal belief is that efficiency ought to be its own reward. It shouldn't be this complicated. I have always found it frustrating that it requires a whole bunch of people creating a whole bunch of jobs to screw in a light bulb that will save money, and that ought to be fairly self-evident.

I know a little bit more about it, however, because I do think, even as the largest landlord, largest energy user in the country, we have a broader responsibility as well, and that is to the rest of the ratepayers that are also affected in areas where we may find efficiencies in our federally owned buildings. I know there are a number of models that utilities can use to determine the value of energy efficiency, and it shouldn't be done in a vacuum. And it is not just the one customer that uses an energy efficiency that has an impact in my energy efficiency, especially in a down economy. There are stranded costs in our plant, for example, that have to be paid for by the number of ratepayers that there are in any given service area.

And so I would like somebody to speak to me about the various models and whether or not we consider other ratepayers than simply the Federal Government, because the Federal Government, while we can find efficiency in a particular building or a particular agency, those savings are going to be—the cost—there is still a cost somewhere else that somebody else has to bear as a result of those savings in some cases.

So do you know what kind of modeling is used to determine whether there is a negative impact even of—and, by the way, I support this kind of thing, just so you know. But even in a savings to the Federal Government, do we measure the possibility that that savings will be a cost of the ratepayers not in their taxes but perhaps in their utility rates? If somebody could speak to that if it makes sense to anybody.

Ms. SCHAFFER. The only thing I can think of is if we get more efficient anywhere on the grid—

Mr. CRAMER. Um-hum.

Ms. SCHAFFER. —everywhere would be better on the grid. Then, you reduce the need to build new power plants, which cost money to do and that gets rate-based and affects all taxpayers. And I don't—but I am having—I don't think I understand about—

Mr. CRAMER. Okay. So let me ask you this—

Ms. SCHAFFER. —the—if you get more efficient here, does it make it more expensive over here? I don't think that is—I don't understand that part. I apologize.

Mr. CRAMER. That is—okay. Let me get Dr. Hogan and then I will—

Dr. HOGAN. But you were going in the right direction because many utilities run energy efficiency programs. I think if you look across the country, more than half the States have policies in place

where they are looking to procure energy efficiency whenever the energy efficiency costs less than the construction of the next power plant. And then they have energy-saving goals so that they know they don't have to build that next power plant.

And I think it is the programs that we are engaged with as well that help feed into the utilities planning and their ability to sort of avoid the construction of that next power plant.

Mr. CRAMER. Teed up perfectly. I think that is exactly right. So then my question becomes what you have just described is what I would call a total resource cost-and-benefit analysis. But there is also a ratepayer impact model that I think we are ignoring in this discussion because your assumption, while usually true, I don't think is always true.

And when you consider in a down economy like we have today where there is plant built—and there is a lot of plant in certain areas that there isn't the next generation of plants to be built unless, of course, we issue mandates that they have to be closed down.

And, by the way, with regard to jobs creation, building new power plants is pretty good jobs creation as well. So this bias sort of against that, I think we need to put energy efficiency in a broader context and that is to consider not just the participants in an energy efficiency program but the nonparticipants and their "benefits" as well because in many utility situations that I am familiar, the cost to the nonparticipant is quite high. And generally, the nonparticipants are people that can't afford the new refrigerator or the new lights or the new insulation at all this other things.

So when we talk about energy efficiency, I don't think we should talk about in the vacuum nor necessarily assume that the next plant is a negative to either society or to the local economy or to the ratepayer.

With that, my time is expired.

Chairman BROUN. Thank you, Mr. Cramer. Now, Mr. Peters, you are recognized for five minutes.

Mr. PETERS. Thank you, Mr. Chairman. I want to first agree with the comments about scoring. One of the things that has been most surprising to me about the Federal Government is the rigidity with which they observe this scoring that doesn't give you any benefit for what you might spend today in terms of the future. And this is not the way that any family or small business or local government would make a decision.

And we would look—if we were ever to evaluate any investment, you would look at what you get back in the future. That is what distinguishes an investment from spending. And so, again, we see that today and I just want to say that don't just leave it at the three of you, Mr. Swalwell. I would like to join up and be part of this conversation.

The question I had for you, though, and perhaps this is for Dr. Hogan or Ms. Schafer, I love the idea of using these—it reminds me of a power purchase agreement kind of plan that would—it is a way to get significant savings for Federal facilities with minimal cost implications, really if any, and I think it is a great program.

But I am interested in the context because, as we think about upgrading Federal facilities in general to be making improvements,

I wonder whether you might tell me whether this model could assist in making Federal facilities more resilient to the kind of big weather events we have been seeing lately. That can be enhancing structural activity, the building envelope, moving infrastructure to where it is less vulnerable to floods or earthquake or wind, and also maybe improving the strength of glass in the window. Have you given any thought to that and how might the big weather be accounted for in this kind of program where we are going to be making these improvements? And I would be interested in hearing your answer to that.

Dr. HOGAN. Well, I think we do have to start with an understanding that the performance contract is helping the government put in place things without having the upfront capital that can get paid back with a saving stream. So within that construct, we can look at, you know, what can fit into that type of contract.

I guess one area I would pull out in particular that we have been doing a lot of work in right now is with combined heat and power, right, which many people also believe is a resiliency measure that provides for some amount of power activity on a base or in a facility during an extreme weather event. But we are happy to look at what can be built into the construct of a performance contract in that space.

Mr. PETERS. Ms. Schafer?

Ms. SCHAFFER. Our members are very excited about the resiliency and the security—we do a lot of defense facilities—possibilities. We do do a lot of onsite generation, distributed generation, whether it be with renewables or with natural gas, CHP, whatever it is, and we are looking to do more.

Mr. PETERS. Okay. I would just ask you it just makes sense if we are going to be making these improvements to think about some of these new realities we are facing.

Thank you, Mr. Chairman. I yield back.

Chairman BROWN. Thank you, Mr. Peters.

I next recognize Mr. Schweikert for five minutes.

Mr. SCHWEIKERT. Thank you, Mr. Chairman.

You know, this is one of those where you have a dozen sort of questions and you are hoping none of them make you actually look—what is the term—oh, yes, stupid. But mechanically, first—and is it Ms. Hogan or Dr.—how many spots do we have where we have entered into these types of agreements and it happens to be in a state or a regulated area where there is a purchase buyback? So you are doing distributed generation and we have had a contract, we have put solar panels on the building, and certain times of the day we are generating more, we turn the meter backwards, and the municipal or private power producer has to buy that power. Do you know of that existing in any of these contracts?

Dr. HOGAN. Yes, I certainly don't have those numbers off the top of my head. We can collect that information for you.

Mr. SCHWEIKERT. Ms. Schafer—is it Schafer-Soderman?

Ms. SCHAFFER. Schafer. We generally do small-scale renewables or small-scale generation that is used within the fence. So there isn't a lot of selling back to the grid. There have been a few projects in the past. Currently, the Administration is—has different ways that they would like to do power purchase agreements. They don't really

want to put them within an ESPC so we sort of don't do a lot of that at this point.

Mr. SCHWEIKERT. Okay. I know that is becoming actually quite an issue in California, Arizona, and others where the distributive generation is actually creating some fascinating curve on adoption and sort of transfer pricing.

But that is—walk me through—if I were actually describing this to my constituents—the benefit of using sort of a private financing mechanic as we do here compared to an appropriated one?

Ms. SCHAFER. So you get a couple of benefits and you—it is a different construct but what happens is you go into—you select a contractor based on maybe some preliminary audits and that type of thing, and then you work with them very collectively. It is a very cooperative program between the government customer and the ESCO deciding what all do we want in here? Here is our immediate problem. What else can we do to help pay for that? What else—what other beneficial things do you want? And it is a back and forth, back and forth, back and forth. It is very different than a design-build type of contract. You actually don't sign a contract with the Energy Service Company until you get all of that done.

Mr. SCHWEIKERT. Okay. We are a little off.

Ms. SCHAFER. Okay. I am sorry.

Mr. SCHWEIKERT. But—okay. Let me box it in.

Ms. SCHAFER. Okay.

Mr. SCHWEIKERT. Will the benefit of the contract change much if interest rates, cap rates, the costs change?

Ms. SCHAFER. It is locked in so whatever you lock in at the time of—

Mr. SCHWEIKERT. But that is in the contract that is signed today?

Ms. SCHAFER. The contract signed today.

Mr. SCHWEIKERT. How about into the future if we are sitting here and a year from now we are back at historically normal interest rates, do you think the value of these contracts—

Ms. SCHAFER. Well, you have locked in it really good rates—

Mr. SCHWEIKERT. No, one more time—

Ms. SCHAFER. —you did it today—

Mr. SCHWEIKERT. New contract—

Ms. SCHAFER. Oh, okay, new contract—

Mr. SCHWEIKERT. —a year in the future under current—

Ms. SCHAFER. Okay.

Mr. SCHWEIKERT. —more normalized interest rate environment.

Ms. SCHAFER. So in 2006, as Oak Ridge report said, that even if the interest rates then, which were significantly higher than they are today, they were still a very good deal, a better deal than a project done with appropriated dollars straight up.

Mr. SCHWEIKERT. Okay. That—

Ms. SCHAFER. And that—

Mr. SCHWEIKERT. Is it Dr. Whitlow? And let's see if I can come up with the proper way to build this box and this question.

I have a government facility. I have infrastructure needs. I need a new chiller, I need a new air conditioner, I—it is time for new windows. Does this become an alternative way to finance capital costs, as well as being able to talk about the energy savings? And

I am sort of curious what ultimately—on occasion does—do I have multiple motivators here of this is a way to sort of strip certain capital costs off my budget and find another way to finance them?

Dr. WHITLOW. Right. It is a way to finance the project without using the appropriated funds, and then the big advantage is when we enter into these projects, it is the guaranteed savings that we get.

Mr. SCHWEIKERT. Well, but in that case, if I am financing these improvements, it would have been in my capital budget. Do I have any sort of movement of what those appropriated dollars would be? So, you know, a budget is built, we have a capital value, we are going to build a new chiller, all of this, and I enter into one of these agreements. I get my chiller. Do those dollars end up being fungible and move somewhere else?

Dr. WHITLOW. Well, what we will not do if, when we enter into these agreements, our appropriated dollars don't come into play because when we use this alternative—this—well—

Mr. SCHWEIKERT. They wouldn't come into play but you have actually—is the term subrogation? I have covered my costs here so I still have that dollar in my budget line items. I am not saying it is bad or evil; I am just trying to understand. Is it something we should look more to when we are building budgets saying, hey, there is an ESPC possibility on this facility; therefore, certain capital cost shouldn't be in their line items?

Dr. WHITLOW. Well, I certainly think it would be an advantage to us to look at that mechanism—

Mr. SCHWEIKERT. Okay.

Dr. WHITLOW. —because it allows us to use our appropriated dollars, as you say, use our appropriated dollars other places and not have to use them to do these capital improvements, which result in these energy segments.

Mr. SCHWEIKERT. I am over my time. Thank you, Doctor.

Mr. Chairman, thank you for your patience.

Chairman BROWN. Thank you, Mr. Schweikert.

Now, Mr. Veasey, you are recognized for five minutes.

Mr. VEASEY. Thank you, Mr. Chairman. And I wanted to ask Dr. Hogan specifically about the ESPCs and other options. Are there other options that are available besides the ESPCs and direct funding that agencies can consider to pay for energy-saving projects?

Dr. HOGAN. Yes, we talked about performance contracting generally with Energy Savings Performance Contracts being one mechanism. We have also talked about appropriated dollars being available to the extent that agencies have those dollars in their facility budgets. And then I think we also talked a little bit today about the service contracts that utilities can provide, UESCs, which are also an important mechanism that many agencies have availed themselves of but again are different than the federally administered contract mechanisms.

Mr. VEASEY. Let me move over to Energy Independence and Security Act of 2007. Of course, that authorized the use of any appropriated funds for upfront ESPC financing. And I wanted to ask Dr. Whitlow about NASA.

I was really curious what effect that would be on NASA and other Federal agencies if the ability to use other funds were removed?

Dr. WHITLOW. Well, if we remove that ability, what it does, it gives us more flexibility in meeting our energy and water reduction goals because we have found that just the use of the tools that we have available such as ESPCs have provided us great benefit and great savings not only in our energy usage, our water usage, and has resulted in significant dollars savings annually as well. So additional tools would benefit the agency.

Mr. VEASEY. Dr. Schafer, do you want to add anything?

Ms. SCHAFER. I guess I was trying to understand—okay. So in 2007 I think there was language that said something about you can mix money so you could use appropriated dollars in with an ESPC. This doesn't mean you are suddenly replacing it necessarily. What it means is if you have got some really expensive widget that you want to install along with a bunch of energy conservation measures and you want to use some money up front that you have so you do have appropriated dollars for efficiency, you could put that in, too, and shorten your timeline of payback. Some agencies have done this in the past; other agencies are—don't do it and still don't do it. I don't think the language really had any impact at all on whether and which agencies.

Mr. VEASEY. Thank you, Mr. Chairman. I yield back my time.

Chairman BROUN. Thank you, Mr. Veasey. I now recognize Mr. Weber for five minutes.

Mr. WEBER. Thank you, Mr. Chairman.

Dr. HOGAN, among the dozens of actions the President announced on Tuesday as part of his Climate Action Plan, was a commitment to complete numerous new energy efficiency regulations for appliances. I understand those regulations are promulgated under your supervision, is that right?

I have the list of current active rulemakings. They include virtually every appliance you can either do what we call hardwire or plug into an outlet. That would be ceiling fans, air conditioners, heat pumps, furnaces, boilers, refrigerators, and on and on and on—heaters included and on and on and on. And executing the President's directive under your supervision, which rulemakings do you expect to finalize first and how soon should we expect to see these?

Dr. HOGAN. We can certainly provide you with a list of the rule actions that are currently in play. I think it is great to think about the amount of energy savings that these appliance standards have brought forth to the American consumer. You know, just the ones that have been put in place over the last four years are helping save something close to \$400 billion through 2030. So they are a great way to help consumers and businesses save energy.

Mr. WEBER. Well, let me—I will just editorialize for a second. The government's role is to protect us from our enemies. When it decides it has to protect us from ourselves, we have a problem. And my concern with these rules beyond the principle that the Federal Government should not be in the business of designing appliances—and I own an air-conditioning company—

Dr. HOGAN. Um-hum.

Mr. WEBER. —is that they limit consumer choice. They will raise the purchase price of these appliances, actually reduce the sales for manufacturers because as—and I have witnessed that in my own company—as units get more and more efficient, people cannot afford to purchase them. And they actually have the old one repaired. Now, what does that say about higher efficient standards or reducing the energy cost? And many manufacturers have actually filed comments with DOE along those lines.

And just one example, remanufacturing comments on the DOE's rule for residential furnace fans say that the rule would result in—and, of course, I am reading from their comments and I can attest to them in my own business—higher initial cost, which would lead to consumers switching to less-efficient products. They literally will buy a less-efficient air-conditioning system because the price is higher or because in many ways the rules promulgated, what manufacturers have to do. Higher initial cost, as I stated earlier, will push consumers to repair rather than replace their units. And I can go on and on and on. Window units might be used as opposed to buying a whole complete central system, which we have experienced in our business.

Let me just ask you, when is the last time you bought an air conditioner or furnace?

Dr. HOGAN. Certainly within the last 10 years.

Mr. WEBER. Within the last ten years. And then I would—let me just go down the panel.

And Dr. Whitlow, when is the last time you bought one? And, by the way, yours is inefficient now. You need to replace it.

Go ahead.

Dr. HOGAN. It was efficient when I bought it.

Mr. WEBER. Well, I understand. And as often as we have these meetings and change the rules, there—you know, there—you are going to be replacing it more often.

Go ahead, Dr. Whitlow.

Dr. WHITLOW. The last air-conditioning and furnace I bought was in 2000 when I purchased my home.

Mr. WEBER. Okay.

Ms. SCHAFER. 2007.

Mr. WEBER. Okay.

Mr. KING. 2009.

Mr. WEBER. Well, Mr. King, there is hope for yours for at least a couple more years. Gosh, I got lots of questions.

You talk about increasing energy efficiency and power on the grid but you don't—did you—Dr. Hogan, do we weigh the impact, lost opportunity—investment opportunity when you don't build that new power plant? Those investors don't get a return on their money, for example, number one. Number two, new power plants are a lot more efficient than the older power plants, so we can actually bring them online, less emissions. Do we measure the amount of money that will be spent on trying to get carbon pollution out of the air or do we just say we want to reduce energy usage so that new plants are not built and we keep driving the old '60 model Chevy Caprice?

Dr. HOGAN. I think the premise behind energy efficiency—and we sort of talk loosely about avoiding the construction of the next

power plant. I mean I think what we are all interested in is providing the services that people want and to be doing it as efficiently as possible because efficiency aligns with lower cost—

Mr. WEBER. Okay. But I am—

Dr. HOGAN. —to the consumer.

Mr. WEBER. —running out of time so bear with me for one second. That is a private decision. If a company wants to invest in a power plant and they can produce energy at a more reasonable rate and do it more environmentally friendly, why would we want to deter that?

Dr. HOGAN. I think you are sort of putting me now in the position of being a state regulatory commissioner, right, who is responsible for overseeing these types of decisions for our regulated electricity industry, but I think generally, people are looking for solutions that deliver the least-cost energy to the American customer.

Mr. WEBER. Well, and I am sorry. Forgive me. As we seek to justify higher and higher efficiency ratings that we impose on manufacturers, in essence, we are stepping in between state regulatory agencies and we are saying, look, you are going to have to build more efficient units that use less electricity. And the net result may be that we actually defer the building of more efficient, more environmentally friendly plants. And I think that cost needs to be taken into account.

Mr. Chairman, thank you for your indulgence. I yield back.

Chairman BROUN. Thank you, Mr. Weber.

Now, the Chairman recognizes Mr. Lipinski for five minutes.

Mr. LIPINSKI. I thank you, Chairman Broun. I unfortunately had another hearing at the same time so I apologize for not being here to hear the—your spoken testimony.

But in going through the written testimony, I know, Mr. King, you highlighted the amount of energy savings from mechanical insulation and it seems like it could be very helpful for manufacturers and industries who are trying to boost their competitiveness. I wanted to ask not only Mr. King but the entire panel. Do you see a greater potential role for things like mechanical insulation in Energy Savings Performance Contracts or in other ways—other use by the Federal Government? So let's start with Mr. King.

Mr. KING. We would certainly hope so. One of the biggest hurdles I would say, barriers today with mechanical insulation in existing buildings is when they are looking at existing buildings outside of a major performance contract, it is basically referred to as a maintenance expense. And whether it is government or private business, people are cutting expenses and not completing things that are energy efficiency that do in fact have a tremendous return on investment from an efficiency standpoint. And, as a result of that, it is—nothing is being done because of budgetary restraints. They are looking at it as an operating expense as opposed to an energy efficiency investment.

So it is the fact that the energy performance contracts, when you look at it holistically, if they would look at the proven prescriptive items like mechanical insulation—and there are others—to be included in that, all inclusive in that, it actually helps the implementation of those types of measures.

Mr. LIPINSKI. Thank you. And anyone else want to—Ms. Schafer?

Ms. SCHAFER. We definitely use insulation and—when we do mechanical work when we replace chillers, decentralized boilers, all those things. So it is used. We are getting in to deeper and deeper retrofits in Federal buildings, working on Net Zero with the Department of the Army right now, and there will be even more opportunities for insulation.

Another place that we really see a role for both ESPCs and an increase used in mechanical insulation is in the industrial markets, which we don't have a lot in the Federal Government, but it is a huge opportunity to save energy at very low cost.

Mr. LIPINSKI. Thank you. Dr. Whitlow?

Dr. WHITLOW. When we work with the DOE to identify potential projects and the task orders that we would do to improve our energy efficiency, if there is a role for insulation in meeting our goals and then certainly we would use insulation as appropriate.

Mr. LIPINSKI. Thank you. Dr. Hogan, anything to add?

Dr. HOGAN. Certainly, as we give guidance out to the Federal agencies around the types of measures that are appropriate for use in performance contracting, you know, we include a complete slate of those measures and certainly insulation will be part of that.

Mr. LIPINSKI. Great. Thank you. With that, I will yield back.

Chairman BROUN. Thank you, Mr. Lipinski.

And I think we have exhausted our numbers of Members that wanted to ask questions, and so our first round is over.

And I want to thank the witnesses for your valuable testimony and Members for their questions. Members may have additional questions. In fact, I will promise you we do. And I thank you, Dr. Hogan, for your promise to get the responses back for these questions for the record back in a very expeditious manner, within two weeks. I hope.

So Members—the record will remain open for two additional weeks for additional comments and for the questions that are being provided to the panel.

I thank you all for your being here today and for your excellent testimony and very interesting testimony. We have got a lot of things that we need to be doing to try to promote more energy efficiency and savings to the taxpayer, particularly in these hard times economically for the government and for everybody. The witnesses are excused and the hearing is now adjourned.

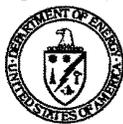
[Whereupon, at 11:35 a.m., the Subcommittees were adjourned.]

Appendix I

ANSWERS TO POST-HEARING QUESTIONS

ANSWERS TO POST-HEARING QUESTIONS

Responses by Dr. Kathleen Hogan



Department of Energy
Washington, DC 20585

August 20, 2013

The Honorable Paul Broun, M.D.
Chairman
Subcommittee on Oversight
Committee on Science, Space and Technology
U. S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

On June 27, 2013, Dr. Kathleen Hogan, Deputy Secretary for Energy Efficiency, Office of Energy Efficiency and Renewable Energy, testified regarding "Green Buildings – An Evaluation of Energy Savings Performance Contracts."

Enclosed are the answers to 21 questions that were submitted by Representatives Neugebauer, Hultgren, Schweikert, Weber, Peters and you for the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

A handwritten signature in black ink, appearing to read "Brad Crowell".

Brad Crowell
Acting Assistant Secretary
Congressional and Intergovernmental Affairs

Enclosures

cc: The Honorable Dan Maffei, Ranking Member



Printed with soy ink on recycled paper

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

- Q1. As the office that oversees ESPCs, how comprehensive is the Federal Energy Management Program (FEMP) database of agencies' use of ESPCs? For example, does FEMP keep a record of all federal ESPC projects including the state of progress of each one? Do individual agencies do the same for their own projects?
- A1. The Federal Energy Management Program (FEMP) maintains records of all federal Energy Savings Performance Contract (ESPC) projects (Task Orders) implemented under the Department of Energy's Indefinite Delivery, Indefinite Quantity (IDIQ) Contract. Included in these records is the state of progress of each project during development and information on awarded contracts. FEMP has limited information on federal ESPC projects implemented under other IDIQ contracts such as those administered by the US Army Corps of Engineers, or for site specific contracts not issued under an IDIQ. FEMP's information in those cases is limited to total annual investment for past years. FEMP also assists the Office of the Federal Environmental Executive and the Office of Management and Budget in tracking the progress of all ESPCs for the President's Performance Contracting Challenge (PPCC). However, the system used to track the results of the PPCC, does not collect the same amount of project level data which FEMP has on DOE IDIQ projects.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

Q2. How often do agencies audit their use of ESPCs and broad performance information? Where is such information recorded?

A2. Agencies perform audits of ESPCs periodically. There have been a number of ESPC audits completed over past years by agency Internal Auditors, as well as agency programmatic self-audits. The results for a few of the IG audits can be found on the Agencies' respective IG websites. While FEMP is not aware of any set audit frequencies at other agencies, since 2009 DOE has committed to visiting active individual DOE held ESPC sites every three years, and has contacted project managers for DOE ESPCs on an annual basis to ensure each ESPC is performing as indicated in the contract.

Audits, are not required under the DOE IDIQ contract. While FEMP has provided some audit-related services to agencies in the past, FEMP has no formal collection or oversight of the independent audits completed by the Agencies.

Measurement and Verification Plans however are required for each ESPC. It is the agency's responsibility to be knowledgeable of M&V options, methods, and requirements. In addition, the agency is responsible for approving the ESCO's M&V plan according to FEMP's guidance. The agency must witness M&V activities and review calculations, utility bill records, and other elements of the baseline to confirm that the approved M&V plan is followed, as described in FEMP's Guide to Government Witnessing and Review of Post-Installation and Annual M&V Activities. The primary responsibility for witnessing M&V will

fall on the Contracting Officer (CO), CO Representative (COR), or CO Technical Representative (COTR) depending on how it is outlined in the M&V plan.

FEMP ESPC resources are at www.femp.energy.gov/financing/espcs_resources.html

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

- Q3. How are Super ESPCs negotiated, and what is the process by which ESCOs continue to maintain their Super ESPC status? What safeguards are in place to assure Super ESPCs deliver the state commitments over the lifetime of the contract?
- A3. The DOE ESPC IDIQ contract was competed using full and open competition, resulting in multiple awards to 16 energy service companies (ESCOs). The current IDIQ was awarded in 2008 for a 5 year term, with two 3-year option renewals possible for contract extension. DOE recently opted to renew the current contract for one 3-year contract extension, until 2016. If DOE extends it for another 3-year term, until 2019, all ESCOs would then have to re-compete to be included in the DOE IDIQ umbrella contract. DOE awarded these umbrella contracts to ESCOs based on their ability to serve Federal agencies under terms and conditions outlined in the IDIQ solicitation. Under this contract, agencies can use ESPCs in Federal facilities, both domestic and international. Each ESCO has a \$5 billion ceiling amount, for ESPCs that may include energy efficiency, water conservation, greenhouse gas (GHG) emissions reduction investments, and renewable energy projects for Federally-owned buildings and facilities.

ESCOs must compete for each ESPC task order, issued under the IDIQ contract. DOE does not influence which ESCOs are selected for individual Task Orders awarded under the IDIQ, only that they must conform to the requirements of the IDIQ umbrella contract. The contract negotiations associated with the Task Order awards are managed by the respective Agency Contracting Officers. The projects are reviewed prior to award, in part, to assess the reasonableness of the proposal, and the projects require annual Measurement and Verification

to ensure equipment continues to operate as specified over the contract term and that the guaranteed savings are being achieved/delivered annually.

**The term Super ESPC has been replaced with the term DOE ESPC IDIQ.*

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

- Q4. How often have changes in utility rates impacted savings? What is the effect on Federal agencies engaged in ESPCs when utility rates go either higher or lower?
- A4. Contractor payments under an ESPC are generally based on fixed utility price escalation rates. The default escalation rates are those projected by the Department of Energy's Energy Information Agency (EIA). On an annual basis, EIA compares its projections with energy prices that actually occurred. In almost all cases, EIA has under-predicted actual utility price escalation. This means that on a whole, the government is paying the ESCO less than the savings are worth. If there was a decline in energy prices (\$), relative to the estimated price escalation schedule in the contract, it is possible for the reported ESCO energy savings (\$) to be less than what was originally guaranteed in the contract; however with the reduced energy prices (\$) the government would still achieve an overall reduction in their utility costs.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

- Q5. A 2005 GAO report noted the 2004 establishment of "a special working group to address the uncertainties about actual savings"¹ between FEMP and DOD. Referred to as the Energy Savings Discrepancy Resolution Working Group, it was to develop "approaches to compare projected and actual savings and to explain any deviations."² What findings have emerged from this group, and what is its current status?
- A5. The working group completed its task and published its findings in the summer 2005 issue of FEMP Focus (http://www1.eere.energy.gov/femp/pdfs/fempfocus_summer_2005.pdf).

The key findings of the report were that there are two factors that are largely responsible for the discrepancy between the guaranteed energy savings in ESPCs and actual utility bills.

These factors are load creep (i.e., increases in energy use due to new construction and mission changes) and utility cost increases which occur every year at both ESPC sites and at sites where no significant energy efficiency projects have been implemented. While load creep and utility cost increases are problematic to predict when calculating the guaranteed energy savings, FEMP recommends Agencies and ESCOs use M&V protocols that are appropriate relative to the various energy conservation measures implemented. These other M&V approaches can provide further detail relative to realized savings, even in cases where utility bill reconciliation may have limitations.

The DOE ESPC IDIQ requires active agency input regarding the pre-installation baseline, which is now defined to include factors beyond the ESCO's control that influence post-installation energy use (e.g., building occupancy, weather, plug load creep, etc.). The ESCO is

¹ GAO Report, "Performance Contracts Offer Benefits, but Vigilance Is Needed to Protect Government Interests," GAO-05-340, June 2005, available at: <http://www.gao.gov/new.items.d05340.pdf>;

² Ibid.

required to verify operation of the installed equipment/systems, calculate the previous year's energy and water savings, and compare verified and guaranteed savings annually.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

- Q6. Are all federal agencies on track to meet the President's goal established in 2011 of engaging in \$2 billion worth of ESPCs by the end of 2013?
- a. Are agencies trying to meet this goal because of the President's 2011 memo, or because they need to? In other words, absent the President's memo, would all agencies still be trying to engage in \$2 billion worth of ESPCs by the end of 2013?

A6a. The Presidential Performance Contracting Challenge established a comprehensive goal for the Federal government to enter into a minimum of \$2 billion in performance contracts. Agencies have committed to 302 potential ESPC and UESC projects with an estimated \$2.3 billion in investment value. As of July 2013, contracts have been awarded for 72 projects with an investment value of \$621.5 million and 230 projects remain in the development pipeline. While some Agencies have already awarded final contracts in FY 2013, FEMP expects most Agencies will be completing final contract actions during the first quarter of FY 2014 or very close to the December 31 target. FEMP is working with agencies to achieve this momentous challenge and streamline contracting processes which historically, have taken about two years to award.

Given the numerous requirements related to energy, water, and emissions reduction, as well as goals for increasing renewable energy use, Agencies have and will continue to have a need to use performance contracts to meet these statutory and Executive Order goals. The Challenge has helped reinvigorate, improve and streamline processes for the use of ESPCs and UESCs throughout the government, and we anticipate they will be increasingly used into the future, given the current fiscal climate and the continued need for efficiency investments in federal buildings.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

Q6. Are all federal agencies on track to meet the President's goal established in 2011 of engaging in \$2 billion worth of ESPCs by the end of 2013?

b. How does this monetary goal impact the quality of the ESPCs? How do agencies evaluate impact beyond just how many dollars were spent?

A6b. The investment goal is not expected to impact quality as both Agencies and ESCOs have adequate resources and processes in place to ensure quality projects are awarded. Agencies should evaluate the impact of their investment relative to its contribution to their efforts to meet mission, achieve energy savings, reduce energy intensity of their buildings, conserve water, and reduce greenhouse gas emissions in addition to evaluating the total cost-benefit of the project. Several key agency sustainability goals can be positively impacted by the investments associated with these contracts. Agencies ensure the high quality of their ongoing implementation of ESPC contracts through measurement and verification procedures. The M&V plan is the primary vehicle for first documenting and then periodically evaluating the performance expectations of the project. The DOE ESPC IDIQ requires additional details in the M&V plan to ensure that the ESCO and agency thoroughly understand what the Task Order covers.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

- Q7. As interest rates fluctuate, can ESPCs be re-negotiated to take advantage of lower finance rates, and if so, under what restrictions?
- a. With record-low interest rates in recent years, how many ESPC contracts have been re-negotiated to save agencies money?

A7a. Agencies and ESCOs can work together to refinance ESPCs, and have done so on a limited basis to date. Agencies can engage the ESCOs on refinancing; however, responsibility rests with the ESCO to discuss debt modification with its financier. It is important to recognize that ESPC debt service agreements are between an ESCO and its financier, the Government is not a contractual party to the financing agreement.

While DOE's existing ESPC IDIQ contracts contain no express authority for an agency to request refinancing from the ESCO, the individual agency can include such a requirement in its own stand-alone ESPC or task order, allowing it to direct an ESCO to refinance or otherwise modify its ESPC debt. Ideally, such a modification would result in a revised contract or task order payment schedule and contract modification.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

Q7. As interest rates fluctuate, can ESPCs be re-negotiated to take advantage of lower finance rates, and if so, under what restrictions?

b. If an ESPC is bundled with other ESPCs and sold to a secondary source, does FEMP have measures to ensure that re-negotiating ESPCs are always available as an option to agencies to take advantage of lower interest rates?

A7b. Agencies and ESCOs can work together to refinance ESPCs. Agencies can engage the ESCOs on refinancing; however, responsibility rests with the ESCO to discuss debt modification with its financier. It is important to recognize that ESPC debt service agreements are between an ESCO and its financier, the Government is not a contractual party to the financing agreement.

Agencies can optimize their projects by taking advantage of the broad latitude and flexibilities built into these contracts, allowing them to modify the guarantee, reassign ESCO services, and reallocate responsibilities in order to meet their needs and priorities.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

Q8. Is there a standard or uniform system of measuring ESPC costs that must be covered by savings? Also, how consistently do savings actually cover costs, and how is that information calculated, verified, and maintained?

A8. The International Performance Measurement and Verification Protocol (IPMVP) is the standard method by which guaranteed savings are measured. The IPMVP is maintained with the sponsorship of DOE by a broad international coalition of facility owners/operators, financiers, contractors or Energy Services Companies (ESCOs) and other stakeholders. Energy conservation measures covered by the IPMVP include fuel saving measures, water efficiency measures, load shifting and energy reductions through installation or retrofit of equipment, and/or modification of operating procedures.

Savings are tracked through the annual measurement and verification reports on each DOE IDIQ project. On a project level, for the most part, savings cover costs, although in a few cases payments to the ESCO have been reduced to reflect lower verified savings. At any given time, a few ESCOs and agencies may be engaged in efforts to resolve identified shortfalls, which, historically, have resulted in a resolution consistent with the requirements of the contract. FEMP tracks the results of these reports and with assistance from the Oak Ridge National Laboratory. ORNL generates an annual savings report that documents the results of M&V for all active projects. The report verifies that the guaranteed savings requirements have been met, or exceeded.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

- Q9. How can agencies verify that an ESCO's Monitoring & Verification (M&V) practices are completely accurate? What role does DOE play in this?
- A9. A condition of a DOE ESPC award is a requirement to have a Measurement and Verification (M&V) plan, which describes how the savings will be verified for each energy conservation measure (ECM), and includes details on the how they will be measured, to what schedule and utilizing what techniques. It is the responsibility of the Agency's Contracting Officer, assigned to the project, to be knowledgeable of all M&V options, methods, and requirements. The agency is responsible for negotiating and approving the ESCO's proposed M&V plan according to DOE guidance. The agency then must witness M&V activities and review calculations, utility bill records, and other elements of the baseline to confirm that the approved M&V plan is followed.

DOE provides several tools to aid the M&V decision-making process for DOE ESPCs. DOE also has a life of contract service which contacts the agencies and individuals responsible for each active ESPC project within DOE's IDIQ portfolio of projects. Twice per year, contact is made to identify the current status of projects. FEMP's Guide to Government Witnessing and Review of Post-Installation and Annual M&V Activities provides Agencies with the relevant guidance, however the primary responsibility for witnessing M&V will fall on the Contracting Officer (CO), CO Representative (COR), or CO Technical Representative (COTR) depending on how it is outlined in the M&V plan.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

- Q10. Energy savings estimates are all based on a static evaluation of existing technologies. For example, a new building technology may provide for a 5% improvement in energy efficiency over the lifetime of the ESPC, however, two years later a new technology may emerge that would provide a 20% saving. How is dynamic technology development integrated and considered into ESPCs?
- A10. Generally, ESPCs are long-term contracts that are not particularly well suited to deal with the dynamic replacement of technology. It should be noted that, if appropriated funds were utilized to perform ECMs in which the technology becomes outdated in the near future, there would be no recourse for any type of upgrade. However, a technology installed by an ESCO under an ESPC can be replaced by the agency (using either another ESPC or using appropriated funds) before the contract term ends. However, as with any energy conservation technology, the replacement must be economically feasible. During the feasibility study, the agency will estimate the likely savings from the technology, as well as the cost, which would include the cost of paying the current ESCO the remaining outstanding capital on that particular ECM.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

Q11. In what ways can the Department of Energy provide more oversight on ESPCs to ensure that all forms of energy efficiency technology are being utilized, and that technologies are prioritized on their overall energy efficiency impacts?

A11. DOE has developed tools and training to encourage both Agencies and ESCOs to fully explore all efficiency and renewable options that could have an impact on the site. The efficiency impact of the technologies, while perhaps the largest driver in the decision making, will be impacted by issues of cost effectiveness, compatibility with the mission requirements, etc.

One type of training tool specifically offered by FEMP is the Renewable Energy and Advanced Efficiency Technologies Planning session, which provides free screenings and guidance to identify cost-effective opportunities for agencies to implement energy-efficient products and renewable energy technologies.

FEMP ESPC training: http://www1.eere.energy.gov/femp/financing/espcs_training.html

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

- Q12. How does an agency – or FEMP – ensure that an ESCO is offering an agency competitive financing and terms in ESPCs? How much competition is there among the companies that finance ESPCs, and is there a mechanism to provide for a robust financial analysis to further reduce the financing costs?
- A12. FEMP's IDIQ contract requires ESCOs to obtain multiple bids for the financing and that the process is transparent. In most cases, ESCOs obtain three bids and choose the one that provides the best value for the government. In addition, FEMP compares project interest rates with interest rates on other recent awards to determine whether the interest rate is comparable.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

Q13. Are there instances of energy savings companies not fulfilling their contractual duties? What happens in those cases and how many are there?

- a. Conversely, what happens when agencies don't meet their contractual obligations? What are the some of the reasons for such an event, and how often has that occurred?

A13a. ESPCs provide Agencies a flexible and practical vehicle for customizing energy projects to their site-specific needs. These flexibilities allow the Agencies to identify and modify potential issues before they endanger the project, mitigating the risk of default or breach.

While contracting officers at individual agencies are responsible for administering ESPCs, FEMP is not aware of any contracts that were terminated because of a default or failure by either the Agency or the ESCO. FEMP's statistics on terminated contracts indicate that, as of May 2013, 76 Delivery Orders have been closed out since 1998, with 58 being terminated prior to completion due to convenience in agreement with the ESCO and 18 completing their full contractual term (e.g. the 12 year contract that is completed after its 12th contract year). The term "Convenience" includes Government buy out according to the cancellation schedule, base or building closure, the use of end of year appropriations, refinancing, etc. In some of these cases, Agencies with a surplus of end of year appropriations have chosen to buy out the rest of the ESPC contract, which is an option in all ESPCs contracts. All ESPC contract have a stipulated buy out price, providing another avenue of flexibility to the Agencies.

FEMP has a proactive approach that mitigates contract issues before they occur. Shortfalls are identified through a FEMP project team and any perceived issues are mitigated. These

mechanisms are built into the ESPC to safeguard the Agency and ESCO. If issues are identified that need follow-up, the DOE ESPC team determines what actions to take. Some examples of typical project issues include training for agency participants on how to navigate the ESPC process and develop a high-value project and advising agencies on their rights and responsibilities if a contract dispute arises.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

Q13. Are there instances of energy savings companies not fulfilling their contractual duties? What happens in those cases and how many are there?

b. In either of these situations, what recourse do the wronged parties have, and who arbitrates disputes between agencies and ESCOs?

A13b. FEMP is not aware of any contracts that were terminated because of a default or failure by either the Agency or the ESCO. FEMP's statistics on terminated contracts indicate that, as of May 2013, 76 Delivery Orders have been closed out since 1998, with 58 being terminated prior to completion due to convenience in agreement with the ESCO and 18 completing their full contractual term (e.g. the 12 year contract that is completed after its 12th contract year). . The term "Convenience" includes Government buy out according to the cancellation schedule, base or building closure, the use of end of year appropriations, refinancing, etc.

FEMP works with Federal agencies, which have the ultimate responsibility for their contracts, to see that strong contracts are in place and then provides life of contract support to help address and correct any issues along the way, so contracts do not fail. Through M&V plans and ongoing monitoring, issues are identified and if necessary the amount paid on the contract can be adjusted or the ESCOs can be required to replace equipment to ensure the appropriate savings are achieved. The Federal ESPC Steering Committee is also a resource available to Agencies to help to address common issues and find solutions. Therefore, FEMP is not aware of any DOE IDIQ projects that have ever reached the level where arbitration was required.

QUESTION FROM CHAIRMAN BROUN AND CHAIRMAN LUMMIS

- Q14. How many DOE facilities are currently unoccupied or unused? Has DOE entered into ESPCs for any of them, and if no, why not?
- A14. DOE has 6,791 buildings and trailers that are unoccupied and 1,191 buildings and trailers that are not utilized. Unoccupied buildings include warehouses and storage space in addition to other buildings with no current users. Buildings not currently utilized are labeled as zero percent utilization in DOE's real property management system.

Certain unoccupied buildings at DOE sites may no longer have mission relevance and may be candidates for cleanup, demolition, or potential reuse in the future.

ESPC applications for vacant buildings are likely to be limited (especially for buildings slated for near term demolition), but may include measures such as converting fire sprinkler systems from water to chemical based systems, thus allowing for the building to go into a completely unheated state. All of DOE's major laboratory sites were assessed for opportunities to utilize ESPCs and UESCs within the past 5 years, with active project reviews undertaken at approximately 20 sites, resulting in nearly \$500 million in energy related investments.

QUESTION FROM CONGRESSMAN NEUGEBAUER

Q1. The use of ESPCs has raised questions about how these contracts should be reflected in the federal budget. Currently ESPCs are not “scored,” but the Congressional Budget Office (CBO) believes that the obligation to make payments and financing costs is incurred when the government signs the ESPC, and should score the full cost to reflect this commitment as a new obligation at the time of signing. This is very similar to an issue that is preventing Veterans Affairs medical hospitals from being constructed due to CBO’s scoring of the leases up front.

a. If the scoring method were to change to reflect the CBO method, how would this impact agency usage of ESPCs?

A1a. The ESPC permanent authority, which was scored by CBO upon enactment, permits an agency to enter into multiyear contracts for a period of up to 25 years as long as it has the funds available for payment of the first year’s costs and the ESPC agreement guarantees energy savings sufficient to cover the full cost of the Federal investment. One of the significant advantages of ESPCs is that such contracts allow agencies to undertake energy saving upgrades and enables them to pay for the investment as savings accrue.

QUESTION FROM CONGRESSMAN HULTGREN

- Q1. In 2009, the Department of Energy awarded a 15-year ESPC at Fermilab for 1.4 million in upfront cost projecting savings of 3.25 million over the life of the contract.
- a. Are these savings on track to reach their expected potential within the 15-year timeline? If not, why not?
- A1a. Fermilab's ESPC Project is on track to realize its expected potential for the remaining term of the contract. For additional information, please see the response to Question 1b.

QUESTION FROM CONGRESSMAN HULTGREN

Q1. In 2009, the Department of Energy awarded a 15-year ESPC at Fermilab for 1.4 million in upfront cost projecting savings of 3.25 million over the life of the contract.

b. What is the total savings amount thus far? How is that amount being measured and verified?

A1b. Total savings in the first two years of the performance period (May 2011 to June 2013) amount to \$346,683. This exceeds annual performance guarantees and is documented in the annual measurement and verification (M&V) reports.

Savings are being measured and verified in accordance with applicable laws and guidance. The Energy Services Company (ESCO) is required to complete, at a minimum, an annual performance review of each energy conservation measure (ECM) to ascertain that the performance guarantee was achieved during the prior 12 months. The Federal Acquisition Regulation, ESPC statutes, and the DOE ESPC Indefinite Delivery Indefinite Quantity (IDIQ) contract specify those processes which the ESCO must follow to execute the annual M&V inspection. In addition, DOE Federal Energy Management Program (FEMP) guidance prescribes the responsibilities of the Government for witnessing the ESCO's annual M&V activities and reviewing its annual M&V reports.

QUESTION FROM CONGRESSMAN HULTGREN

Q2. Are there any potential downsides to the federal use of ESPCs?

a. If so, how can we improve the program to negate these weaknesses?

A2a. While there are many opportunities for the use of ESPC's, DOE must ensure that performance contracts remain high-value projects that deliver savings through extensive outreach, training and communication with stakeholders and Agencies. ESPCs are a type of contract that is different from what most Federal agencies are used to executing, and requires contracting officers to be well-trained in managing them. DOE provides several forms of assistance and project facilitation to help agencies ensure they develop ESPC projects that are technically excellent, contractually and legally sound, financially smart and that deliver results.

Another re-occurring challenge to ESPC project implementation is the time involved due to the number of discrete steps and corresponding documents/contract deliverables.

Historically, it has taken anywhere from six months to five years to execute an ESPC. In response, FEMP put together new best practices for steps in the process, including the notice of opportunity, the preliminary assessment, and the investment grade audit that should help achieve reduced cycle time and avoid duplication of efforts. This has resulted in significant progress in shortening the schedule for agencies to make ESPC awards. Currently, it typically takes about 24 months for a contract to be awarded.

FEMP is continually reviewing the DOE IDIQ contract, the FEMP-provided contract documents and templates, and ESPC training materials to identify opportunities to streamline

the process and make improvements to allow projects to be awarded as efficiently and expeditiously as possible.

QUESTION FROM CONGRESSMAN SCHWEIKERT

Q1. Do you know of any instances under an ESPC where there is a purchase buyback?

a. How often does this occur?

A1a. While the Department of Energy (DOE) does not have information on agreements between all federal sites and their utilities relating to the sale of excess energy, we do have project descriptions that include project size for most renewable energy conservation measures (ECMs) within the DOE energy savings performance contract (ESPC) program that may provide insight into this issue. In reviewing the data, almost all ESPC renewable ECMs are below 1 megawatt (MW) and while there are a few 700-900 kilowatt (kW) photovoltaic and wind ECMs, the output of each represents a small percentage of the site's overall electricity consumption.

QUESTION FROM CONGRESSMAN SCHWEIKERT

Q1. Do you know of any instances under an ESPC where there is a purchase buyback?

b. What are the circumstances for this occurring?

A1b. While the Department of Energy (DOE) does not have information on agreements between all federal sites and their utilities relating to the sale of excess energy, we do have project descriptions that include project size for most renewable energy conservation measures (ECMs) within the DOE energy savings performance contract (ESPC) program that may provide insight into this issue. In reviewing the data, almost all ESPC renewable ECMs are below 1 megawatt (MW) and while there are a few 700-900 kilowatt (kW) photovoltaic and wind ECMs, the output of each represents a small percentage of the site's overall electricity consumption.

QUESTION FROM CONGRESSMAN SCHWEIKERT

Q1. Do you know of any instances under an ESPC where there is a purchase buyback?

c. Does this effect total savings?

A1c. The Department of Energy (DOE) does not have information on agreements between all federal sites and their utilities relating to the sale of excess energy, we do have project descriptions that include project size for most renewable energy conservation measures (ECMs) within the DOE energy savings performance contract (ESPC) program that may provide insight into this issue. In reviewing the data, almost all ESPC renewable ECMs are below 1 megawatt (MW) and while there are a few 700-900 kilowatt (kW) photovoltaic and wind ECMs, the output of each represents a small percentage of the site's overall electricity consumption.

QUESTION FROM CONGRESSMAN WEBER

Q1. While executing the President's recent energy directive, which rulemakings do you expect to finalize first and how soon should we expect to see these?

A1. DOE is actively working on many rulemakings in support of the President's energy goals. These rulemakings are in various stages of development, with some further along in the process than others. The Regulatory Agenda provides a listing of the Department's regulatory activities and projected timeframes for those activities. The 2013 Spring Regulatory Agenda can be found at:

<http://resources.regulations.gov/public/custom/jsp/navigation/main.jsp>.

QUESTION FROM CONGRESSMAN PETERS

Q1. In what specific areas do the goals of energy efficiency and resiliency dovetail? Could an ESPC be used to make buildings upgrades that both save energy and increase the resiliency of building infrastructure and critical infrastructure? For example, when you think about an ESPC for a federal data center, would the improvements made also improve the data centers ability to withstand extreme weather events?

A1. It is possible that such projects would improve a structure's ability to withstand extreme weather events. Combined heat and power (CHP) projects implemented with an ESPC could also be designed to operate during utility outages caused by weather events, such as Hurricane Sandy. One example is an ESPC project at FDA's White Oaks site. Their CHP system has been able to supply electricity and heat to continue their mission during power outages. This type of resiliency application of ESPC could be considered at other federal sites in combination with other energy cost savings measures.

All payments in an ESPC must come from energy savings, including energy –related operations and maintenance. To the extent that energy conservation measures include aspects that also address resiliency, such measures could be considered in the development of an ESPC.

QUESTION FROM CONGRESSMAN PETERS

- Q2. What elements are already in place for ESPCs to incorporate resiliency goals and recommendations so that ESPCs can fully incorporate resiliency as part of the audit or proposed plan?
- A2. DOE-FEMP is currently working with the Army to develop a method of combining an ESPC with a building renovation project designed to upgrade the interior and exterior of a structure. Certain ECMs such as cool roofs, vapor barriers, and efficient windows could potentially be installed more economically if a portion of the cost was paid by the appropriated funds used to perform the building renovation. It is possible that such a project would improve a structure's ability to withstand extreme weather events.

All payments in an ESPC must come from savings in energy costs, including energy –related operations and maintenance. To the extent that energy conservation measures include aspects that also address resiliency, such measures could be considered in the development of an ESPC. The added benefit of potentially addressing resiliency is another example of how ESPC's help support the goals of the Presidents Climate Action Plan.

Responses by Dr. Woodrow Whitlow, Jr.

National Aeronautics and Space Administration
Headquarters
Washington, DC 20546-0001



August 8, 2013

Reply to Attn of: OLIA/2013-00447F:MDC

The Honorable Paul Broun
Chairman
Subcommittee on Oversight
Committee on Science, Space, and Technology
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Broun:

Enclosed are the responses to written questions submitted by you, Chairman Lummis and Representative Hultgren resulting from the June 27, 2013, hearing at which Dr. Whitlow testified regarding "*Green Buildings – An Evaluation of Energy Savings Performance Contracts.*" This material completes the information requested during that hearing.

Sincerely,

A handwritten signature in black ink that reads "L. Seth Statler". The signature is written in a cursive, flowing style.

L. Seth Statler
Associate Administrator
for Legislative and Intergovernmental Affairs

Enclosures

HOUSE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEES ON OVERSIGHT AND ENERGY

“Green Buildings – An Evaluation of Energy Savings Performance Contracts (ESPCs)”

QUESTIONS FOR THE RECORD

Dr. Woodrow Whitlow, Jr., Associate Administrator
Mission Support Directorate, National Aeronautics and Space Administration

Questions submitted by Chairman Paul Broun and Chairman Cynthia Lummis:

1. Are all NASA Centers engaged in ESPCs, and if not, why not?

Response: NASA has utilized ESPCs at six of ten Field Centers. The following Centers have not used ESPCs:

- Dryden Flight Research Center, CA – Pursued an ESPC project under a Department of Energy (DOE) ESPC master contract but cancelled the effort prior to awarding a task order due to limited resources to develop, administer, and maintain the project over the full contract term.
- Langley Research Center, VA, and Stennis Space Center, MS – Obtain benefits similar to ESPCs by using Utility Energy Services Contracts (UESCs).
- Marshall Space Flight Center, AL – Consistently implements energy conservation measures through conventional contracts.

2. Does NASA have staff trained in ESPCs or does the Agency rely on FEMP staff primarily to guide NASA employees through the ESPC process?

Response: Both. NASA has procurement and technical staff trained in ESPCs, and also utilizes assistance from Federal Financing Specialists and Project Facilitators contracted to DOE Federal Energy Management Program (FEMP) to develop task orders.

- a. Overall, has FEMP been helpful throughout the implementation and life of ESPCs? If not, how could their interactions improve?

Response: Yes, FEMP has helpfully supported NASA ESPC efforts through providing ESPC master contracts, training, assisting task order development, and monitoring project performance during the post-installation performance period.

- b. When a contract ends early, do you find that NASA staff is sufficiently trained to provide maintenance of energy efficiency improvements that have been made?

Response: Yes, in uncommon cases where NASA completed an ESPC project's loan repayment prior to the full contract term, our facilities operations and maintenance personnel were sufficiently trained to maintain systems that received ESPC energy efficiency improvements.

3. How often does NASA engage in contracts with other firms that offer energy efficiency improvements that are not included on the DOE's pre-approved list of ESCOs? Can you name a potential situation where NASA would prefer to work with an outside firm, and if so, what is the reasoning?

Response: DOE maintains a Qualified List of ESCOs; DOE competes and awards ESPC master contracts to a subset of the companies on this list. Outside of DOE's ESPC master contracts, Agencies can also directly contract for ESPCs with companies on the DOE Qualified List of ESCOs. NASA has only engaged in ESPCs through contracts with ESCOs on the DOE Qualified List of ESCOs.

Since NASA began using ESPCs in 1999, the Agency has engaged in ESPCs through four contracts outside DOE's ESPC master contracts: Two NASA contracts established in 1999 and last utilized in 2003, one United States Air Force contract including co-located NASA facilities established in 2000 and completed loan repayment in 2012, and one NASA Federally Funded Research and Development Center (FFRDC) prime contractor subcontract established in 2007 and still utilized. The first three contracts were under development while DOE developed its original ESPC master contracts. In the FFRDC example, NASA's contract with the prime contractor includes energy management requirements, and the prime contractor utilizes an ESPC subcontract as one means of fulfilling the energy management requirements.

4. What are the key advantages and limitations of ESPCs, and what suggestions do you have to improve the ESPC process – either through legislation or administrative regulation?

Response: ESPCs enable NASA to implement energy and water efficiency upgrades in funding circumstances where it could not otherwise be accomplished. A potential area for continually improving ESPCs includes requiring full transparency of all cost and revenue streams in ESCO proposals. This improvement would benefit both DOE and non-DOE ESPCs.

Questions submitted by Rep. Randy Hultgren (R-IL):

1. Has NASA experienced or noted any disadvantages when partaking in the ESPC program?

Response: Yes. Developing, administering, and maintaining ESPCs is more complex than implementing projects under conventional Federal government contracts. This complexity arises from contracting for a project with financing repaid from cost savings throughout a contract term of up to 25 years, and from measurement and verification of guaranteed cost savings throughout the contract term.

- a. If so, what have those been and how often have they occurred?

Response: Smaller NASA sites with very constrained personnel resources find it difficult to implement an ESPC project—even under DOE ESPC master contracts. The Agency has experienced a site that pursued a project under a DOE ESPC master contract but cancelled the effort prior to awarding a task order due to limited resources to develop, administer, and maintain the project over the full contract term. NASA has also experienced a site that successfully implemented an ESPC project under a DOE contract, but with the impact of ESPC coordination consuming nearly all of the site's energy management personnel resource capacity.

- b. Have these disadvantages dissipated over the years as the program has evolved?

Response: No, it remains challenging for personnel to conduct full-scale ESPC at smaller sites.

- c. How can the program be improved to eliminate such weaknesses?

Response: DOE developed ESPC ENABLE to provide a streamlined mechanism for very small sites to implement a limited selection of energy conservation measures. This could prove helpful for agencies with such needs.

Responses by Ms. Jennifer Schafer

**FEDERAL PERFORMANCE CONTRACTING COALITION
JENNIFER SCHAFFER, EXECUTIVE DIRECTOR**

RESPONSES TO QUESTIONS FOR THE RECORD

HOUSE COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY
SUBCOMMITTEES ON OVERSIGHT AND ENERGY

“Green Buildings- An Evaluation of Energy Savings Performance Contracts”

Responses to questions submitted by Chairman Paul Broun and Chairman Cynthia Lummis

Question 1) In 2009, DOE prequalified 16 ESCOs for Super ESPC Contracts of \$5 billion each. When do you think that ESCOs will reach that cap?

- a. Is this about the timeline that was expected when the 2009 contracts were formed?
- b. If one ESCO reaches the cap, will it have to wait for all other ESCOs to do the same before being able to enter into future Super ESPC contracts?

FPCC Answer: Historically, federal agency use of performance-based contracting for energy savings has varied annually. Even with the December 2011 Presidential Memorandum for energy savings which calls for \$2B of ESPC and UESC (Utility Energy Service Contracts) over two years, it is difficult to estimate the amount of contracts which could be awarded in a future year or group of years. Federal ESPC use is affected by legislative action, executive action, availability of appropriated funds, expiring contracting authority and/or issuance of a new IDIQ contract. In addition, the long cycle time (up to 24 months) can have a large impact on subsequent years. For example, according to the *DOE IDIQ ESPC Awarded Project Summary*, in FY03 approximately \$531M of ESPC was contracted by federal agencies compared to just \$63M of ESPC in FY04 due to expiring legislative authority for ESPC at the end of 2003. Once ESPC legislative authority was restored by Congress, annual awarded contracts fluctuated greatly:

- \$201M in FY05
- \$404M in FY06
- \$366M in FY07
- \$734M in FY08
- \$1.3B in FY09
- \$1.1B in FY10
- \$916M in FY11
- \$336M in FY12

The FPCC believes that increased use in years 2008 and 2009 was due partly to the expiring DOE ESPC contract at that time which resulted in agencies seeking to award task orders prior to its deadline. A new competition for contractors and award in December 2008 led to the selection of 16 qualified Energy Service Companies (ESCOs) with \$5 B of contracting authority each. Agencies were permitted, however, by the DOE Secretary to utilize the prior ESPC master contract for projects which had been developed prior to the award of the new IDIQ contract; and this in turn contributed to increased utilization of ESPC in years FY09 and FY10.

The onset of a new contract and influx of funds from the American Recovery and Reinvestment Act (ARRA)—which provided an increase in appropriated funds to federal agencies for energy conservation—negatively impacted the use of ESPCs in recent years. The utilization of ESPCs continues to be affected by the need to educate and train agency contracting officers, which takes time, and an abundance of appropriated dollars, which tend to reduce an agency's need for private sector financing.

We believe this has been reflected during recent years as there has been a downturn in the number of projects awarded under the DOE IDIQ contract. For example, approximately 23 projects were awarded in FY09, 37 in FY10, seven in FY11 and nine projects in FY12.

Because of the above, it is difficult to anticipate when each ESCO will fully contract their DOE ESPC IDIQ authority. However, it is clear that even under the most aggressive scenarios, it is unlikely that the total contracting authority for the contract of \$80 B will fully utilized. A 2011 Oak Ridge National Laboratory Study assumed that if all of the authority were to be used, it would have to include expansion of ESPCs beyond their current authorization and into new markets. Energy audits performed by the Federal government indicate approximately \$10B in opportunity over the next several years. Therefore, at this potential rate of utilization we do not expect that there is danger of reaching the limit of the existing contracting authority by the expiration of the current DOE ESPC IDIQ contract.

- a. The DOE ESPC master IDIQ contract has a period of performance of five years and has two option periods of three years each. Therefore the IDIQ contract, should DOE exercise its two options, could have a total duration of eleven years beginning on December 17, 2008 and ending on December 16, 2019. Contractors may work during this period towards contracting up to \$5B of ESPCs.
- b. Each contractor has been provided a contracting authority of \$5B under the DOE IDIQ contract. In theory and considering the function of multiple-award IDIQ type of contracts, should an ESCO fully meet its IDIQ contracting cap prior to the conclusion of the IDIQ's duration (per DOE's exercise of its two options), it would need to wait for the next competitive selection process for the next master IDIQ contract to be provided additional contracting authority.

Question 2) A 2005 GAO report raised concerns about the limited number of financiers available to ESCOs and the resulting lack of competitive financing available to agencies. What is your reaction to the concern?

- a. Is there a set group of financial institutions that invest in ESPCs? If so, who are they?
- b. Are there certain financial institutions that ESCOs would prefer to work with in comparison to others?

FPCC Answer: The FPCC believes that the matters referenced in the 2005 GAO Report have been addressed and resolved through the continued development of the ESPC program. The GAO report specifically focused on contracts federal agencies undertook in fiscal years 1999 through 2003. The FPCC believes that the federal practices for utilizing ESPC is significantly more mature since the early iterations of the program and has evolved over the past decade. Regarding the matter raised by GAO regarding a lack of competitive financing, this matter was resolved following a DOE contract modification in 2004 which required ESCOs to obtain competitive financing offers for Super ESPC delivery orders. According to an August 28, 2007, DOE news memo titled "*Lower Interest Rates Reduce Average Super ESPC Payments by Agencies*" this requirement resulted in lenders' premiums on ESPC projects dropping significantly. DOE reports that during FY1998 through FY 2004 interest rates averaged 7.63 percent, and following the implementation of competitive financing from FY2005-April 2007,

interest rates averaged 5.96 percent. The FPCC has included as an attachment to this submission the referenced 2007 DOE FEMP review of implementing competitive financing.

Today, the current DOE IDIQ contract for federal ESPCs includes in its recitals, Section H.7 titled "Requirements for Competitive Financing Acquisition for Task Orders" which requires within Section H.7.2 A. that the contractor shall "solicit and select financing offers through a competitive selection process." The FPCC has included as an attachment to this submission page 47 of the ESPC IDIQ Contract which outlines such competitive financing requirements.

a. Yes, there are several companies currently active in originating the financing of Energy Savings Performance Contracts. They include, among others:

- Banc of America Public Capital Corp.
- Bostonia Partners LLC
- Dominion Federal
- FSM Leasing
- Green Campus Partners
- Hannon Armstrong Sustainable Infrastructure Capital, Inc.
- United Financial of Illinois, Inc.

Many of these companies also specialize in placing ESPC financing opportunities with institutional lenders such as insurance companies and large money center banks. Banc of America and Hannon Armstrong both originate and invest in ESPCs. It is our understanding that the predominant lenders to ESPCs are insurance companies as they typically lend for longer financing terms compared to banks. ESPCs are by design longer-term contracts which may extend up to 25 years.

As current Federal ESPC contracts require ESCOs to competitively solicit financing proposals from multiple financial institutions and to submit a Selection Memorandum to the Contracting Officer (CO) detailing the bids and the rationale for the ESCO's lender selection, it is the FPCC's understanding that ESCOs, with customer approval, base their selection on the lender who provides the best overall value to the project.

Question 3) Are contract re-negotiations restricted by contract language? For example, if an ESPC is bundled and sold to a secondary source, could an agency potentially lose the ability to renegotiate to take advantage of a lower interest rate?

a. Would FPCC support a modification to the program to allow ESPC re-negotiations for lower interest rates at any and all times?

FPCC Answer: When considering the refinancing or re-negotiation of an ESPC, it is important to recognize that the financing arrangement of an ESPC is between the ESCO and a third-party lender, and that for financing *the Government is not a contractual party*. Although a renegotiation could occur between the ESCO and its financier, a federal agency may not direct an ESCO to refinance or modify the ESCO's debt agreement without the consenting agreement of its financier. Agencies are encouraged to explore the potential for refinancing, and ESCOs have taken the initiative to work with their lenders to provide opportunities for refinancing when it is feasible. In cases where it is contractually feasible, this could benefit the Government client, provide opportunities to reduce the contract payment term, and/or provide needed additional energy conservation measures.

In addition, contract re-negotiations can be restricted by contract terms and conditions between the Energy Services Companies (ESCOs) and their lenders. Pursuant to the Assignment of Claims Act of 1940, and as prescribed in the Federal Acquisition Regulation (FAR) Subpart 32.8—Assignment of Claims, whereby, a contractor may assign monies due, or to become due under a contract, to a bank, trust company, or other financing institution. Per the Assignment of Claims, ESPCs are financed by the contractor (ESCO) assigning to a third party lender its rights to receive the Government's payments. Once the payments are assigned to a lender, the contractor gives up its rights to such payments. Typically, ESCOs are required to get their lender's prior written consent for any renegotiations that would alter the amount or timing of the government's payments under an ESPC, but are permitted to re-negotiate scope, administrative, or technical matters that won't impact the Government's payments without their lender's consent. Given that these contracts have a third-party financing component, and given that those agreements are pursuant to the Assignment of Claims Act, the financiers reserve the ability with these financing agreements—as with many financial instruments—to offer secondary investment opportunities in whole or in part. These general financial practices may affect a financial instrument's ability to be refinanced.

The U.S. Department of Energy, Federal Energy Management Program (FEMP) has issued official guidance regarding refinancing of ESPCs, titled "*Guidance Regarding Refinancing, Restructuring, or Modifying Loan Agreements Entered into by an Energy Services Company Under a Federal Energy Savings Performance Contract*". It further clarifies that refinancing is not a straightforward undertaking and that the contractual relationship for financing is between the ESCO and the financial institution. The FPCC would suggest a discussion with one or more financiers for additional information. .

- a. Regarding whether the FPCC would support a modification to the program (i.e. contract) to allow ESPC renegotiation for lower rates at any and all times, the FPCC hopes that after the Committee has reviewed the unique nature of financing these types of projects as outlined in this submission, that the Committee will share in our view that such a modification to the ESPC program is not favorable.

The FPCC believes that such a restriction on a lender to provide refinancing at any and all times during the life of the contract would actually result in fewer investors and lenders interested in financing these types of contracts, and/or much higher rates due to the additional risk to the financial institution. This would dissuade financing for ESPCs and ultimately result in less competitive financing (because of the availability of fewer lenders). ESPC investors value the long-term fixed-price repayment nature of these types of projects and their associated energy savings guarantee. We believe that such a requirement to require refinancing at any and all times during the life of the contract alters the inherent attributes which currently attract third-party lenders to ESPCs.

The FPCC believes this would also result in financiers offering shorter financing terms and that this would result in less comprehensive projects. For some projects, it would affect their viability all together as ESPCs rely on long-term amortization of annual energy savings to pay back the capital investment. Additionally, the FPCC believes that such a requirement would, because of the risk, immediately result in lenders proposing higher upfront financing costs to the Government.

Question 4) What is the FPCC's position on the 2007 law requiring an end to fossil fuel use in federal buildings by 2030? How much, if at all, does this affect your member companies, particularly for those who may be in contracts with the government that expire after 2030?

FPCC Answer: Regarding the referenced section, the FPCC is specifically concerned by the part of Section 433 of EISA pertaining to major renovations of existing federal buildings. The FPCC does not take a position on the requirements regarding the design of new buildings. As enacted, this Section requires that if a building undergoes a major renovation which exceeds \$2.5M, the building will need to achieve the same fossil-fuel reductions as set forth in the Section for new buildings.

The FPCC believes that the \$2.5M threshold would be dissuade building and energy managers from implementing an energy efficiency retrofit, as a comprehensive retrofit would in most cases exceed \$2.5M. An ESPC financing vehicle alone is not designed to be able to fully enable a building to achieve these requirements under Section 433. There are certain restrictions regarding on-site generation of energy, and given the cash flow requirements of financing an ESPC (considering ESPCs have to generate energy savings) it is unlikely an ESPC could afford to finance the type of on-site renewable energy which would be required to support the Section's requirements if it were triggered by implementing an ESPC.

Therefore, the FPCC is concerned that this Section may prevent an agency from seeking to do energy efficiency work on specific buildings or within a group of buildings (as ESPCs typically bundle work within multiple buildings) if they cannot meet the 433 mandate. Additionally, given that cost is not deemed a prevailing factor for agencies to opt-out of the Section's requirements if triggered, the FPCC believes in today's constrained budget environment that building and energy managers may forego needed improvements within existing buildings to avoid triggering the new requirements. The FPCC also believes the Section would remove an agency's ability to install highly-efficient Combined Heat and Power (CHP) systems or other high efficiency natural gas equipment. Several FPCC member ESCOs have installed such systems throughout the federal government and have yielded significant energy reductions. Therefore, the FPCC believes this Section if implemented as it pertains to existing federal buildings has the potential to discourage deploying energy efficiency improvements in existing buildings.

Question 5) On one hand, your testimony states that since 2007, with energy audits conducted of half of all federal facilities, approximately \$9 billion worth of energy conservation measures have been identified with relatively short payback times. On the other hand, you imply federal agencies may fall short of meeting the President's goal from a 2011 memo of entering into \$2 billion worth of performance contracts by the end of 2013. What are some of the challenges facing agencies in their attempts to meet the President's target?

FPCC Answer: The FPCC commends the White House and Congressional advocates for supporting the 2011 Presidential Memo requiring agencies to enter into \$2B of performance-based contracts for energy savings in two years. This commitment has reinvigorated agency utilization of ESPC. The FPCC believes that even if the target is not fully met by its deadline, the program has been a successful and commendable initiative across the federal government. Prior to such a directive, agencies have not been required through legislative or Administrative action to achieve a certain benchmark regarding utilization of ESPC.

The FPCC believes that broader programmatic challenges still face agencies, primarily related to project award cycle time and varying interpretations of ESPC-related statutes by different agencies. ESPCs by nature vary greatly from traditional types of procurements for goods and services, and take a longer time to develop and procure. Some agencies require multiple types of internal approvals and additional processes outside of the DOE IDIQ requirements, and this typically results in excessive delays which could cause an ESPC to be delayed in excess of 6-12 months. In this case, it may take an agency between 24-36 months to identify, develop, award and start construction on an ESPC.

For this reason, the White House has worked closely with the Office of Management and Budget (OMB) and the Department of Energy Federal Energy Management Program (FEMP) to monitor agencies' progress towards meeting their individual commitments for the President's goal. Still, some agencies

approach the ESPC contracting process and timeline differently. This affects the project award cycle time from the period of the Notice of Opportunity (NOO) to the Task Order (TO) award, and varying interpretations of the needed process can cause excessive delays. Excessive delays can jeopardize an agency's ability to take advantage of lower interest rates and ultimately cause an agency to unnecessarily continue to pay more for their energy and water each day an ESPC is delayed.

Currently, FEMP is examining ways in which it can help agencies streamline this process and reduce the project cycle time across agencies. We are also working to try to get agencies that have not been heavily engaged in ESPCs to step up. The FPCC is hopeful that projects identified and started under the 2011 memorandum which do not meet the deadline at the end of this year, will continue through the development cycle to be awarded in 2014. Regarding the energy conservation measures identified through energy audits since 2007, the FPCC believes there are an abundance of measures which can still be implemented through ESPCs. This is why the FPCC has been advocating for Congress or the White House to legislate or issue a second type of performance contracting goal so that agencies will continue seeking to utilize ESPCs and UESCs.

Question 6) One of your suggestions in your written testimony to improve the ESPC process is for clarification from the Administration on "what is allowable under an ESPC." Will you provide some examples of what are and are not allowable under an ESPC?

- a. Are there any other ways that you can think of to improve the current ESPC process?

FPCC Answer: In recent years, it has come to the FPCC's attention that there are varying interpretations across federal agencies of the types of energy conservation measures allowable under an ESPC. While the FPCC believes that the ESPC authorizing statute, legislative language, and identified permissible ECMs within the IDIQ master contract, some agencies or departments may question the applicability of a particular ECM. The FPCC believes this may be attributable in large part to the rotation and turnover of federal professionals throughout the government, as new individuals may have varying interpretations of existing statute or processes for ESPCs compared to their prior government counterpart in that same position.

The Congress has the ability to clarify what is allowable under an ESPC; however, the Congressional Budget Office will provide a score for any legislation that might increase the use of this private sector funding mechanism. Regarding what is allowable, various agencies, OMB and/or others have questioned the ability to do Federal data center consolidations under an ESPC even though the implement regulations and statute would indicate allowability. Renewable energy is accepted by some agencies and not others, although there is a DOE memo that clearly allows renewables under an ESPC. The Energy Independence and Security Act section 515 allowed the transfer of energy generated on site to others but this has not been allowable under an EPSC. Often, what is and is not allowable under an ESPC is simply left to the discretion of legal counsels, contracting personnel, and in some cases, personal opinions.

Responses to questions submitted by Rep. Scott Peters (D-CA)

Question 1) In what specific areas do the goals of energy efficiency and resiliency dovetail? Could an ESPC be used to make building upgrades that both save energy and increase the resiliency of building infrastructure and critical infrastructure? For example, when you think about an ESPC for a federal data center, would the improvements made also improve the data center's ability to withstand extreme weather events?

FPCC Answer: ESPCs do represent an opportunity to integrate energy efficiency and resiliency in projects that streamline and modernize facility energy and even IT infrastructure.. Older equipment is vulnerable to extreme weather events, especially if it is not adequately protected. Fault-protection from extreme-weather events is not unique to an ESPC, but Agencies seeking to improve the resiliency of their critical infrastructure can manage the ESPC project development process in a manner that serves the purposes disaster recovery and continuity of operations (COOP) planning. Resiliency is built into the project development process of any ESPC that involves mission critical infrastructure, and is a substantial benefit of projects that have included technologies such as efficient backup power, on-site renewable power generation, combined heat and power systems etc.

Question 2) What elements are already in place for ESPCs to incorporate resiliency goals and recommendations so that ESPCs can fully incorporate resiliency as part of the audit or proposed plan?

FPCC Answer: For any ESPC, it is important for the government to communicate its project objectives of any end-state solution at the beginning of project development and then partner together with the selected ESCO to customize any proposed improvements in a manner that both reduces energy consumption and serves the key environmental and mission priorities of the Agency, to include resiliency and energy security.

In addition to the actual infrastructure improvements directly related to supporting the resiliency and reliability of building systems, it is import to note that unlike appropriated projects, the ESPC program requires the provision of critical services such as measurement and verification and operations and maintenance, to ensure proper system operation and long term care of the installed systems. By verifying system efficiencies and realized savings, as well as providing long term operations, maintenance, repair and replacement, the ESPC program guarantees that improvements designed to protect critical building systems will remain in good working order throughout the contract term and beyond. All costs associated with these services are paid from the savings generated by the project, reducing the need for additional budgeted expenses.

Responses by Mr. Ron King

HOUSE COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY
SUBCOMMITTEES ON OVERSIGHT AND ENERGY

“Green Buildings – An Evaluation of Energy Savings Performance Contracts”

QUESTIONS FOR THE RECORD

Answers: Submitted by Ronald (Ron) L. King, President Advisor, National Insulation Association.

Questions submitted by Chairman Paul Broun and Chairwoman Cynthia Lummis

- 1) How often is mechanical insulation used as an energy efficient improvement within ESPCs? Do you find this to be sufficient? If not, why do you believe this technology is not further utilized?

ESPC projects can be, and usually are, comprehensive and employ a wide array of cost-effective measures to achieve energy savings. These measures often include high-profile energy efficiency measures such as high-efficiency lighting, high-efficiency heating and air conditioning, efficient motors and variable speed drives, and centralized energy management systems. Mechanical insulation and potentially other less known energy efficiency initiatives may or may not be included. Unfortunately, we have found that mechanical insulation is easily and often overlooked.

Upgrading, replacing, or repairing mechanical insulation is in most cases determined by the scope of the ESPC project. Because mechanical insulation is located on piping and ducts that are often in walls or above ceilings, it is normally not considered due to ease of accessibility. Replacing missing or damaged accessible mechanical insulation may or may not be considered depending upon the approach utilized by the Energy Service Company (ESCO).

Mechanical insulation typically yields a return on investment ranging from a few months to less than 7 years. Because of the significant and proven return on investment, mechanical insulation is well suited to be an integral part of energy service contracts and the resulting holistic savings verification. Mechanical insulation adds value in achieving the projected energy savings, return on investment expectations, emission reduction, and other high-performance objectives. Mechanical insulation should be considered on every ESCO project.

- 2) Is mechanical insulation included in most building codes standards and are those standards being enforced?

Unfortunately, the benefits of mechanical insulation are often overlooked by all key stakeholders during new construction, retrofitting, and maintenance opportunities. While most building codes do include mechanical insulation based upon ASHRAE, or other reference standards, the benefits of this technology are reduced because most of those standards include only minimum requirements and those stated minimums are seldom exceeded. Maintenance is also often neglected and not accomplished in a timely and proper manner.

Building codes from a technical thermal perspective are in large part believed to be enforced, but there are hundreds, if not thousands, of examples where a lack of understanding and resources leads to mechanical insulation system specifications being modified incorrectly and/or not being installed by experienced contractors. Thus, compliance and enforcement is a major concern.

Other concerns include the length of time it takes new standards or codes to be implemented and enforced in new construction, old or new codes being followed or enforced in retrofit projects, and the lack of concern for replacing missing or damaged mechanical insulation that conforms to the original or any new code requirement.

Improved mechanical insulation codes and enforcement present an opportunity for energy efficiency and emission reduction that should be priority at all levels of government.

- 3) Can you explain the term “Energy – Water Nexus” in the context of what role mechanical insulation can have in it?
- a. Is there a role for Congress to be involved in this issue either through ESPCs or other legislative avenues?

Hot water delivery systems routinely use thermal insulation (pipe insulation) to maintain the temperature of the water as it travels from the source (the hot water heater) to the destination (the faucet at the sink). All current energy codes and standards require some degree of thermal insulation on potable hot water piping. However, the requirements between codes vary and except for the newer “green” codes, most requirements are normally considered minimum levels.

Existing research has not considered the value of water when making the business case for putting additional pipe insulation on hot water piping, increasing the thickness of insulation, or identifying a scope of work for insulation installation. While studies have looked at energy efficiency, they have not addressed the short-term economics, which depend on frequency, duration, and pattern of usage, and remain the overriding consideration for most building owners.

Thermal insulation for mechanical systems is a simple and cost-effective technology for reducing heat losses and gains in building systems and manufacturing processes. As energy codes, standards and associated regulations—both prescriptive and holistic—become more stringent, and building owners, operators, and tenants strive for higher performing and more sustainable buildings, designers and owners should focus on how and where to use more, not less, insulation.

Initial studies and analysis demonstrate that pipe insulation reduces the amount of time it takes to get the correct temperature water to the end user, thereby conserving water resources and, in hot water delivery systems, saving energy. Planning for, and installing, proper thermal insulation systems at the time of construction is significantly easier and more cost effective than retrofitting or upgrading the insulation systems later. Therefore, when facilities are renovating or repairing facilities, building owners should not overlook the opportunity to upgrade pipe insulation, and other insulation systems should not be overlooked. Efforts to reduce thermal insulation levels to minimize up-front costs significantly diminish the ability to achieve long-term performance of building systems.

The National Institute of Building Science's (NIBS) Consultative Council recommends the federal government, with support and expertise from the building industry, conduct a study to determine how the use of thermal insulation on potable and other hot water delivery systems impacts both energy and water use, and examine the business case and return on investment of that opportunity.

With shortages in water and energy anticipated in the near future, and both resources escalating in cost, combined with the long service life of hot water piping systems and the relatively minor incremental cost of insulation, the potential impact achieved by increasing insulation can be substantial and immediate. Before regulators, code officials, designers, owners, and others will consider the advantage of expanding the scope of pipe insulation, researchers must determine, beyond that of small examples,

the impact that increased insulation would have on energy efficiency, water conservation, and the business case.

4) Can the savings generated by mechanical insulation be verified?

Mechanical insulation opportunities can be easily identified, with potential energy savings and emissions reduction determined with proven DOE-utilized software technology: 3EPlus[®], developed by the National Insulation Manufacturers Association (NAIMA). For facility owners and operators, the savings are swift and sustainable, and the return on investment from mechanical insulation in building applications is typically less than 4 years (and sometimes as little as 6 months).

In addition, as part of efforts by the Department of Energy's (DOE) Advanced Manufacturing Office (AMO) to improve the energy efficiency of the U.S. industrial and commercial sectors, the National Insulation Association (NIA), in conjunction with its alliance partners, developed a series of "Simple Calculators." The calculators provide the user with instantaneous information on a variety of mechanical insulation applications in the industrial-manufacturing and commercial markets.

The calculators are online and housed at the National Institute of Building Sciences Mechanical Insulation Design Guide (MIDG), www.wbdg.org/midg, or can be linked from NIA's website, www.insulation.org. They are fast, free, and functional. These tools make it easy to discover energy savings, financial returns, and other information about the design of mechanical insulation systems for above or below ambient applications.

NIA and its members are committed to working with Congress, the Department of Energy and other federal agencies, and key stakeholder groups to bring together a coalition to help develop, implement, and provide mechanical insulation educational awareness programs. Congress could help lead the way in the formation of this coalition which could be funded in partnership with industry and Congress.

Listed below are available resources that will provide additional information on the many benefits of mechanical insulation. All of these resources can be found directly or via links on the NIA website, www.insulation.org.

- National Insulation Association, www.insulation.org
- National Institute of Building Sciences, Mechanical Insulation Design Guide (MIDG), www.wbdg.org/midg
- Midwest Insulation Contractors Association, National Commercial & Industrial Insulation Standards Manual, www.micainsulation.org

- E-Learning Modules—DOE National Training & Education Resource, www.nerlearning.org,
 - Simple Energy Calculators can be found at the Department of Energy's Industrial Technologies Program's Software Tools website, www1.eere.energy.gov/industry/bestpractices/software.html
- 5) In your testimony, you mentioned a mechanical insulation assessment in the State of Montana. Would a federal building mechanical insulation assessment be feasible, and what experience do you have with such assessments for federal buildings?

Completing an assessment of mechanical insulation in any building, regardless of ownership or occupancy, is feasible and recommended. The Montana assessment is one example of many our members have completed in government and private buildings and facilities.

The National Insulation Association (NIA) is committed to educating industry and promoting the benefits of mechanical insulation. One effective approach is establishing public-private partnerships to provide public education and awareness regarding the benefits of mechanical insulation through pilot program assessments.

The purpose of such a program is to determine and communicate the energy efficiency, emission reduction, and return on investment opportunities available in federal buildings with the repair, replacement, and/or maintenance of mechanical insulation systems on specific mechanical systems within the respective facilities covered in the scope of the assessment. This can be accomplished through an assessment of mechanical insulation in a sampling of mechanical systems in the respective facilities.

NIA would be interested in exploring this type of pilot program concept with any of the Federal agencies.

Questions submitted by Rep. Randy Hultgren (R-IL)

1. Have mechanical insulation companies experienced or noted any disadvantages when partaking in the ESPC program?
 - a. If so, what have those been and how often have they occurred?
 - b. Have these disadvantages dissipated over the years as the program has evolved?
 - c. How can the program be improved to eliminate such weaknesses?

We have not noted any specific disadvantages other than not always being considered. As addressed in one of Chairman Broun and Chairwoman Lummis's questions, ESCO projects can be comprehensive and employ a wide array of cost-effective measures to achieve energy savings. High-profile energy efficiency measures such as high-efficiency lighting, high-efficiency heating and air conditioning, efficient motors and variable speed drives, and centralized energy management systems are normally included, whereas mechanical insulation may or may not be included. Unfortunately, we have found that mechanical insulation is frequently overlooked.

This oversight may have improved slightly over the last few years but mechanical insulation remains the "Rodney Dangerfield" of energy efficiency initiatives. It does not receive the respect it should for the return on investment yielded. Mechanical insulation should be considered and be an integral part of energy service performance contracts and the resulting holistic savings verification process. Mechanical insulation adds value in achieving the projected energy savings, return on investment expectations, emission reduction, and other high-performance objectives.

Respectively submitted,

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July 25,2013

Appendix II

ADDITIONAL MATERIAL FOR THE RECORD

SUBMITTED LETTER FOR THE RECORD BY REPRESENTATIVE ERIC SWALWELL

June 14, 2013

The President
The White House
Washington, DC 20500

Dear Mr. President:

We applaud the Administration for the success of the Better Buildings Initiative, particularly the focus on the federal government meeting aggressive energy reduction targets. The 2011 Presidential Memorandum directing agencies to use \$2 billion of private-sector financing and expertise to make efficiency upgrades over a two-year period has led to a substantial increase in federal projects carried out by private-sector entities using energy savings performance contracts and utility energy service contracts. This commitment will result in both taxpayer savings as agencies spend less on their utility bills as well as contributing to a significant reduction in energy utilization.

As the original two year time frame of the federal building initiative draws to a conclusion, we ask that you affirmatively act to extend and strengthen the goal for energy savings by the federal government. There is still significant opportunity for achieving more savings, and the success of the past two years' effort has created important momentum that should not be wasted. Audits completed by federal agencies have identified more than \$9 billion in addressable energy conservation measures with reasonable payback periods. If institutionalized, the success of the current two year initiative could result in a sustained reduction in federal energy costs plus significant modernization of federal infrastructure with minimal use of taxpayer dollars.

In order to fully capture this opportunity, we respectfully request a new Presidential initiative setting a goal of \$1 billion a year for the next five years in federal agency energy savings using performance-based contracting. In addition to setting an aggressive new goal, we hope the Administration also establishes new policies that capture best practices identified from the current two year initiative that can be uniformly adopted by federal agencies to create a consistent, timely and executable process for meeting the goal. Finally, we recommend that the Administration encourage comprehensive projects that will enhance energy security.

Again, thank you for taking bold action to make energy efficiency a cornerstone of your governing legacy.

Sincerely,



