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FEDERAL LEADERSHIP BY EXAMPLE IN ENERGY CONSERVATION - NO COST QUICK AND EASY STEPS FOR IMMEDIATE RESULTS

(110–62)

HEARING

BEFORE THE

SUBCOMMITTEE ON
ECONOMIC DEVELOPMENT, PUBLIC BUILDINGS AND
EMERGENCY MANAGEMENT

OF THE

COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

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July 18, 2007

SUMMARY OF SUBJECT MATTER

TO: Members of the Subcommittee on Economic Development, Public Buildings, and Emergency Management

FROM: Subcommittee on Economic Development, Public Buildings, and Emergency Management Staff

SUBJECT: Federal Leadership by Example on Energy Conservation - No Cost Quick and Easy Steps for Immediate Results.

PURPOSE OF THE HEARING

On Thursday, July 19, 2007, at 10:00 a.m. in room 2167 Rayburn House Office Building, the Subcommittee on Economic Development, Public Buildings, and Emergency Management will review the practices and procedures used by the General Services Administration (GSA) and the Department of Defense (DOD) to encourage and incentivize their tenants and building managers to identify and engage in common sense practical energy conservation activities.

BACKGROUND

The GSA and DOD both handle extensive real estate portfolios. GSA owns approximately 1,500 buildings which includes about 175 million square feet of space of general purpose office space and warehouse facilities. Further, the agency controls through leases approximately 7,100 buildings which includes 176 millions square feet of space. The functional replacement value of the GSA portfolio is about $41.7 billion. GSA's utility costs were [to be supplied]

The DOD has a similarly impressive portfolio in all 50 states, and 40 foreign countries. DOD occupies about 345,000 buildings throughout the world, valued at about $423 billion. The portfolio is about 2.4 billion square feet. Their facilities include hospitals, family housing, troop housing and mess facilities, community facilities, maintenance and production facilities, and operation and training facilities. The estimated replacement value of the DOD portfolio is approximately $653 billion. In fiscal year 2006 the DOD paid $3.2 billion in utility bills.

Ongoing Energy Concerns

Both these federal agencies have an impact not only on the real estate industry but also on the energy industry through the consumption of energy in federal facilities. Energy efficiency and conservation go a long way to promoting a healthy environment and to protecting our limited natural resources. The federal approach to such ideas as heating and cooling, use of solar panels, cold-climate windows, warm-climate windows, landscaping, weatherization, compact fluorescent bulbs, use of energy star products, and out door lighting impact consumption of energy. Simple actions such as turning off fluorescent lights, use task lighting where ever possible, turn off decorative lighting, turn off printers, monitors, and computers all have a positive impact on energy consumption. Ensuring federal employees are aware of energy conservation measures through training and other informal measures. The Subcommittee will examine such employee training by both GSA and DOD as well as review guidance issued to building managers regarding energy efficiency and conservation.

PRIOR LEGISLATIVE AND OVERSIGHT ACTIVITY

The Subcommittee has not held legislative hearings specifically dedicated to energy conservation and efficiency. However, on Friday, May 11, 2007, and Wednesday May 16, 2007, the Committee held two days of hearings on climate change and programs under the Committee's jurisdiction. Incorporated in these hearings were extensive discussions on energy conservation and efficiency. On an annual basis the Committee authorizes appropriations for the GSA's energy program.

WITNESSES

The Honorable Daniel Lipinski
Congressman
Illinois, District 3

Mr. David L. Winstead
Commissioner
U.S. General Services Administration

The Honorable Phil W. Grone
Deputy Undersecretary of Defense (Installations & Environment)
Department of Defense

Ms. Brenna S. Walraven, RPA, CPM
Chairman-Elect
Building Owners and Managers Association International

HEARING ON FEDERAL LEADERSHIP BY EXAMPLE ON ENERGY CONSERVATION: NO COST QUICK AND EASY STEPS FOR IMMEDIATE RESULTS

Thursday, July 19, 2007

HOUSE OF REPRESENTATIVES,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
SUBCOMMITTEE ON ECONOMIC DEVELOPMENT, PUBLIC BUILDINGS AND EMERGENCY MANAGEMENT,
Washington, DC.

The Subcommittee met, pursuant to call, at 10:10 a.m., in Room 2167, Rayburn House Office Building, the Honorable Eleanor Holmes Norton [Chairman of the Subcommittee] presiding.

Ms. NORTON. The Subcommittee will come to order.

You will notice I delayed starting the Subcommittee hearing until we let the sunlight in. This is a Subcommittee hearing on energy conservation. It is focusing on ways to conserve before our very eyes.

Before our eyes is the natural sunlight except that in every Committee room in the House of Representatives, we block out the sun and depend upon these lights. I have asked that these lights be turned down and that we rely on natural sunlight to the extent possible.

I am also seeking to experiment to see whether the camera which records our hearings can see with the natural sunlight, the way we do when we watch television. We sit in our offices and watch television. I don't see anybody turning off the lights. Television comes into our house, and it doesn't say we can't record you unless you turn out the sunlight. In fact, they tell us sometimes to come out into the sunlight.

We are trying to begin by practicing what we preach, particularly since this is a hearing on Federal Leadership by Example on Energy Conservation: No Cost Quick and Easy Steps for Immediate Results.

I am pleased to welcome our panel and others who are here today for this first in a series of hearings that could be entitled Greening the Federal Sector. We have selected a somewhat more serious and descriptive title that I have just indicated.

The title reflects our impatience with this Country's pace in confronting the national and international energy crisis that is proceeding at a breathtaking pace while the world stares with open mouths. Yet, we already know of uncomplicated ways to proceed that will cost little or nothing while producing big dividends in en-

ergy savings including gas, electricity, oil, air conditioning, water and all the rest. We begin a more aggressive pursuit of these methods today.

According to a September, 2006, Department of Energy report, the public and private building sector together account for an amazing 39 percent of total U.S. energy consumption, more than both the transportation and industry sectors.

Even more surprising, public and private sector buildings like those under our Committee-Subcommittee jurisdiction are responsible for 71 percent of U.S. electricity consumption. These buildings in the United States alone account for 9.8 percent of carbon dioxide emissions worldwide.

U.S. buildings are responsible for nearly the same amount of carbon emissions as all sectors of the economies of Japan, France and the United Kingdom combined. The Federal Government is the world's single largest energy consumer and the more prolific in wasting energy in the world today.

Yet, for years, our Government has pursued and achieved energy savings that demonstrate that we are capable of moving with far greater results. Primary energy use by the Federal Government, for example, fell by 13 percent during the past 20 years with a 25 percent decrease in energy costs in real terms despite a 27 percent increase in fuel prices in the U.S. in 2005. We will learn today how these results were achieved and how to build on them.

The first obligation of Congress in achieving energy savings is not big spending on energy technology but moving in earnest to conservation measures, many of which exist on paper right now, on Federal paper right now, and providing the appropriate incentives and authority to enforce these measures. Both common sense and Federal budget constraints require a focus first on energy conservation methods at home where we live, where we work.

This Subcommittee has jurisdiction over General Services Administration activities and programs as the property manager for the Federal Government.

GSA itself owns 1,500 Federal buildings comprising over 175 million square feet of space. The Agency leases another 7,100 buildings with a total rentable area of over 176 million square feet of space. Because GSA is a leaseholder for the vast majority of office space controlled by the Federal Government, that Agency also can play a pivotal in energy conservation for the private sector as well.

The Department of Defense also owns and manages a huge portfolio of real estate assets including military housing, military bases, maintenance and operation centers, community facilities, hospitals, troop mess and housing facilities and on and on.

DOD real estate assets amount to just over 2 billion square feet of space with a replacement value of $653 billion.

Although our Subcommittee does not have jurisdiction over DOD facilities, we hope that what we develop in no and low cost energy savings ideas and methods of enforcement will help upgrade DOD approaches and implementation as well.

Federal energy savings between 1983 and 2005 demonstrated that the Federal Government is moving in the right direction. The most important need today is to quicken the pace of conservation and savings and put teeth in what is being done. Executive Order

13423 already requires a 3 percent reduction in energy use intensity annually and a 2 percent annual water reduction intensity. There is evidence that these and other targets are being met, but there is little infrastructure, authority and accountability.

Most of the Federal opportunities for energy conservation and savings are familiar and small, but together they have large potential in the hands of a major real estate owner and manager like the Federal Government: turning off non-essential lights in office space after certain hours, powering down printers, computers and copy machines, avoiding running large machines during peak hours, buying ENERGY STAR products and fluorescent light bulbs and many, many other easy energy saving steps. These simple no cost or inexpensive measures provide immediate savings with little or no added capital cost.

Some States have taken admirable leadership in energy conservation policy. Utah's Energy Savings in State Buildings Act requires the Utah Division of Facilities, Construction and Management to develop incentives to encourage State entities to conserve energy and reduce energy costs.

Virginia requires agencies to pursue energy savings activities whose costs are recoverable in one fiscal year.

Among Nevada's most interesting energy approaches is the requirement to implement short term measures that require only consistent procedural changes and daily habit modification and another requiring short term measures which can be implemented by State agencies within the present fiscal year to reduce or limit energy usage and plan for energy conservation without new legislation and within existing budget constraints.

To do our part as perhaps the largest office space holder in the world and to become a leader in the field of office space energy conservation, we will need to codify what precisely is expected of agencies and of personnel who will be held responsible.

In addition, for the first time, we who serve on this Subcommittee will have a formidable responsibility ourselves to engage in rigorous oversight of energy use and conservation in the Federal sector as if our lives depended on it. As a matter of fact, the life of the planet does.

I am pleased now to hear from our Ranking Member in substitution but please to have her in fact, Mrs. Capito.

Mrs. CAPITO. Thank you. Thank you, Madam Chair, for holding today's hearing on energy conservation, and I appreciate the opportunity to hear witnesses talk about simple, yet effective, steps we can take to reduce our energy usage and reduce taxpayer dollars.

I would like to welcome our colleague and our Committee Member, Mr. Dan Lipinski. I know you have a strong interest in this matter, and I look forward to hearing your statement.

We will also be hearing from some other experts who can help us find those quick, cost-free and efficient ways to save energy in all of our Government buildings.

To put this in perspective, I think the Chairwoman has alluded to many of the statistics, but the buildings in this Country consume—I didn't realize this—40 percent of the total energy in the United States and 70 percent of the electricity. We will hear about

how even small reductions in the energy consumed by these buildings can have a large cumulative effect.

You mentioned turning out the lights at night. It does always amaze me, being brought up in a house where you were supposed to turn the light out of every room every time you leave, and when you leave at night these buildings many times are lit up. You can even see the TVs going in the windows, and the lights are on as well. I think we need to all be cognizant of at what cost we are doing this.

I hope our witnesses can discuss how these initiatives can be combined with comprehensive energy savings strategies for specific buildings and building complexes. GSA, in particular, its mission is to help its client agencies meet their environmental obligations. GSA has made significant investments in energy saving solutions and has achieved a 30 percent reduction in energy consumption by the Energy Policy Act of 1992.

In the past, GSA was eager to demonstrate energy conservation and acquired the services of Pepco Energy Services to serve as a general contractor and project manager of the GSA's new photovoltaic system. This solar generating electricity provides power for the central cooling plant at the Suitland Federal Center. I hope we can hear a little bit more about that.

The Defense Department has also sought Pepco's advice when it had to cut greenhouse emissions by 30 percent in the military district of Washington. The DOD was advised to change lighting fixtures, install cold climate windows and retrofit the cooling system among other things. These small but important changes amounted to over 200 million in energy savings over the contract term.

I hope our witnesses will address the comprehensive energy savings procedures and, with their advice, one day we hope to be able to obtain a cleaner and more efficient Federal Government.

I look forward to hearing from our witnesses and thank you again, Madam Chair, for this hearing.

Ms. NORTON. Thank you, Mrs. Capito.

Mr. Arcuri, do you have an opening statement?

Mr. ARCURI. No ma'am.

Ms. NORTON. We are going to go to our first witness, and we are pleased to welcome Congressman Lipinski, especially pleased since he earlier came forward with a bill which we have already incorporated in the pending bill from this Committee on energy.

I am pleased to welcome you here and hear your testimony, Mr. Lipinski.

TESTIMONY OF THE HONORABLE DAN LIPINSKI, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. LIPINSKI. Thank you, Madam Chairwoman, and thank you for letting the light in.

I said earlier when we had a hearing, and you had mentioned about how we have these curtains blocking all the light, that it took me a while before I even knew that there were windows behind these curtains in a lot of these Committee rooms. Thank you for doing that.

Chairwoman Norton, Mrs. Capito, Mr. Arcuri, today, Americans are rightly concerned about the impact of foreign energy depend-

ence on our national security and the effects of global climate change on the planet. I applaud Chairwoman Norton for holding this hearing because I firmly believe that the Government must lead by example, but when it comes to energy conservation, the Federal Government because of its size also has a significant direct impact on energy usage and the environment.

That is why earlier this year, my colleague, Bob Inglis and I introduced the Bulb Replacement in Government with High Efficiency Technology Energy Savings Act known as the BRIGHT Energy Savings Act. This bill will help us to address both environmental and energy issues by cutting down significantly on energy usage and emissions of global warming gases by the Federal Government while at the same time saving millions of taxpayer dollars. It is a win for the environment, a win for national security and a win for American taxpayers.

Our legislation directs the General Services Administration to replace currently used low efficiency light bulbs with high efficiency bulbs whenever a bulb is replaced or installed in a Federal GSA building.

The impact of the BRIGHT Energy Savings Act could be significant. The Chairwoman discussed the number and size of buildings that GSA owns and also manages. Our figures show at least three million lights throughout the Federal Government could be upgraded to high efficiency bulbs under our legislation.

The type of high efficiency bulb that will mostly likely be used today is the ENERGY STAR certificated compact fluorescent light bulb known as a CFL. CFLs use approximately 75 percent less energy than incandescent bulbs, provide the same amount of light, and they last approximately 8 to 10 times longer. Replacing an ordinary bulb with a comparable CFL saves up to $74 in energy costs over the bulb's lifetime.

It is easy to see that hundreds of millions of taxpayer dollars can be saved, implementing this bill. By converting just one conventional 60 watt incandescent bulb to a 13 watt CFL of the same brightness, we can prevent the burning of 110 pounds of coal and the release of 450 pounds of climate changing greenhouse gases into the atmosphere.

If the Federal Government makes this action and it leads every American household to just swap one bulb for a CFL, the Country would save $8 billion in energy costs, prevent the burning of 30 billion pounds of coal and keep 2 million cars worth of greenhouse gas emissions from entering the atmosphere. That is just one bulb in every home, and every home has about 30 light bulbs. The possibilities are great.

Ms. NORTON. Speak more closely into your microphone like I am.

Mr. LIPINSKI. All right.

Ms. NORTON. This room is so cavernous that it is easy for your voice to get lost.

Mr. LIPINSKI. As an engineer by training, I am fascinated by the promise of new and emerging technologies and what they mean for our future. In addition to CFLs, new halogen technologies are expected to become commercially available later this year. Further down the road, LEDs, light-emitting diodes, will revolutionize the

lighting industry leading to vastly more efficient lighting and the prospects of bulbs that do not burn out.

Much of this technology represents American ingenuity and innovation. It provides hope for a brighter future. With the Federal Government purchasing large quantities of these high efficiency bulbs, this next generation of technology will be less costly to put into American homes.

I am pleased that a bipartisan group of more than 80 Members have joined us on the BRIGHT Energy Savings Act. Just last month, the language of this bill was adopted into the Committee's Transportation Energy Security and Climate Change Mitigation Act. Now we need to move this important legislation from this Committee forward.

In addition, Representative Bob Inglis, Ed Markey, and Mark Kirk join me in amending the fiscal year 2008 Defense Authorization Bill with similar language requiring the DOD to use energy efficient lighting to the fullest extent deemed feasible.

Finally, Representative Inglis and I have worked with Representative Jane Harman and Fred Upton to amend every House appropriations bill that comes to the floor this year with similar language requiring the use of high efficiency bulbs. Combined, all these efforts will apply a high efficiency lighting requirement on virtually every Federal agency and facility. This is a practical, common sense approach that is simply the right thing to do.

I applaud Speaker Pelosi and Chairman Oberstar for their efforts to make Congress a model for the Country and for the world.

I would also like to thank Chairwoman Norton for working with me on this important issue and allowing me to testify today.

It is rare when we are talking about saving energy, becoming more energy independent, cutting down on global warming gases. It is rare when we can do these things and at the same time save money. It is just common sense that the Federal Government lead in replacing our low efficiency incandescent bulbs with high efficiency bulbs. We can do much in saving energy, helping the environment and also saving taxpayer dollars.

Thank you.

Ms. NORTON. Well, thank you, Mr. Lipinski, and especially thank you for your leadership.

It should be said that some of what needs to be done with respect to fluorescent lighting we see all around us, and much of that is being done by GSA in buildings, perhaps not in lamps. But in that regard, we hear complaints that incandescent lamps or incandescent bulbs are less expensive than fluorescent bulbs, and we live in a short term first Country.

Why is that, number one and, two, are the prices coming down for the bulbs as far as you know?

Mr. LIPINSKI. Well, the incandescent bulbs are based on technology that was more than a hundred years ago created. We are still putting electricity through a filament to create that light but more than anything, create heat more than light.

Those are very cheap to produce, and that is very true. You walk in the store. Sometimes you can find four of those bulbs for a dollar. But in the long run, yes, right now the CFLs last 8 to 10 times longer and the energy savings, 75 percent less energy.

Ms. NORTON. What is the short term?

This energy savings point has got to get across. You can tell people that something will save you money. If you tell them it will save you money over the next year, you might get them, or if you tell them it will save you money in two years. But unless you speak time frames, I think the short term fix in the American brain may not catch even though I believe it is catching on in the Federal sector.

Mr. LIPINSKI. Well, I think it is hard to say. It depends on how much you are using your light bulbs because the estimates are that up to $74 over the lifetime of a bulb will be saved by using a CFL rather than an incandescent. So it all depends on how long your light bulbs are lasting right now, how much you are using them, how much that you could save in one year.

Ms. NORTON. I can see the difficulty.

Mr. LIPINSKI. It is really difficult to say, but most estimates are that within a year you will come out ahead from the energy savings for using a CFL rather than an incandescent bulb.

Ms. NORTON. I think the Federal Government does understand it to the extent that bulbs are used as opposed to fluorescent lights. This needs to be mandatory. It is not mandatory now. It will be when the provision in your bill is added to our energy bill.

I would like to ask Mrs. Capito if she has any questions for Mr. Lipinski.

Mrs. CAPITO. No, I have no question. Thank you for your efforts. I look forward to working together to find some solutions, and I am interested in your talking about using the different bulbs.

I just have one question. Is the bulb that you are talking about the spiral?

Mr. LIPINSKI. Yes. Actually, I should have brought an example. It is the spiral bulb. These are fluorescent lights, but they are in the tubes, but there are also the ones that are spiral and screw into a regular light socket.

They also have ones that now actually look more. They put something around that spiral so it looks like a regular incandescent bulb.

The other thing is that some people say they don't like the bulbs because of the type of light that they give off. There have been great advances made in CFLs in terms of producing light that is very much like an incandescent bulb that we are used to.

In addition to that, these halogen bulbs, these new halogen bulbs, they are a little different than the ones that we use in some appliances now. There will be screw-in halogen bulbs coming out later this year. Virtually, you cannot tell the difference between that and an incandescent bulb, and they are still more efficient than incandescent bulbs.

Ms. NORTON. Most of the bulbs you are talking about are screw-in bulbs and you can put them in a lamp?

Mr. LIPINSKI. Yes.

Ms. NORTON. In any lamp in your house or any lamp here in the Congress.

Mr. Arcuri.

Mr. ARCURI. Thank you, Madam Chair.

I would just like to thank the gentleman for his hard work in this area and his leadership. Thank you very much. Keep it up. This is what we need to be talking about. This is the direction that we need to continue to move in, and I appreciate your efforts.

Thank you.

Mr. LIPINSKI. Thank you.

Ms. NORTON. If there are no other questions, we thank you for coming, Mr. Lipinski.

If I may say so, the interesting thing is we began with Mr. Lipinski and Mr. Lipinski's idea which is already part of our statute, but what we are today about are things that don't even cost that much, don't even cost as much as the added cost of the fluorescent light bulbs.

I very much appreciate your coming. I appreciate your initiative.

I want to ask the next panel to step forward. We are going to hear next from Commissioner David Winstead of the Public Building Service at GSA, from Phil Grone, the Deputy Undersecretary of Defense for Installations and Environment, from Brenna Walraven who is Chairman-Elect of the Building Owners and Managers Association International and Neil Stanley who is Chief of Staff/Associate Director of Energy Conservation in the District of Columbia which has taken some important path-breaking steps at the local level.

Let us begin with Mr. Winstead.

TESTIMONY OF DAVID L. WINSTEAD, COMMISSIONER, PUBLIC BUILDINGS SERVICE, U.S. GENERAL SERVICES ADMINISTRATION; PHIL GRONE, DEPUTY UNDERSECRETARY OF DEFENSE, INSTALLATIONS AND ENVIRONMENT, DEPARTMENT OF DEFENSE; BRENNA S. WALRAVEN, RPA, CPM, CHAIRMAN-ELECT, BUILDING OWNERS AND MANAGERS ASSOCIATION INTERNATIONAL; NEIL STANLEY, CHIEF OF STAFF/ACTING ASSOCIATE DIRECTOR OF ENERGY, DISTRICT OF COLUMBIA DEPARTMENT OF THE ENVIRONMENT

Mr. WINSTEAD. Chairwoman Norton, Congressman Arcuri and Congresswoman Capito, it is very nice to be here. I am very pleased as Commissioner of the Public Buildings Service to join this hearing and your commitment to energy conservation in the built environment.

I would like to ask that my formal statement be submitted for the record as well as some handouts and charts that I have for the Committee's attention.

Today, I would like to focus on four general areas, responding to some of the questions that we have had for Congressman Lipinski. I wanted to stress GSA's recent history in terms of energy savings in our 1,500 Federal buildings and our leased inventory; number two, our building operations and customer outreach efforts to our tenants for energy conservation actions; three, efficient building systems and renovation, new construction. As you know, we have a very large construction and renovation program through the Chief Architect's Office at GSA as well; and, fourth, utility procurement actions.

I would like to also offer a few ideas that might assist the Subcommittee in further promoting cost-effective energy strategies in Federal facilities.

Here today, I have Pat Fee who is Director of Energy of Building Operation and Maintenance, also Kevin Kampschroer who is Director of Research and Expert Services that really is our in-house expert on energy and sustainability issues.

As the Chairwoman mentioned, Federal buildings account for 30 percent of Government energy use. As much as 70 percent of that cost is electricity. Leading by example and demonstrating how we can reduce energy consumption through operation, customer outreach and effective buildings and cost-effective utility procurement is an extremely important and very well staffed out program at GSA at this point.

We feel we have a very strong record of energy conservation. This goes back to 1985 even and 2005. We have achieved about a 30 percent reduction in energy which we targeted by the Energy Policy Act.

We have made great strides in implementing the President's executive order which requires a 30 percent reduction from 2003 through 2015. In fact, in 2006, fiscal year 2006, we reduced our overall energy consumption in our owned inventory by about 4.7 percent compared to 3 years before.

We currently operate our buildings at 9 percent below the private sector. BOMA, you will hear testify. We use the BOMA benchmarks as well as other performance standards in the marketplace to govern our actions and savings compared to other private sector buildings. We also are paying on the average 4.2 percent less in terms of utility.

During the 1990s, Congressman Lipinski is certainly pushing this forward with this bill, but we had retrofitted existing buildings with increasingly efficient lighting systems. Our early goal was to reach about 20 percent energy reduction between 1985 and 2000. We are moving towards a new generation of integrated lighting products including building-wide design systems, task lighting in terms of ambient as well as desktop lighting, and lighting controls and new glazing materials.

We are also increasingly managing the energy consumption in our buildings more effectively, and the NCR is a great example of this, and I will mention an action taken just two weeks ago that illustrates that.

We have energy management practices, both energy tracking where we track energy consumption monthly at all GSA facilities. Our systems provide a status of energy trends as relate to past and future activity, and we also target opportunities for operating improvements in energy retrofits.

We also conduct energy audits continually on our building, identifying both energy savings and life cycle, effective energy conservation and on an annual basis, we tackle about 10 percent of our inventory with those audits.

Also, over the past 3 years, 33 of our buildings reduced their energy consumption by more than 20 percent. We review with our property managers at these locations their actions in terms of energy reduction.

We use the ESPC which is Energy Saving Performance Contracts. We are essentially a private business investing in energy retrofitted buildings and from the savings of that energy, we essentially can finance the improvements that are being included in those energy retrofits. But some of these have included turning off perimeter lighting, obviously office equipment, also reducing the use of space heaters, eliminating some non-essential 24 hour equipment operation and obviously lighting retrofits.

In addition, we are increasingly adjusting lighting control systems to match tenant needs and replacing interior and exterior lights with the LEDs, as Congressman Lipinski mentioned, the light-emitting diodes, and replacing gas engines with electric motors.

Also tenant outreach is a large part of this, ensuring that we can incentivize our Government employees to embark on a number and we have done that in a number of ways. Our property managers are essentially working through GSA energy coordinators to implement aggressive energy actions for both our buildings and our tenants. There are illustrations of this.

We do have one chart, I think, that illustrates that the best, and that was that just two weeks ago we had 90 degree days in Washington, and I think this will illustrate what, by energy control systems in our buildings in NCR, we actually were able to reduce. Even though the heat went up to 98 degrees two weeks ago Tuesday, we were able to predict that and adjust and dictate to the property managers within our NCR buildings to reduce the energy levels to adjust for savings during times that previously you may have had blackouts. So this is an example just within the last two weeks of using those monitoring systems.

I know that my time is almost up here, Madam Chair, but you are well of our efforts with our owned inventory and the new buildings in terms of the Bennett Building in Jacksonville, we are saving about a 60 percent reduction as a result of integrating energy efficient design; the Duncan Building in Knoxville, Tennessee.

Also I think most notorious is last Monday, we dedicated the new San Francisco Federal Building in San Francisco. From the 5th to 18th floor, essentially, it is taking advantage of the low humidity and the moderate temperatures in San Francisco. It does not have heating or air conditioning systems, and we hope to get about 50 percent reduction in that portion of the building.

There are some secured sections of the building that have regular HVAC systems, but we are essentially taking the wind flows and the design of the building to maximize returns as a result of the siting of that building.

Madam Chair, I know I am up here, but I think I covered other examples of what we are doing, and I would be happy to take any questions at the end of the panel.

Ms. NORTON. Thank you, Mr. Winstead.

Mr. Grone.

Mr. GRONE. Thank you, Madam Chair, and distinguished Members of the Subcommittee. I appreciate this opportunity to appear before you this morning to discuss the energy efficiency and conservation programs of the Department of Defense.

Consistent with the Energy Policy Act of 2005, Executive Order 13423, DOD strategy is a comprehensive approach to reduce energy consumption, increase facility energy efficiency and develop renewable energy resources.

In furtherance of that strategy in my role as the Deputy Undersecretary of Defense for Installations and Environment, I issued a memorandum on installation energy policy goals on November 18th, 2005. Along with emphasizing the requirements of current law and the goals of the executive order, the memorandum established a goal for the Department to procure and produce renewable energy equivalent to 25 percent of total electricity demand by 2025 where life cycle cost effective.

The Department's program to this date is demonstrating results. In fiscal year 2006, the Department reduced energy consumption as measured in British thermal units per gross square foot by 5.5 percent in buildings from the fiscal year 2003 baseline established by Congress.

DOD exceeded the fiscal year 2006 renewable energy goal of 2.5 percent. The Department's renewable purchases and generation accounted for 9.5 percent of all electricity usage in that year. The national average is approximately 6 percent.

DOD has achieved a 30 percent improvement in energy use since 1985 when measured in terms of energy use per square foot of building space. Over those 30 years, as I indicated, we have reduced our energy use from 138 billion British thermal units to 98 billion British thermal units per square foot today.

Our tools are critically important in this regard. We have achieved significant savings using the Energy Conservation Investment Program. That program, a line item that is contained in the military construction appropriations request, is a competitively bid that invests in energy efficient upgrades for existing facilities.

In fiscal year 2007, that was a $55 million program which included $19.6 million for renewable projects and just over $3 million in hydrogen fuel cell projects. In the President's budget request for the coming fiscal year, we will increase the amount for that program to 70 million.

The Department also makes use, as do our colleagues in GSA, of Energy Savings Performance Contracts which allows us to use industry funding to pay for equipment to reduce life cycle costs of facilities and pay those investments back from the accrued savings. Private sector financing through the ESPC mechanism increased from 2005 by 316 percent to our present position to more than $586 million of award value just in fiscal year 2006.

We want to build on this progress by increasing the use of ESPCs enabling DOD to have more effective, more cost-effective long term facilities operation and maintenance, certainly at a reduced up-front cost.

Installations and facilities are in the energy security business for the long haul at defense installations, and we are exploring additional enhanced use leasing opportunities and public-private ventures to develop cost-effective renewable resources.

But, certainly, we understand that the tools alone are not enough and that the culture change which the Chair has indicated that is necessary, the daily management by individuals is critically impor-

tant, and I want to highlight three aspects of the training and emphasis that we have placed upon that.

The Army has made energy stewardship a critical effort as part of their broader Army Energy and Water Campaign Plan for installations, and they have included energy and water conservation responsibilities in the position descriptions and performance plans of its commanders and civilian supervisors.

The Navy, realizing that creating this culture change is vital to achieving energy efficiency, instituted a multilevel plan for reaching its people through enhanced training. The Navy's energy training program has directly facilitated the training of 2,500 Department of Navy personnel with over 160 becoming certified energy managers.

The Air Force, under Secretary Wynne's leadership, in establishing Air Force Smart Operations for the 21st Century, included improving energy efficiency as one of AFSO 21's five desired effects. The others being productivity, asset availability, agility and safety, all of which are designed to help guide initiatives in key areas for continuous process improvement. Those who have been involved in continuous process improvement know that it requires the direct, very direct role of the individual on the ground to make sure that process improvement occurs.

So across the Department in ways, large and small, from training to major programs, we are working earnestly in this area to improve our energy conservation profile. We have appreciated the great support we have received from the Congress for these initiatives, and we look forward to continuing to work with Members to improve those programs in the coming months and years.

Thank you, Madam Chair.

Ms. NORTON. Thank you, Mr. Grone.

Ms. Walraven.

Ms. WALRAVEN. Good morning, Madam Chairwoman Norton and distinguished Members of the Subcommittee. Thank you for holding this important hearing and for inviting me to testify today.

My name is Brenna Walraven. I am Executive Managing Director of National Property Management for USAA Real Estate Company, and I oversee property management operations for a national portfolio of approximately 35 million square feet. I also serve actually as Chairman-Elect for the Building Owners and Managers Association International.

I am clearly having a technical problem.

Ms. NORTON. We would just like you to speak. You can all hear me. I don't know why it is.

Ms. WALRAVEN. Am I not loud enough so go closer?

Ms. NORTON. Yes, go closer, so we can really hear what you are saying.

Ms. WALRAVEN. Okay, I apologize.

I am also serving as Chairman-Elect for Building Owners and Managers Association International, and I am testifying today on behalf of BOMA. BOMA represents commercial real estate professionals who collectively own or manage more than 9 billion square feet of office space which represents more than 80 percent of the prime office space in North America.

BOMA has a long involvement in energy efficiency issues, and in fact last year we launched one of our most comprehensive educational initiatives in partnership with the EPA's ENERGY STAR program known as the BOMA Energy Efficiency Program or BEEP. The BEEP curriculum is focused on no and low cost ways to reduce energy consumption.

We estimate that if only 2,000 buildings adopt BEEP's no and low cost practices over the next 3 years, energy consumption and carbon emissions will be reduced by 10 percent which would result in $400 million of energy savings and 6.6 billion pounds less carbon dioxide released into the atmosphere. I was asked to address some of these strategies in my remarks today.

First and foremost, we recommend that all real estate owners and operators benchmark their buildings on ENERGY STAR to get an energy performance rating that provides not only a baseline but also, more importantly, provides a more objective measure of energy performance because it takes into account weather, occupancy and other building attributes that dramatically affect consumption.

Next, we recommend creating an action plan on how to improve the rating and thus performance by setting realistic and achievable performance goals, identifying areas for improvements and then focusing on operational strategy as well as low and no cost improvements.

When setting priorities, we recommend first looking at the low-hanging fruit beginning with operations and management, then looking at occupant behavior, lighting controls and finally short payback building retrofit opportunities. These ideas are not at all complicated, and many do not require additional expertise of the building manager or operators.

By low-hanging fruit, we mean start by looking at building operations and management and regularly inspect all equipment and controls to ensure they are operating as designed. For example, calibrate thermostats and ensure thermostat settings actually equal the space temperature. Make sure the system isn't heating and cooling at the same time which can easily happen.

Make sure systems that are supposed to be off at night actually are off which can easily be verified by a once a month evening inspection of the property because a simple $100 faulty relay can cause a building to run 24 hours, 365 days without anybody realizing it is happening.

Finally, implement janitorial best practices such as team cleaning and day cleaning which can shorten the amount of time space needs to be lit or air conditioned.

In terms of occupant behavior, it plays a critical role in how facilities use energy. We recommend working with tenants to educate them on ways that they can help to reduce energy by simply turning off lights and unneeded equipment, switching to ENERGY STAR office equipment and appliances, using task lighting to reduce the need for unnecessary overhead lighting and locating work stations as close to natural daylight as possible to cut down on overall lighting needs.

Lighting specifically is another area where building operators can achieve dramatic financial returns with low capital investment

and use off the shelf proven technologies. Lighting actually accounts for approximately 29 percent of the energy used in offices.

The latest technology often has a less than one year simple payback. Change incandescent bulbs to compact fluorescents and convert 40 watt T-12 fluorescent lamps to 32 watt and even today 25 watt T-5 lamps. Install electronic ballasts in place of magnetic ballasts and replace inefficient exit signs with LED exit signs.

Many parts of the building are often over-lit. In these spaces reduce lighting levels, like we did here today, de-lamp and disconnect unused ballasts. Timers and occupancy sensors are also good ways to ensure that lights are only on when they are actually needed. Many building managers find that they are wasting energy.

In conclusion, there are many no and low cost energy reduction measures that operators of public and private sector buildings can take that improve the performance of the building, improve energy efficiency and save money without at all sacrificing comfort.

BOMA believes that the Building Owners and Managers Association should continuously assess their energy usage using the ENERGY STAR tools, strive to be responsible environmental stewards as systems, technology and operating best practices are continually improving.

We thank the Subcommittee for holding this important hearing and look forward to working with Congress, the General Services Administration, Department of Defense and other public and private sector partners to achieve our mutual goal of improving energy efficiency in the built environment.

Ms. NORTON. Thank you for that testimony.

Mr. Stanley, I want to indicate how much I appreciate your being here because you are here on shorter notice than the others. We wanted to make sure that the local government or State Government sector was represented here because we are impressed that some of the more progressive actions are coming from local and State governments.

Mr. Stanley, we welcome you and than you for coming.

Mr. STANLEY. Thank you very much, Madam Chair. Good morning to you and Members of the Subcommittee on Economic Development, Public Buildings and Emergency Management.

Again, my name is Neil Stanley, and I work as the Chief of Staff for the District Department of the Environment. My responsibilities at DDOE include managing all the District Government energy efficiency and conservation programs. I appreciate the opportunity to testify on implementing low to no cost quick and easy energy efficiency measures.

I would like to take this opportunity to briefly describe a number of key current and also prospective initiatives that the District Government has designed to reduce energy consumption in our facilities.

The first initiative is known as the D.C. Municipal Aggregation Program or DCMAP. DCMAP is essentially a program in which we conduct an online reverse auction for procuring electricity.

Through this initiative, the D.C. Government is projected to save over $30 million over the next 3 years while doubling its environmental commitment by utilizing 10 percent of renewable energy sources. These savings cover the District Government buildings,

our schools, the University of the District of Columbia, the Washington Convention Center, The D.C. Sports and Entertainment Commission as well as our streets and lights and traffic signals programs. Through aggregate purchasing power, the District of Columbia is able to save and reduce energy costs while promoting renewable strategies.

The second initiative that I think is very important for energy conservation in the District of Columbia is the 2005 District of Columbia Green Building Act. The specific purpose of this legislation was designed to create a task force of green building experts, environmental advocates, government representatives and industry experts to develop sustainable air quality and stormwater management strategies to ensure the District of Columbia is greening its buildings.

The legislation applies to new construction or substantial improvement of District of Columbia buildings in the coming fiscal year and includes the following requirements. The first is that all non-residential buildings must fulfill or exceed Leadership in Energy and Environmental Design standards at the silver level, that our public schools must also fulfill or exceed the LEEDs for school standards and that priority consideration will be given to District Government-owned spaces with requirements meeting or exceeding the LEED silver standard.

The District of Columbia will also be providing incentives and grants to help defray the costs that will promote early adoption of green building practices by applicants for building construction permits for both residential as well as non-residential buildings.

In addition to the Green Building Act, the District of Columbia has become committed to developing high performance buildings both in the government and commercial sectors. We are doing that by adopting energy management strategies that measure and improve energy performance through ENERGY STAR benchmarking, reporting, training of building managers and reducing consumption in all District Government facilities.

We are excited about this new opportunity, and we are also excited about the opportunities that we have by serving on the Building Code Advisory Council Energy Committee. Through our service on this Committee, the District of Columbia is promoting stronger energy standards in our building codes so that new buildings coming online will be much more energy efficient.

The District of Columbia is also working very diligently to track and audit all of our government buildings and schools to make sure that we are actively reducing the amount of energy that we consume. Based on audit results, energy conservation managers are being installed and building managers will be trained so that they can help to maintain these buildings at a lower consumption level.

Finally, the District of Columbia is also investigating the feasibility of demands response options for District-owned buildings. These programs will help to remove the District of Columbia from the electricity grid and free up much needed electricity during times of heavy electrical demand, thereby preventing possible blackouts.

Madam Chair, we believe that the District of Columbia Government can lead by example by decreasing energy consumption, in-

creasing our commitment to renewable strategies and building or retrofitting buildings that meet LEED standards. Although we have got a lot more work to do in meeting this goal, we believe that our recent steps that we have demonstrated show that the Nation's Capital is raising the bar towards energy consumption standards.

This concludes my prepared remarks, and I am happy to answer any questions that you may have.

Ms. NORTON. I want to thank all four of you for testimony that is not only enlightening but testimony that helps us to understand how to get to the point where this is a matter of requirement and where it is done more automatically as a matter of habit. Some of your testimony has spoken to larger savings and some of it to culture savings.

Let me begin first by noting that we have been joined by the ultimate environmentalist on our Committee, the Chairman. I ask Chairman Oberstar if he has a few remarks to make before we proceed with questions.

Mr. OBERSTAR. Thank you, Madam Chair. Thank you for calling the hearing and for your persistent work on this issue.

I thank the gentlewoman from West Virginia, Mrs. Capito. I always think of Moore Capito. I knew your father. I am happy to say and sorry to say I have been around long enough to have known the whole family.

[Laughter.]

Mr. OBERSTAR. Thank you for your participation and steadfast participation in the Committee work.

The subject of this hearing is critical. We are going to pursue a vigorous course of action on all public buildings prospectuses from GSA, on life cycle costing, on energy conservation practices.

We are going to require, as we have done in the six building prospectuses reported this year, require a life cycle cost analysis by GSA, a report on the benefit-cost analysis of solar conservation whether it is photovoltaics or other solar applications. We are going to do our part in energy conservation.

The Committee on Transportation and Infrastructure has jurisdiction over 367 million square feet of Federal civilian office space. The annual electricity bill—it appalls people when I tell them this—is $5,800,000,000. We can cut that 85 to 90 percent with solar applications, and we are going to do that.

We are going to make sure that GSA does its part and save the public money, stimulate the solar energy industry that has on its own, without the Government has vigorous a partner as it should have been over the last 30 years, has driven the cost of photovoltaics down from $1.75 a kilowatt hour in 1977 to 25 cents a kilowatt hour today. We can drive that down further, and we would have been farther along this path if the Congress had persisted in overcoming President Reagan's abolishing of the alternative energy program in 1981.

But we are where we are, and we are determined to do our part in the greening of the Capital, in the greening of the Nation. This does not require an Apollo project, I would say to my colleagues. We don't need to have a crash program to invent something new.

The whole space program runs on photovoltaics. The Forest Service, the Park Service. NOAA has weather buoys that operate on photovoltaic cells.

The U.S. Forest Service has monitoring stations in the wilderness areas and in the national forests, reporting on everything from precipitation to air temperature and moisture content in anticipation and prevention of forest fires. The Park Services has similar monitoring, all run by photovoltaics.

We can run these buildings by photovoltaics. We are going to do it.

I will cease for the moment.

Ms. NORTON. I don't know how the Chairman manages to know so much about so many subjects. All you have to do is sit in multiple Subcommittee hearings, and I just said to staff, I think he must not read novels.

[Laughter.]

Ms. NORTON. He spends his time knowing everything there is about the subjects under our Committee.

We are mostly dealing with basics here. You have heard the Chairman speak about where we could be with truly forward-looking technology, and you heard him say we are where we are. So let us begin with the basics.

What buildings have done, what the Defense Department has done, what the District has done and what GSA has done is impressive because we didn't know about it, because I think most of the world thinks nothing is being done. I think we would all agree that the time has probably come to quicken the pace.

Let me ask you a basic question. Do you know what the temperature is in the buildings under your jurisdiction as I speak? Is there any mandate to what the temperature should be in the buildings that you have any jurisdiction over?

Mr. WINSTEAD. Madam Chair, we have in our P100 for our new buildings, the systems that we put in actually do dictate performance standards in terms of range of energy or rather energy temperature.

In our current existing buildings in the NCR, we generally leave it at about 70. It is 68 to 72 is the range that we maintain most of the systems in NCR, most of our major Federal buildings. So that is essentially the monitor. When we were monitoring this building in the heat situations of two weeks ago, we were still trying to keep it at the 72 level.

So that is essentially the benchmark that we have, and that is reflected both in the building operation direction for our property managers as well as with the design of new buildings in the systems to try to keep it at the 68 to 72 range.

Ms. NORTON. Mr. Grone?

Mr. GRONE. Madam Chair, for the Department of Defense, we have a similar range built into the operating procedures for the 370,000 buildings that are in the DOD inventory. The services implement that through their installation management profiles.

We are in a similar position to GSA. We have established corporate policy, department-wide policy in terms of guidance, and then the components will implement that and execute that at the base level, but it is a similar as Mr. Winstead described.

Ms. NORTON. Did either of you? I know the buildings are not under your specific control, Ms. Walraven.

Ms. WALRAVEN. I would just add that as an industry standard for commercial buildings, a range of 68 to 72 percent plus or minus 2 percent, 2 degrees, is an industry standard, and most leases dictate that range.

Mr. STANLEY. The District of Columbia does not currently have a mandate in place. However, we are convening an interagency task force within the government to look at this precise issue and using the leadership of both private industry and the Federal Government as guidance for what the applicable standards could be within the government.

Ms. NORTON. I ask that question because what I think, well, let me go to the next question.

It is pretty clear except for Mr. Grone's testimony, where in a real sense you see the difference between how the military sector and how the civilian usually operate. When the military sector says you are supposed to do something, usually they say and this is who is supposed to see that it gets done. You know you are in the Army now or even in the military now.

I noted in your testimony. I think yours was the only testimony where we heard specifics about who was delegated to do something. I think we looked in your testimony and some of what you said about the Army in particular, I remember. I don't believe it was in your written testimony, but it seemed to be a paradigm for how to make sure that a policy is more than a policy.

Would you elaborate on how you carry out the policy or at least how the Army has carried out the policy? Describe the policy you spoke of because we really want to focus not nearly so much on policy today—everybody knows what should be done—but on how it should be carried out.

Mr. GRONE. Well, Madam Chair, it is a very important question because it gets to the heart of the matter about performance measures and performance standards.

Ms. NORTON. A little closer into the microphone.

Mr. GRONE. It gets to the heart of the question about performance measures and performance standards. We are not at the department-wide level establishing policy as we have previously, but the components as the Army has done and the other components as well are building.

Ms. NORTON. You went out and you used to do it department-wide. Why did you go to Army, Navy, et cetera?

Mr. GRONE. I am sorry?

Ms. NORTON. You say you don't establish it department-wide and you used to.

Mr. GRONE. Oh, we do. We have department-wide goals that are established. The components'—the Army, Navy, Marine Corps, Air Force—defense agencies are responsible for the implementation and execution and the achievement of those goals.

Ms. NORTON. I see.

Mr. GRONE. But where the Department is evolving, as I think many of our colleagues in our sister Federal agencies are evolving, is building those performance expectations into not just of the management plan of the organization but building it into the perform-

ance standards and expectations for the command leadership, for the senior executives as well as the line staff that are implementing and carrying those out. So unifying what we expect of our people, building them around programs that are sustainable over time is critically important.

One of the things that we do in my office is we have established a Defense Installations Strategic Plan. We are revising it for the third time since it was first established in 2004. It was the first occasion we had a Defense-wide strategic plan for the management of the Installations' portfolio and a key component of that plan concerns energy demand management, generation of new and renewable sources and how we cascade that again down to the level of the individual person on the line, out in the field, how they would carry that out.

The implementing guidelines, the change management communication, these are all things that all of us in this Federal agency are beginning to adopt, frankly, as many of our colleagues in private industry do, linking large strategy significant programs down to the individual.

Ms. NORTON. The operative word for me was performance measures. That is to say if, in fact, in judging the performance of the Executive, energy conservation is included, you are more likely to have energy conservation achieved.

Frankly, I wonder how the Federal Government achieved the savings it did. I suspect that the savings that were in my opening statement were not achieved by habits of workers or managers but by purchases, bulk purchases and the like.

Mr. Winstead, for example, in Ms. Walraven's testimony, she talks about janitorial best practices, and she says that janitorial staff is often ignored when developing energy savings. She has this astounding figure that they typically account for 25 percent of weekly lighting use or 7 percent of the total building use.

Now, one thing you could do in putting our your RPF for janitors would be to incorporate performance standards for them. Does anything like that occur in the many janitorial contractors that are used by the Federal Government?

Mr. WINSTEAD. Madam Chair, I think the comment by the representative of BOMA is very much on target in your concern in that regard. As you know we have and I mentioned in my testimony, we have got energy coordinators in all the 11 regions, direct responsibility and accountability.

Ms. NORTON. I don't understand what an energy coordinator does or how that coordinator is incentivized or held accountable otherwise.

Mr. WINSTEAD. They are held accountable.

Ms. NORTON. How?

Mr. WINSTEAD. There is a quarterly performance review by both the ARA and the region in terms of the operating, basically the performance of the building with the energy savings targets.

On the contract issues, there are clauses. For example, a lot of our NCR buildings and major buildings and regions are managed through a contract by NISH. I have talked to Bob Chamberlain. He has annual conferences for training the managers of the cleaning crews and maintenance crews, and we are focused on that. We are

going to be doing more with them to ensure that every action is taken to obviously ensure lights are turned out as quickly as cleaning is done in our buildings.

Ms. NORTON. Would the RPF that you have to put out in order to do janitorial services, which you do all over the Country, is there or could there be points given for measures like janitorial best practices? I am looking for incentives, obviously.

Mr. WINSTEAD. Right. We do have clauses of maintenance contract and actually actions that are due. I will explore the issue of whether we could incentivize and account for savings.

A lot of our buildings, as you well know, are multi-tenanted. It is a little bit more difficult in terms of figuring out what floor is being cleaned and whether lights were turned out per direction through the contract to the operation maintenance provider, but there may be more than we are currently doing.

I would be happy to get the Committee a copy of the clauses in that contract and what we are doing in training with NISH to make sure that the contractors and the employees through NISH are actually doing it. I would be happy to get that to you.

Ms. NORTON. In the statutory authority we are contemplating, we will be looking at what the Defense Department has done. Some of that is impressive because there are accountable people. We will be looking at incentives.

We had Ms. Walraven here at the same time we had our government officials because the District of Columbia as well as Federal agencies often rent space, lease space. It does seem to me that there is a synergy there that is unavoidable. If you have a lease from the Federal Government, you have got something very valuable, and everybody knows it is very competitive.

But I am not sure the extent to which that synergy works out in best practices. What we are going to require in our statute is best practices, and we are going to take those best practices essentially from the kinds of things we heard that the Defense Department is doing with performance measures and from what the private sector is doing.

What I want to know is what kind of collaboration, given the fact that you lease almost as much space as you own. I am not sure if that is the case with the Defense Department, but I ask you this question and Mr. Stanley this question as well. Why isn't everybody in the same room, saying, hey, guess what, this is what we are requiring of every Federal building manager; therefore, this is required of you if you want this contract, period?

We could change the world out there as well as the world that we live in.

Mr. WINSTEAD. Well, we do use. I mean Phil and I, in terms of how we exchange best practices in this regard, we are on a level.

Ms. NORTON. What do you do? Tell me the nature of the collaboration.

Mr. WINSTEAD. Well, we work closely together in exchanging best practices, and BOMA is obviously very much involved in this. We have training with BOMA. We look at their standards in terms of energy savings and operating techniques.

As I mentioned, in these clauses, our contract clauses, both have facility standards in lighting control. These are for the vendors that

are operating the buildings. Mechanical and engineering operation, there are contract clauses dealing with that. So we do have within our contracts, requirements for our contractors to take these actions and to control and turn off lights and to save energy.

Ms. NORTON. Suppose they don't do it. Do you know whether they do it.

Mr. WINSTEAD. Yes, we do.

Ms. NORTON. I live in Washington, so I go downtown and I see lights on all the time. It just kills me just because I wonder. Like I said, I hope those people are working late, but then I have my doubts.

I am not criticizing what you are doing. I am suggesting that nothing happens automatically. As the Ranking Member said, some of us were brought up so that you were supposed to turn the light out when you leave the room, and it is still a habit that you turn it out.

But that is not the case, I think, for the average American, and if it is not the case for the average American unless somebody is held responsible, we do not believe it will happen.

My guess is that much of the savings, admirable savings that have occurred have not occurred because of delegated responsibility to make something happen but because of top management's ways of buying energy and of bringing pressure at that level on energy costs as opposed to bringing pressure also at the level.

Now I could be wrong, but I haven't heard much about how somebody is responsible, how somebody gets a bonus, how somebody gets his performance rating affected except somewhat from, of course, from the Department depending on which part of the military we are talking about. So what we are looking for is ideas rather than criticism.

I am going to go to Mrs. Capito and come back again after she does some of her questions.

Mrs. CAPITO. Thank you, Madam Chair.

I have a question. I know that all the buildings that all four of you deal with on a daily basis, a lot of them are very old and poorly insulated, poorly lit maybe in some occasions, maybe even poorly wired because of the age, using older technologies or just the fact they are just plain worn out. That has got to present really difficult challenges in terms of energy conservation.

Mr. Winstead mentioned a new building. I believe you said it was a new building that was being built in San Francisco. That is a new construction, correct, and that holds such promise, I think, for energy conservation. We know so much more now about the technologies of conserving and balancing need with down times and up times.

What kind of solutions have you worked on in terms of meeting the challenges of older construction, older buildings that you might be able to share not only with us but with others in the group?

Mr. WINSTEAD. Sure. Congresswoman Capito, as you mentioned, a large part of our inventory is older buildings even though a lot of the new courthouses, some 22 courthouses have been since 1995 basically.

A large part of what we are doing, we are investing about $407 million if you look at the total renovation program from 1990 to

2007. In five buildings that we have analyzed that were renovated with new systems, new efficient energy systems between 2000 and 2003, we have seen an average reduction of about 18 percent in consumption. The totals per building have ranged from 3 percent to about 40 percent.

So what we have continued to do is to apply those new systems that are available, whether they are HVAC systems or new lighting systems we talked about earlier, into those structures to get better performance out of them. A large part in our three budget line items is obviously direct appropriation for retrofit, but the R and A, renovation and alteration, and the minor R and A projects that we have in renovation is where a lot of that investment is occurring through those line item programs.

What we have seen in our buildings, for example, in Waltham, Massachusetts, where we have a storage facility for NARA and their record-keeping is we have actually put a new roof on the building which has a rubberized solar panel so the entire roof is solar. It is not just a singular series of solar panels. The reduction of energy, I think, from that installation alone is in the neighborhood of 20 percent.

So that is the kind of actions that we are taking across as well as building these new courthouses and new Federal office buildings and the new border station, even the one we are now underway with. A new border station in North Dakota has taken advantage of the alignment of the building with sun and basically the configuration of the heavy winds. The back side of the building is beveled. Basically in the cold it will divert these cold winds coming through that part. So we are very active.

The one thing that I would mention to this Committee is at a recent meeting of BOMA with the National Advisory Council that I was present, GSA as a participant. I think part of what incentivizes, and Chairman Oberstar alluded to this, what is incentivizing the possibilities here now is the private sector is finally really alive and engaged.

If you look back at the Green Building Council which has biannual meetings, about four years ago, they were tracking about 3,000 participants. This is both public and private building owners and vendors of energy systems in buildings. Now, 13,000 people are attending.

Obviously, the actions of the District and Montgomery County and Arlington and NCR demanding LEEDs buildings and recertification and renovation of buildings is really driving better technology, better costs recovery and life cycle costs of these facilities.

I would mention in my testimony just to show you the payback period. It used to be 10 to 15 years ago, that we were looking at 10 or 15 years payback on new HVAC systems or lighting, new lighting or glazing of windows. Now we are looking to an average of 6 years recovery for a lot of these retrofitted energy systems that we are putting into buildings. So we are seeing our payback shorten which is incentivizing both our ability to renovate buildings as well as the public to develop new technologies.

Mr. GRONE. For the Department, certainly you hit on one of the key points which is the age of the inventory. When I joined the Department after leaving the House Armed Services Committee in

2001, I took a look at the state of the inventory. The average age of a building in the Department's inventory dated to the Eisenhower Administration, and the average age of a military family housing unit dated to the Truman Administration. So we certainly had exactly the issue you describe across the breadth of the portfolio.

Our approach is one coming out of the Office of the Secretary of Defense that is very much a portfolio management approach. What we have tried to do, what we are doing is establishing broad performance expectations for the portfolio, building models that are benchmarked to private sector and best practices in the public sector that understand how we should be maintaining and operating our assets, how we should think about the recapitalization of those assets, aggressively demolishing assets we no longer require, looking at those older assets for their potential benefit as adaptive reuse.

What we find in many cases is that a well sustained older facility has many of the attributes of energy conservation that we are actually looking for. Carefully balancing within the portfolio, what is the mission requirement to the asset and bringing those up to some sense of contemporary standards, we can get an enormous amount of efficiency.

But what we have not tried to do is specifically dictate a military specification out of my office down to the components to be implemented across the nearly 400,000 built assets to say you can only do X with an installation.

We have tried to be very careful about performance expectations, be specific with standards where they are benchmarked to private sector practice, and then in working with our private sector partners and our interagency partners have those aggressively implemented across the enterprise.

Ms. WALRAVEN. I wanted to specifically address on the private sector side the financial impact is a huge motivator and performance metric which is why our industry is keenly focused on the impact of energy because it can be 20 percent of total costs of operating a building and as much as a third of variable costs or those costs which you can truly control.

In fact, I would also comment that as it relates to most GSA leased structures, we are limited in our ability to increase rent over CPI type of increases such that we have an incentive to manage all costs but particularly energy because it is such a huge component because we won't get that recovered from the GSA. So that is in those leased environments that you asked about, Madam Chair, is a way to address and make sure that we are getting what the Federal Government expects.

I would also highlight that education and outreach is absolutely key. To your point on this old buildings versus new buildings, actually EIA, the Energy Information Association, did a study—I believe it was in 2003—that looked at the poorest performance buildings in the CBECS database which is what ENERGY STAR is based on, and they also looked at the age of those buildings.

What was interesting is that age was not the strongest correlator for performance and, in fact, the bottom 25 percent performers often had state of the art equipment including 76 percent had

economizer systems, 56 percent had energy management systems, 45 percent had variable speed drives.

So a big majority of these buildings had state of the art equipment, and the age was not the biggest determinant which really supported this point and which is where BOMA's energy efficiency program or BEEP really focused on the low and no cost ways to really improve performance because you can build a LEED-certified top of the line building, but if you don't operate it correctly and benchmark it on ENERGY STAR and really manage that performance, it is not going to perform well.

We see in the GSA stuff that we deal with there is a company at USAA that it is regularly part of the performance that you will have an ENERGY STAR rating, that you will seek a label, that you will LEED certify. I can assure you we are living to live up to those standards.

Mr. STANLEY. The District of Columbia Government has a multi-prong strategy for addressing energy consumption in old buildings. I think the highlight of our strategy is the Green Buildings Act.

While a strong focus of the Green Buildings Act is on new construction, there is a portion of the Green Buildings Act that focuses on significantly renovated public buildings. By that, I mean buildings that are owned and operated or receive a significant portion of funding from the Government of the District of Columbia, and so when there is an instance of significant renovation in a D.C. Government building, starting with the new fiscal year 2008, they will be required to meet LEED standards.

This, I think, demonstrates strong leadership, quite frankly nationally. We are very proud of that. We are also working on making sure that there are strong incentives, not just for government agencies but also for the private sector as it relates to the Green Building Act moving forward.

The second, I think, piece of our multi-prong strategy is conducting audits of all the government buildings that D.C. owns and operates to do a baseline assessment of where we stand right now with respect to energy consumption.

I think the follow-up to that is to do some retrofitting of buildings that may not necessarily require a significant renovation but probably could stand to use some retrofitting as it relates to energy consumption. One of the aspects of that may be working with private companies to come in and do some retrofitting of some of the equipment and devices that exist in buildings to enhance our energy consumption because we believe that even a small investment can yield long term benefits with respect to existing buildings.

Then the last piece of our multi-prong strategy is training, and I think you have heard of that from a number of my colleagues that are here on the panel as well. I think that we want to make sure that every single facility manager within the District of Columbia Government is properly trained in basic strategies are making their buildings much more energy efficient.

Some of them are very small things such as, again, making sure that computers and lights are turned off. Others are making sure that we have high performance cooling and heating systems as well. The combination of those strategies, I think, will help significantly.

Then I guess the final piece is also what I mentioned before, and that is taking a look at some demand response initiatives to make sure that during peak electricity demand time such as during the summer that existing old buildings have an opportunity to demonstrate reduced energy consumption as well.

Mrs. CAPITO. I thank you all. I date back to the Eisenhower era. I am glad to know age is not necessarily the prohibiting factor to efficiency. I appreciate your insights.

I have to leave to go to another meeting.

I think the training aspect or the awareness aspect in this Country, for some reason in the seventies this was a big push, and I am sure a lot of you all were around. With Jimmy Carter, we were in gas lines. We were becoming very aware of how much energy we were using both as individuals and how much we were using in our cars and our homes.

I remember at one point, actually when my dad was Governor of the State of West Virginia, he turned off the lights. Conservation was becoming a word that we all understood, and we knew how to practice it. We got so far away from that.

I think if people realized the statistics that you have just brought forward to us with the practices that you have in place and that I am sure you are going to be increasing upon, how much of an impact just small and low cost and real free behavior modifications can make, it can really save us all in the long run.

I hope that in conjunction with what you are doing—I think you are doing a lot of great work—that just as a basic citizenry, that we can, and I think we are, raise our awareness and make all of us aware that little things go a long way. So I appreciate everything.

Sorry, Madam Chair, I have to move out for an 11:30. It is all your hands, very capable hands. Thanks for bringing the sun in.

Ms. NORTON. Thank you, Mrs. Capito.

Just a few more questions because we are trying to cross-fertilize here between the military, our own civilian programs and, of course, the private and public sectors.

In your testimony, Mr. Grone, you spoke about and you indicated what is clear, that if you use energy saving approaches, that will be a higher cost than if you use conventional approaches if you are doing building. You do a lot of building military housing, bases. I mean you do a huge amount of building.

GSA does some, does less. We are just about to pass out an appropriation, probably the largest in history for GSA to build not just one building but a whole set of buildings on the old St. Elizabeth's campus.

Now to what extent is our expectation that new methods of construction, taking into account energy costs, to what extent is that a pipedream because of the way in which appropriations occur and the amount of money you have to build dictates construction?

Are you able, in other words, to face the future as you get opportunities to build new buildings of various kinds?

Mr. WINSTEAD. Madam Chair, clearly, as I mentioned in my testimony, the standards that we are putting in the P100. We have revised the P100 standard to both comply with the EP Act 2005 and the executive order. It basically is including requirements

across the board that each building uses about 30 percent less energy, and that is published in the actual standard so that we are actually going below the benchmarks. As BOMA mentioned, most of our buildings are now benchmarked to BOMA standards as well.

In the new construction, with the American Society of Heating, Refrigeration and Air Conditioning, we are actually, in new materials and construction techniques and systems in place, getting about 30 percent less energy in those new buildings.

I know that you have watched.

Ms. NORTON. You are able to take into account as you build the new Coast Guard headquarters, that if you do X, you will save the Government energy over, let us say, the next 10 years rather than doing Y. You are able to do that?

Mr. WINSTEAD. Yes, Madam Chair.

What I think we see in this chart that is in my testimony about average new systems, be it materials like glazing or high efficiency glass or lighting, what has happened now for the first time is we are really seeing a matrix of return, the data that allow us to understand what the Government is investing in this. A decade ago investing in a green roof, you really couldn't define to the degree that we can now. There is a lot out there, and we are able to document returns.

What I am very pleased about is I mentioned earlier at this very recent meeting through BOMA, this National Advisory Council. They actually are looking at financial returns. As we approach St. Elizabeth's and the new headquarters, we will be able to actually understand what the return in energy savings and to the taxpayer is for the new systems we put in that headquarters building.

I know you are very interested. We spent a lot of public money over the last 15 years on the courthouses, so we did a little extra work. We looked. You know we have over 300 courthouses in our inventory. Over 50 have been built under design excellence since 1992. We are actually seeing about 6 percent lower consumption in these courthouses.

Now, as you know, they are not as heavily populated. There is not as much going on per day as a Federal office building, a multi-tenanted Federal office building, and the atriums are not consuming as much energy as public spaces. But we looking at operating hours differential in the courthouses and we are looking at the thermostat controls in the courtrooms that are not being utilized in a day and turning them down. So we are taking action with a lot of the newer buildings that have been coming into our inventory.

Ms. NORTON. Mr. Grone?

Mr. GRONE. Madam Chair, the Department is in a position now where we talk about the age of our facilities. We are in a position now where we are undertaking a most significant recapitalization of our military infrastructure since in the last 50 years, taking account all of the construction investments that are being made through base realignment and closure activities, repositioning the force globally, growing the Army and Marine Corps, the work that is being done with our private sector partners in military housing privatization.

The budget that we have sent to the Congress for consideration this year has roughly a $20 billion construction program for fiscal year 2008. As we implement that construction program, many of the attributes that Commissioner Winstead discussed in terms of how we think about those assets, how they ought to be designed for the future are things that we are layering into that massive recapitalization activity of the Department.

But there is one aspect of the energy conservation question that we really haven't touched on which is for this Department a critically important aspect of it. Our friends at GSA have the benefit of managing largely singular assets that stand, in many cases, alone, largely outside a secure fence in the community, and they are largely responding to energy demand reduction goals that occur within the four walls of that singular asset.

The Department, obviously in managing military installations, most of our assets are behind the fence in a secure environment with very heavy energy demand pulls.

Ms. NORTON. No, no. Let us not give you an advantage over Mr. Winstead. You are on your own turf, setting your own terms.

Mr. GRONE. It does with this exception. The aspect of the problem that we haven't talked about is what happens outside those four walls. We have a recapitalization plant value for the entire enterprise of $710 billion based on our current estimates. Our utility infrastructure alone is $69 billion and within that $69 billion.

Ms. NORTON. Do you provide your own utilities?

Mr. GRONE. No. It is the plant replacement value of the distribution systems on the installations. When the power comes in at the main point of the fence at most installations, that power distributes across the system. Much of that, we own ourselves, and that plant value is about $25 billion for electric power alone.

So as we look at the challenges of energy conservation for this Department, it is not just what occurs inside the building, but it is the distribution system that brings the power to that building, modernized, efficient and effective.

When we looked at that challenge several years ago, there was a Department of Navy sort of catch phrase that people would use. The problem with our systems was that they squeak, they leak and they are past their peak.

They are older, antiquated and need significant modernization, and with that we are meeting our energy conservation goals, but we also need to be very mindful of the distribution systems and the feeder systems.

Also, frankly, up until just recently, we did not set about when we built new construction. We are doing this now, but when we did a new construction, we did not individually meter buildings.

Ms. NORTON. You did not what? I am sorry.

Mr. GRONE. We did not individually meter buildings. So the only place we had was the initial point of entry to tell us how much power we were using at Fort Carson, but we had very great difficulty understanding that on a per asset basis. We are getting to that understanding now.

Ms. NORTON. You are metering then all your buildings?

Mr. GRONE. We are putting in place the process to individually meter our assets, individual assets.

Ms. NORTON. Mr. Winstead, are your buildings metered?

Mr. WINSTEAD. We do. That is a requirement. We are. In the older ones we are retrofitting, we are metering our buildings, and that is part of what I was demonstrating.

Ms. NORTON. Is that minimally necessary?

Mr. GRONE. Sorry.

Ms. NORTON. To hold anybody accountable, is that minimally necessary?

Mr. GRONE. Yes, yes, absolutely.

Ms. NORTON. I can understand why it didn't happen before. So this is being done throughout your inventory.

Mr. GRONE. Yes. Yes, but my point in raising it was to emphasize that while we are very focused inside the actual constructed asset for the Department of Defense, I don't want to speak for DOE but for any of us at large that manage for the taxpayer and the Government, large installation complexes, the distribution systems as important a consideration in the equation as what happens inside the actual built asset itself. It is something that we have to pay attention to and we are paying attention.

Ms. NORTON. Of course, that would be huge capital costs to go about modernizing the systems themselves.

What was so intriguing about Ms. Walraven said is how they have to compete in order to lease from the Federal Government and have to be below a certain CPI. Therefore, in a real sense, they have no place else to go but energy savings and other savings that they can effect in order to compete to get this very valuable thing called a Federal lease. That is built-in. This is like the beauty the private sector.

What I am looking for are incentives in the public sector. The public sector does not have built-in incentives. It does not have a bottom line. People who would turn off the lights and turn off their own computers won't think a thing about not doing it in the workplace.

I have to say to my staff when I go into these little kitchens, this is a messy place. Would you keep your own kitchen like this? Of course not but since it is shared and somebody else is paying for it.

I would like to know what, if any, incentives. I am talking about anything from bonuses. We heard about performance. That is a great incentive, of course, if it has meaning. A certain percentage of your performance shall be. I mean GSA knows how to do points when somebody wants to compete for a lease. The Federal Government does performance measures.

I wonder if there is any manager who has as a part of her performance measures a specific amount of that performance measure that is energy-related, however that is defined in the Federal Government today. Does anybody know of anybody?

The Army, we already learned that the military holds people accountable, but I would like to know about specifics. You know how you will be rewarded based on very specific old-fashioned ways of supervising people. This is a fairly new way.

Mr. WINSTEAD. Madam Chair, I will be happy to get you, because as I mentioned on the regional, our property managers on the regional level are, in fact, under the quarterly review, the biannual

review and end of the year review, actually performance standards are operating these buildings, ensuring that they are communicating to the tenants for energy conservation action. They are accountable for that in their performance measure.

I will be happy to get you a copy.

Ms. NORTON. They are accountable for what?

Mr. WINSTEAD. For actually implementing and tracking and encouraging both in terms of operating.

Ms. NORTON. You see, that is what I don't understand. Of course, they are.

Mr. WINSTEAD. Yes.

Ms. NORTON. But how is that measured? When it comes time to rate their performance, how is that incorporated into their own performance which can decide if they have a bonus, which can decide whether they get promoted and the like?

Mr. WINSTEAD. Yes, Madam Chair, it is a part of linking budget to performance appraisal that is in place now. Their actions in compliance with both the standard reflected in their performance plan and obviously the operating and maintenance standards of our buildings, they are incentivized through a bonus system through linking budget to performance.

We are essentially evaluating performance of property managers based upon their adherence to our energy operational principles and obviously communication and working with tenants to have them mirror those actions. So we do have one in place, and I would be happy to share with you without a name attached but a traditional performance which is done ever year for every major property manager responsible for that.

I will be happy to get that to the Committee, and I will also go back to our chief people officer and find out if there is more we can do in that regard, if there are more ways.

Ms. NORTON. I appreciate it.

For example, Mr. Grone, I am just trying to make those of us who live in the average real world understand.

Suppose you have a base commander. Now I know the Army measures these guys in very specific ways. A base commander who is in charge of—I don't know—let us say Bolling Air Force Base, is part of the way he is evaluated as a base commander have anything to do with energy conservation and consumption, any guidance?

Mr. GRONE. Yes. I would request that I get a more detailed answer for you for the record.

[Information follows:]

Hearing Date: Jul 19, 2007
Hearing: Federal Leadership by Example on Energy Conservation
Member: Congressman Norton
Insert: (Page 74, Line 1708)

(The information follows):

Department of the Army Vice Chief of Staff Memorandum of June 22, 2007, requires that energy considerations be included in the functional responsibilities of Headquarters Department of the Army Principal Officials, Commanders or Directors of Army Commands, Army Service Component Commands, and Direct reporting Units where appropriate. Energy and water conservation responsibilities will be included in the position descriptions and performance plans of subordinate commanders and civilian supervisors to the lowest level practicable. The memo further requires Commander, Installation Management Command (IMCOM) to ensure that energy and water conservation responsibilities are included in position descriptions of Directors of IMCOM regions, their subordinate commanders, and other critical individuals. As appropriate, rating officials will consider these responsibilities in the performance objectives and assessments of these individuals. Finally, the memo states that Army tenant commanders and civilian supervisors will comply with and support the host installation's energy program.

Department of the Navy (DON) has a long established Shore Policy Board which recommends energy policy to the Secretary. The Shore Policy Board provides top-down Navy and Marine Corps direction and program emphasis that is essential to impart culture changes and achieve energy program goals. DON Installation Commanders are required to submit annual reports regarding progress towards achieving energy goals. Starting this year, the annual reports will also require installations to provide proactive plans to meet the prescribed goals. The "Best in Class" in achieving the energy goals are recognized annually at the Secretary of Navy Energy Awards ceremony. Installation Commanders are also evaluated annually on a wide-range of performance factors that are essential for conducting their mission. Energy efficiency is one of the important contributing factors in this evaluation.

Department of the Air Force has a three part program for energy conservations. The first principle is to reduce energy demand by increasing efficiency and awareness of the need to reduce consumption. The second is to increase energy supplies through research and testing of new alternative fuels, as well as renewable and sustainable resources in order to create new domestic supplies of fuel. Finally, to create a culture where all personnel make energy a consideration in all they do. All levels of the Air Force have established cross-functional Energy Management Steering Groups charged with coordinating energy-related matters. Commanders are responsible for establishing energy management programs, identifying requirements, and executing their programs. Energy Management is a component of a Commander's overall responsibilities, but Commanders are not specifically evaluated on the execution of their energy program. However, as the Air Fore executes its energy strategy, it is developing new metrics and goals which will flow to Commanders at all levels.

Mr. GRONE. As I indicated in my opening statement, the Army for installation commanders is building exactly that profile into their requirements. The Secretary of the Air Force has made energy demand management and energy issues a key component of the Air Force leadership requirement.

How each of the components are building that into performance expectations particularly for the military staff, the command element, as well as for senior executives who are charged with implementing and achieving the goals and objectives, I would prefer to get that for you on a more detailed basis.

Ms. NORTON. I wish you would. I understand that these questions are very specific. The reason we are asking such specific questions, recognizing that you do not have all of this at your fingertips, is that when we codify something, we want to codify something from real life. Some of what you are saying suggests that real life exists here, and if we would only spread it, we could do it.

The things that I am asking, if you could get it to us within 30 days, we would very much appreciate it because we are working on statutory guidance.

I notice that Mr. Stanley in his testimony said something that was related to one of my earlier questions. He talked about the Green Building Act of 2005 which established legislation to create and here he says a task force of green building experts, environmental advocates, government representatives and industry experts.

That is really what I was getting at when I said what kind of collaboration exists between the public sector and the private sector which has its own incentives because it has a bottom line. Is there any such thing as the District of Columbia task force?

Let us get everybody around the table. Does any such task force operate on a continuing basis to advise the Federal sector?

Mr. WINSTEAD. Well, Madam Chair, there are a number.

First of all, I think GSA is the largest member of BOMA, the private sector. In terms of the District, I know NCR is engaged regularly, not only with their actions on green building initiatives which is wonderful in terms of incentivizing the private sector, but we actually use BOMA training which is both public and private participants in the management institute at BOMA. So I know that we are doing a lot.

I would also mention that on the Federal level, we have a lot of new.

Ms. NORTON. Are any of the Defense Department sectors involved in this BOMA since you have office buildings and other buildings as well? I know you have habitats. You have something very different, but you also have the same things that GSA has.

Mr. WINSTEAD. Right, Madam Chair. The one thing I did want to mention. Federal agencies now have the Federal Property Council. There is also a non-profit group that is out there that caucuses an annual lunch for both service providers and Federal agency and real estate directors, but under the Federal Property Council, we are working closely on building performance standard sharing.

As you know, a lot of the action in the last five years has been looking at our owned inventory, the 40 year plus buildings that are our average age, and figuring out how we can share experiences

not just in energy performance and building operations, but as you know we are excising our portfolio.

Just as Phil mentioned, we are actually disposing. We now have tiered our assets and those that are under-performing for energy reasons, for revenue, not achieving a 6 percent return which is our return on investment, we are disposing of those now. Even though it is an old inventory on average, we are actually disposing of the tier three properties and getting more efficient buildings by doing so and then adding everything we have been talking about.

But we are sharing a lot of this through the Federal Property Council.

Ms. NORTON. The Federal Property Council, I am aware of, and I think it is a very important and good thing.

Let me reflect the bias I have in favor of the private sector. The private sector has incentives to get there and to get to places that the public sector does not.

When I speak about Mr. Stanley's testimony, I am really talking about prodding for best practices in a continuing way, and I believe that prodding has to come from the private sector. I just believe the people who have to do it as a bottom line continually sitting with people who don't have to do it as a bottom line will help us all, particularly since we share many of these private facilities in the first place.

I understand these large organizations. I understand they break down into smaller groups that are helpful. I am saying that the best practices in this field are changing so quickly that unless there is some continuous feedback from the people who have to both live within a bottom line and to improve, I do not have confidence—I who love government—that the government will in fact move as well or as quickly as the private sector.

Mr. WINSTEAD. We will try to take your charge and even be more engaged.

I would just like to conclude. Maybe Phil has got some thoughts.

There are three groups that I understand. There is the U.S. Green Building Council that I have actually been engaged. There is also an interagency energy management group that meets four times a year in an interagency sustainability working group. So we do have the structure.

Ms. NORTON. That is within the government.

Mr. WINSTEAD. Yes, but the U.S. Green Building Council.

Ms. NORTON. I applaud that. I applaud that, but you just heard me express greater confidence in people who have to save money but still have to make improvements, and that is really the private sector. Therefore, I would be much more interested in the BOMA configurations keeping the Federal Government informed of what it is doing in its buildings in order to meet the lease requirements of the Federal Government.

I have no sense that there is anybody sitting over here who feels, here where we are sitting, who feels the same compunction to save money and to improve that somebody who has the bottom line does. It is just the nature of the beast. Therefore, I want to get in there with the beast who does have that to contend with and have greater cross-fertilization the way the District does.

The District sits down here. Who is ahead in the District with the green building?

It is the private sector. We now have private sector people saying my condo is a LEED condo. They tell us that, yes, there is a value added and there is expense added, but they also have found out that when people want to invest in a condo, that they will do so and they can be sold on that.

I want to hear more from people who are making money on putting up condos where people are willing to pay more for a LEED condo than for one that is not. I want to hear from those people because I think they know more than I do sitting in the Federal sector where I don't have that pressure. That is why I am pressing for that kind of close collaboration on a continuing basis, not four times a week when we all meet and then boast about what we have all done.

If anything, I have more faith in the Federal sector, Mr. Grone, because it is a command structure. When they say do something, it must be done as a matter of military discipline. Go ahead, sir.

Mr. GRONE. Madam Chair, we are all, GSA, the Department of Energy, we in the Department with BOMA, we all participate in the National Institute of Building Sciences, for example, looking at how to define high performance buildings.

As I indicated earlier, we constantly strive to benchmark our practices for our cost and management models which 10 years ago did not exist. We have come an enormous way in the last 10 years in the Department of Defense in understanding what it means to sustain and recapitalize our asset base, and we do not do that simply by looking at what did it cost us last year to run the enterprise. We constantly go out and check against the best costing and management practices to build those into our budget and programming process to try to understand what does it take.

Now we don't, in a risk-based judgment, always fulfill that obligation to 100 percent, but we understand where we are taking risk. That is part of the process that we are trying to build.

The question of the bottom line is very important to us. Do we think about it in exactly the same terms? No, but for this Department, the business of installation is a $56 billion business as represented by the President's budget this year. Everything from services to environmental remediation to construction activity to operations and maintenance, it is a $56 billion enterprise.

The objective of improving the military capability and readiness of those assets, improving their efficiency, returns funds to the bottom line that can then be put on people, on training, on military readiness, on procurement.

Ms. NORTON. But does it? When you say funds, it goes to the Treasury.

Mr. GRONE. No. Our ability to avoid costs in the future, our ability to have a more efficient, more effective, better asset base that is managed, to the extent that we can reduce our total operating costs, those are funds that we can then in subsequent budgets put to better effect on military readiness. For us, the bottom line, it is not the bottom of a P and L sheet, a profit and loss statement, but it is the ability to return funds to the warfighter for readiness purposes.

Reducing the total operating costs of that support infrastructure, that $56 billion enterprise, making it more efficient, the motivator for us is more efficient, more effective facilities that can deliver military readiness for the warfighter. As we are looking for areas where we can save funds, make ourselves more efficient, we are doing it with that objective. It is a different objective than a private sector enterprise has, but it is an objective nonetheless, and it is one we take very seriously.

Ms. NORTON. It is an important objective. There is a difference in kind, but it is important.

Mr. GRONE. I think it is important for the Subcommittee to understand why, what motivates our management model, and that is in large measure what motivates our management model.

Ms. NORTON. Why is it that GSA and the Defense Logistics Agency are continually apparently, according to our investigation, to supply Federal customers with inefficient as well as efficient energy-using products? I mean both are happening.

What determines whether you purchase an efficient energy-using product for your customers or an inefficient one?

Mr. WINSTEAD. Well, Madam Chair, both at GSA on the FAS side as well as the PBS side—obviously, I have mentioned mostly on the building side—but FAS, I know that there have been some issues in some of the products in terms of their energy sustainability.

Ms. NORTON. Is there a cost matter? Do you always buy energy efficient products for your customers? Our information is that is not the case.

All we are trying to find out is what determines it. Is it budgetary? Who gets to make these decisions?

Mr. WINSTEAD. Well, from the standpoint of the client, on the FAS obviously, the purchase of scheduled cleaning equipment and materials, actually that decision is a client-driven decision.

Ms. NORTON. That is my point. Clients don't know anything. Clients, obviously, will look to GSA for guidance. Clients will come in and say, I need X, Y, Z equipment. They only know the kind of equipment they have now.

Unless somebody who knows the state of the art says, but that is not the most energy efficient equipment, therefore we recommend this other equipment, he is going to continue to order whatever he has got at hand.

Mr. WINSTEAD. Right. It is my understand, Madam Chair, that we are, in fact, changing the schedules and putting the ENERGY STAR products up at the top. So that is something that is underway.

Ms. NORTON. So why are the others on it at all, sir?

Mr. WINSTEAD. Well, I think they are on it because of the vendors obviously getting on FAS schedules and wanting to market their products.

Ms. NORTON. What does that have to do with us if we are supposed to be buying ENERGY STAR products?

Mr. WINSTEAD. I understand totally. I mean we are trying to move the sustainable energy-sensitive products, and that is my understanding of what we are doing on the FAS side. We are moving.

Ms. NORTON. Mr. Grone, at least that is our understanding, that both kinds are there. If you can have your druthers and you don't

have any information, then you may end up choosing. You, the client. You, the customer. We are all one big happy Federal Government on the taxpayer dollar choosing the energy inefficient.

You may do it for the same reason you do it if you go to buy something at a store. You say, oh, well, that looks like it is cheaper, so why don't I buy that?

Why should we have on any list anything but ENERGY STAR equipment?

Mr. GRONE. Well, Madam Chair, the Defense Logistics Agency doesn't come under my direct purview. What I would like to do is go back and consult with General Dail, the Director of DLA, and then come back and provide information for the record or a briefing to staff or to yourself about we think about that and how they manage it.

Ms. NORTON. I would appreciate it.

Mr. GRONE. I would be perfectly happy to go back and consult with General Dail and bring that forward to you.

Ms. NORTON. I very much appreciate receiving that information within 30 days. Remember, we are trying to use your own practices in developing practices here.

[Information follows:]

Hearing Date: Jul 19, 2007
Hearing: Federal Leadership by Example on Energy Conservation
Member: Congressman Norton
Insert: (Page 84, Line 1963)

(The information follows):

The Defense Logistics Agency (DLA) is in the process of implementing the requirements of the Energy Policy Act of 2005 for ENERGY STAR product acquisition. DLA agrees that the product list should include items in the covered energy efficient categories that are consistent with customer requirements.

DLA currently offers 246 National Stock Number (NSN) items that conform and are identified as energy efficient in the Federal Catalog System. These accounted for over $375,000 in sales in the first half of Fiscal Year 2007.

DLA collaborates with the Department of Energy, continues to work its product list, and has currently identified over 2000 additional NSNs that require evaluation for compliance with the Energy Policy Act of 2005 (EPACT 2005). DLA plans to address these items, recognizing that as new products or customer demands arise, additional reviews will be required on an item by item basis.

The law authorizes exceptions for purchases of non-conforming products when no ENERGY STAR product or Federal Energy Management Program (FEMP) designated product is reasonably available that meets the customer's functional requirements, or when the customer has determined that no ENERGY STAR product or FEMP designated product is cost-effective for their intended application. An example of a compliant product that did not meet the customer's functional requirement would be the compact fluorescent lights the Navy was considering for shipboard use. DLA tested them in that environment and the product failed the requirements concerning electromagnetic interference with shipboard systems.

An amendment to the Federal Acquisition Regulation (FAR) is currently pending that will implement the energy efficient product procurement requirements of the Energy Policy Act of 2005.

Mr. WINSTEAD. I will get you a list, Madam Chair, of those products.

Ms. NORTON. Say that again, Mr. Winstead.

Mr. WINSTEAD. The products, the ENERGY STAR and energy-sensitive products, I will get to you a list of how we are pushing them up in the head of this.

Ms. NORTON. Yes, and would you get to me an understanding of why any other products are on the list? Is there a big difference in cost or something?

Now you have testified here about what the savings is. So I don't know why the others wouldn't say, guess what, unless you get to be like these ENERGY STAR people, you have no preference to be on our list.

That is a very valuable list to be on. How do you get on the list especially given that is what the guidelines and what the Executive Order says you are supposed to do?

How can we have a policy to use ENERGY STAR and yet you can get on the GSA list? I am not sure about the Defense Logistics Agency except our information is that both have both kinds on the list

Mr. WINSTEAD. Again, this is something we are now focusing on. David Bibb, our Administrator, is looking at it. My understanding is within the next four months we are going to have them, and I will get back to your question of how the other products end up on the schedule. I mean I assume it is some contract.

Ms. NORTON. Would you within 30 days tell us?

Mr. WINSTEAD. Sure.

Ms. NORTON. Give us any reason other products should be on it.

Now, here, let me help you out. The only reason I can think of is you have got some old something here, if you have got some old piece of equipment that will only take a non-ENERGY STAR piece of equipment. I didn't think it worked that way, but maybe that is why you have to have the other on the list.

Mr. WINSTEAD. Yes, replacement parts for older equipment would be the case.

Mr. GRONE. Or in some cases, Madam Chair, there may be other performance criteria that can only be satisfied conceivably by a product that is less energy-efficient. So it would be a balancing question.

Ms. NORTON. What would that be? Give me an example of what that would be?

Mr. GRONE. There could be a militarily unique product, that performance characteristics are either in terms of power delivered or whatever.

Ms. NORTON. That is interesting because I always thought that the ENERGY STAR also improved performance.

Mr. GRONE. If you are looking at the question narrowly as a question of energy consumption and the product from that perspective, that will lead you perhaps to that conclusion. But there may be occasionally products, and we will go back and take a look at this to see if we can illuminate on it, but there will be occasionally products where other performance characteristics are more important in terms of a mission delivery or a capability than that.

[Information follows:]

Hearing Date: Jul 19, 2007
Hearing: Federal Leadership by Example on Energy Conservation
Member: Congressman Norton
Insert: (Page 87, Line 2024)

(The information follows):

Section 104 of the 2005 Energy Policy Act (EPACT 2005) requires federal agencies to procure ENERGY STAR and Federal Energy Management Program (FEMP) designated products. EPACT does allow exceptions for purchases of non-conforming products when no ENERGY STAR product or FEMP designated product is reasonably available that meets the customer's functional requirements, or when the customer has determined that no ENERGY STAR product or FEMP designated product is cost-effective for their intended application. In addition, DoD is explicitly exempt from a requirement to supply energy efficient products for combat or combat-related missions.

ENERGY STAR and FEMP designated products are primarily commercial off-the-shelf items. The Defense Logistics Agency (DLA) currently offers 246 National Stock Number items that are energy efficient and are flagged as such in the Federal catalog. Much of this is energy efficient lighting which DLA and the Department have promoted significantly over the years. However, there are a few situations in which ENERGY STAR and FEMP designated products would not be suitable for use across the full range of DoD applications. One example is compact fluorescent lamps (CFLs) used in cold climate environments. At very low temperatures, CFLs are slow to light, have reduced output, and in some cases, fail to operate at all. Another example is the CFLs used on board ships. The Department tested CFLs shipboard and they failed the electromagnetic interference requirements. That said these examples are the exception. Other concerns with some ENERGY STAR or FEMP designated products are ensuring equipment put on Navy ships pass rigorous vibration and shock resistance requirements.

The Department will continue to work diligently to ensure energy efficient products are used across both tactical and non-tactical equipment, and pursue the improved performance necessary to implement the objectives of ENERGY STAR, FEMP, and other Energy Security Programs Department-wide.

Mr. GRONE. That said, we are trying to, as a Department, across the tactical and non-tactical areas do everything we can to embed energy efficiency into the method of getting that improved performance, so we can get to the objective that you have described, but in terms of the existing list, that could be one of the answers.

Ms. NORTON. Mr. Winstead, on page 17 of your testimony, you mention something that seems to be at odds with some of your answers here. You say, you talk about needing flexibility in capital projects to incorporate energy savings technology that was not included in the design at the time the prospectus was submitted.

I thought you said that you are incorporating these matters. I would expect that to be in the prospectus. Do you mean you perhaps have to come back and what do you mean by flexibility?

Mr. WINSTEAD. I think flexibility in terms of the various options and systems. The P100 sets the standards for performance in new buildings, but I think the flexibility is how do we address that. Obviously, climate matters. In San Francisco, you can have an unair-conditioned/heated building. In Washington, you obviously have to have both.

Ms. NORTON. Because if you need the flexibility, you are talking to the Subcommittee that would be prepared to build that flexibility into prospectuses if you can show that there would be energy savings results.

Mr. WINSTEAD. That is correct and whether there was some new technology after the submittal as well. I mean is there something more efficient than what was originally scoped out.

Ms. NORTON. Within 30 days, please get us information on how we can make sure the prospectuses are not behind the time because you do submit a prospectus.

Mr. WINSTEAD. Okay.

Ms. NORTON. I don't know. You submit a prospectus for the new headquarters.

Mr. WINSTEAD. Right.

Ms. NORTON. For the DHS, the Coast Guard, that must have been five years ago. Anyway, it was a long time ago. We certainly wouldn't want to be frozen in time if all it took were some changes in the prospectus or, in the alternative, building in some flexibility.

I would like to ask you about so-called delegated buildings, buildings that you don't manage, but you delegate it to the agency. What do you do to assure that these buildings, which are completely under the management of the agency, are not dealing with energy consumption above the benchmark? What do you do if they are?

How do you monitor such delegated buildings?

Mr. WINSTEAD. Actually, both in terms of our delegation when we do delegate, in Washington, NCR has a lot of single tenant delegated buildings, much more so than any place else in our portfolio. Within those delegations, there are guidelines to the standard operating procedures that ensure that they are following energy management and conservation plans to achieve the Federal mandates in the new bill, both the executive order and the energy policy.

Ms. NORTON. How do make sure it happens? What is the enforcement mechanism? You have given it over to the agency.

Mr. WINSTEAD. Right. We do require the delegated agencies to be accountable for what they have done under the implemented guidelines; also, the Department of Energy.

Ms. NORTON. How often do they report back? You see I am looking for mechanisms that are above policy. The policies are in place.

Mr. WINSTEAD. They report back annually.

Madam Chair, you are well aware, I think, that the GAO recently did a review of delegated buildings, and we are now tightening up our review overall of performance under our delegations to our GSA standards. I think in terms of their energy performance, we are and will continue to scrutinize how they are managing their energy costs that are consistent with what we are trying to do in the non-delegated part of the portfolio.

I think the SOP actually lays out the guidelines, and we are reviewing them annually, and we are going to be heightening the scrutiny for at least delegations.

Ms. NORTON. I know if it is single tenant building, the custom is to delegate it. That is just all away from you altogether. What percentage of your buildings are delegated buildings, Mr. Winstead?

Mr. WINSTEAD. Madam Chair, I don't know the exact, but it is basically dominant. It is basically 200 buildings out of our 1,500. So what is that? Seven percent or so.

Ms. NORTON. They are big ones like Ronald Reagan, I guess. Is Ronald Reagan such a building or is that your building?

Mr. WINSTEAD. Multi-tenanted building, it is our building but the Department of Agriculture.

Ms. NORTON. USDA would be such a building.

Mr. WINSTEAD. Sorry.

Ms. NORTON. USDA would be such a building.

Mr. WINSTEAD. Yes, USDA is such a building.

Ms. NORTON. I am interested in your getting a hold of them as a matter of performance and not merely as a matter of policy, and I am interested in working with you. We are interested in making easier for you to do as we codify what should be.

I think, Mr. Grone, you could be. I often find the military has found ways to do things that are helpful on the civilian side, and I was intrigued by the so-called awareness program for military housing. You have all these military bases strewn all over the world. You have military housing, millions of people in them. You have got hospital facilities. I mean you are a country unto yourself.

Tell us about this awareness program, particularly since we are interested in changing the culture.

Mr. GRONE. Well, the awareness programs that the various components run are a critical and ongoing process where our people are informed about the need to conserve, how to conserve. In many cases, they are tied back to specific programs.

Ms. NORTON. If somebody lives in military housing, is that soldier, let us say, he and his family, responsible for all the utilities that are used? He pays for it or does DOD pay for it?

Mr. GRONE. In our military housing that has been privatized, utilities are built into the lease arrangement. So in that sense the member does pay utilities.

Ms. NORTON. That helps.

Mr. GRONE. Traditionally, in military family housing, members did not pay lease payments or care for utilities or the like, and the classic free rider problem, economic free rider problem often occurred. In our privatized housing in the end state, we will have well in excess of 90 percent of our military family housing privatized.

Ms. NORTON. Ninety percent is now privatized?

Mr. GRONE. I will have to get the current number for the record, but in the end state, we will be in the 95, 96 percent range.

[Information follows:]

Hearing Date: Jul 19, 2007
Hearing: Federal Leadership by Example on Energy Conservation
Member: Congressman Norton
Insert: (Page 92, Line 2154)

(The information follows):

By the end of FY 2007, DoD will have privatized over 86 percent of the U.S.-based family housing inventory. We have additional Air Force privatization projects scheduled for award in FY 2008, as well as new housing construction to meet Army and Marine Corps end-strength increases. We project that by FY 2010, our privatization end-state will be 93 percent of inventory in the United States originally held by the Department.

DoD currently has privatized over 150,000 family housing units via 74 projects.

Ms. NORTON. End state, you said?

Mr. GRONE. In the end state, yes, when we are completed with the program.

The sensitivity to utilities and utility management and as we privatize those projects, as we privatize those assets, I know it was a question I know of some interest to you and the staff had raised it as well. How do we think about that?

Each of the services, when we go out and think about the privatization of a military family housing area, sets some basic standards and guidelines into their request for proposals and how they want to think about that. In many cases, the local municipalities and utility companies and the District of Columbia may do something similar, but they often have baseline compliance requirements for energy management in new projects or development projects.

In the procurement process the components give, we try not to be too specific to bind the hands of innovation, but there are credits that are given in the assessment process of the bid proposals when they come in for energy compliance, conservation, innovation to the point where the classic and best example of this and the headline example of this is the Army's family housing privatization project in Hawaii which is the largest demonstrated use of solar ray in a housing development in the world.

Five thousand units of housing all with photovoltaic laid down, and that saves several thousand tons of carbon emissions a year. I believe the number is 10,000, but we can get that for the record, on an annual basis. So it is a fairly significant effort in our housing privatization projects.

[Information follows:]

Hearing Date: Jul 19, 2007
Hearing: Federal Leadership by Example on Energy Conservation
Member: Congressman Norton
Insert: (Page 93, Line 2184)

(The information follows):

The Army's privatized housing project in Hawaii includes Fort Shafter, Schofield Barracks, Wheeler Army Airfield, Aliamanu Military Reservation, Trippler Army Medical Center, Helemano Military Reservation, and U.S Coast Guard Kai'l Kai Hale) it comprises 7,894 privatized units, when complete it will be the largest privatization project in the Department of Defense. This project also represents the largest photovoltaic power community in the world. The project will supply approximately 15-30 percent of the projects' power needs. The Army and their development partner, Actus Lend Lease, will construct 5,388 new homes and approximately 3,100 will have photovoltaic systems installed. The homes will use energy from both the power grid and solar panels. The solar panels will produce direct current electricity from the sun, which an inverter will convert into AC (or alternating current) that is compatible with the electrical grid.

This project includes several sustainability initiatives including the utilization of solar power - photovoltaic energy, preservation of trees, use of solar hot water systems, and reuse of existing concrete slabs as road base. It is estimated that the completed project will save about 15,500 barrels of oil per year and significantly reduce power plant carbon dioxide emissions. We estimate approximately 10,000 tons a year, or 320,000 tons over the life of the project, will be avoided, thus providing significant environmental benefits.

The Hawaii project also has a significant compact florescent light (CFL) program, which also has a significant environmental impact. More than 160,000 CFLs will be installed in new construction and over 87,000 CFLs will replace lights in existing homes. This will reduce energy used to light a home by up to 75 percent. Each time you save a kilowatt, you save greenhouse gases, and in Hawaii kilowatts are created using oil. Hence, use of CFLs will reduce greenhouse gases and oil. Using some "rule of thumb" information provided by Hawaiian Electric Co, the Army Hawaii privatized houses using CFLs, thus reducing greenhouse gases by approximately 12 percent.

Mr. GRONE. Again, we are trying to incentivize the contractor base, the development base. As they bring these projects forward, they are incentivized to bring the best innovation and practice. Not a mil spec answer, what should the answer be, but we are relying on our private partners through incentives in the bid proposal process to bring us projects that rely on the best of private practice and the best innovation that is available to us at the time that we do the procurement.

Ms. NORTON. One last question, Mr. Stanley, from your testimony, I am not sure I understand how the municipal aggregation program works. You speak about it being a reverse online auction for electricity procurement. Could you explain that to us, please?

Mr. STANLEY. Sure. There are a number of different ways of procuring electricity. For most D.C. residents, you procure electricity through what is called a standard offer service.

Ms. NORTON. Speak up into that microphone.

Mr. STANLEY. I apologize.

Ms. NORTON. It is not your fault. Something is wrong with these microphones. It couldn't be that 100 percent of the people who testify before us have the same problem. It is on our end. So, go ahead.

Mr. STANLEY. There are a number of ways of procuring electricity in the District of Columbia. For most District residents, electricity is procured through the local utility provider through what is called a standard offer service. By contrast, what the District of Columbia has done is it has aggregated all of its electricity use and it has put out for bid a request, well, a request for bids for providing utilities to the District of Columbia.

What happens is that a number of providers will then submit bids to the District of Columbia and what has resulted is that we are now in a situation where we stand to save about $30 million over 3 years because we are not doing a standard offer service procurement but instead we have put it out for bid. It has been a significant value for the District of Columbia.

We have been less successful in being able to provide that same type of service on the residential side, but we are working very hard to find a way of making sure that not only District Government benefits but also non-profit agencies within the District of Columbia as well as residences also.

I am not sure if that helps to clarify it a little bit better.

Ms. NORTON. It does.

Mr. Winstead, you are obviously serviced through local municipal power companies as well, isn't that right?

Mr. WINSTEAD. That is correct. We have about 104 area-wide utility contracts, and we also have reverse online procurement for electricity in deregulated markets. So we have both somewhat what the District is doing as well as about 104 contracts.

Ms. NORTON. Well, I want to thank all four of you for really very helpful testimony as we try to do think through what to do.

We are not going to prescribe in statute what to do. We are going to delegate to the GSA the framework for a mechanism to both incentivize and enforce best practices in energy conservation, and you have been immensely helpful, all four of you, in providing a basis for the statutory guidance we are working on as we speak.

Thank you very much for attending.
[Whereupon, at 12:17 p.m., the Subcommittee was adjourned.]

Statement of the Honorable Doris O. Matsui
House Transportation and Infrastructure Subcommittee on Aviation
Hearing: FAA's Aging Air Traffic Control Facilities
Tuesday, July 24, 2007

Mr. Chairman, thank you for calling this hearing today. Our Committee continues to take action to address the safety of the flying public, and today's hearing is yet another step in the right direction on this front.

Those of us on this Committee, and certainly those on our panels today, know that air traffic controllers are the silent backbone of our nation's aviation system. They work in a high-pressure environment, guiding aircraft to and from their destinations.

Every plane that takes off and lands safely is a testament to the skill and commitment of our air traffic controllers. These professionals often juggle more than one flight at a time. They are multi-taskers in one of the most difficult and pressurized jobs on the planet.

Anyone who has ever used our air traffic control system owes our controllers a debt of gratitude.

Congress has recognized this fact. Recently, our Committee took action to ensure that our air traffic controllers work in the best and most collaborative environment possible.

We recognize and understand that our controllers hold the lives of our constituents in their hands each and every day that they come to work. Now it is time for this Committee to reinforce our commitment to the people who are the backbone of our aviation system.

Today, we will continue our Committee's oversight of critical aviation infrastructure. We will draw attention to the condition of the buildings and technology that are essential for our controllers to do their jobs.

Unfortunately, Mr. Chairman, the condition of these buildings and technology is not good. The FAA estimates that our air traffic control system needs literally billions of dollars in upgrades.

Some of these billions worth of improvements are set to occur in my hometown of Sacramento. They are well-warranted for a growing and expanding airport like Sacramento International.

This airport's air traffic control tower has not been improved since it was first built. This might not sound like a concern, Mr. Chairman, until one realizes that the tower was built in 1967.

Sacramento's air traffic control facility also has an inadequate backup power supply. Its fire system is antiquated. The air traffic control tower is served by electronic cables that are deteriorating rapidly.

Despite these challenges, the people who run Sacramento International operate one of the finest airports in the country. I fly in and out of it whenever I go home. I am always pleased at the smooth approaches and efficient handling of aircraft that characterizes our airport.

But even the best controllers in the world cannot entirely mask the toll that forty years of constant use has taken on Sacramento International's tower.

I want to work closely with the FAA to ensure that this and similar facilities receive the funding they need to fulfill their crucial functions. Anything less jeopardizes the safety of the flying public.

I know that is unacceptable to me. I know that is unacceptable for those who work tirelessly at airports in my district. I hope it is unacceptable for the FAA as well.

Thank you, Mr. Chairman. I yield back the balance of my time.

**HOLD UNTIL RELEASED
BY THE COMMITTEE**

STATEMENT OF

**MR. PHILIP W. GRONE
DEPUTY UNDER SECRETARY OF DEFENSE
(INSTALLATIONS AND ENVIRONMENT)**

**BEFORE THE SUBCOMMITTEE ON
ECONOMIC DEVELOPMENT, PUBLIC BUILDINGS, AND
EMERGENCY MANAGEMENT**

**OF THE
HOUSE TRANSPORTATION AND INFRASTRUCTURE
COMMITTEE**

JULY 19, 2007

INTRODUCTION

Madam Chair, Mr. Graves, distinguished members of the Subcommittee, I appreciate this opportunity to appear before you to discuss the Department's energy efficiency and conservation efforts.

ENERGY MANAGEMENT OVERVIEW

The Department currently manages over 533,000 buildings and structures, which reside on over 51,400 square miles of real estate; and owns utility infrastructure with a Plant Replacement Value (PRV) exceeding 69 billion dollars. Installations are a critical component in the Nation's force capabilities; the quality of infrastructure directly affects training and readiness. It is imperative that the Department of Defense be a good steward of the environment and natural resources yet at the same time operate efficiently and successfully meet its missions. The Department of Defense is committed to not only reducing consumption and managing demand, but also investing in energy savings. Although the overall expenditures on energy continue to increase due to increased commodity costs, consumption has decreased from the 2003 baseline. The Department's facility energy management program includes investments in research, cost-effective renewable energy sources and energy efficient construction designs, and aggregating bargaining power among regions and the Services to achieve more effective buying power.

The Department's efforts to conserve energy are paying off. In FY 2006, military installations reduced consumption by 5.5 percent from the 2003 baseline, exceeding the energy conservation goal of two percent. Energy conservation projects accomplished through Energy Savings Performance Contracts (ESPC) typically account for more than half of all facility energy savings. Lapse of ESPC authority in 2004 negatively affected the Department's ability to reach

the 30 percent reduction goal under Executive Order 13123. However, with ESPC authority reauthorized in the FY 2005 National Defense Authorization Act and extended for an additional 10 years in the Energy Policy Act of 2005, DoD has launched an aggressive awareness campaign and is well on its way to meeting the new goals established in the Energy Policy Act of 2005. Use of ESPC for 2006 increased 316 percent, reaching an award value over $586 million.

DoD has significantly increased its focus on purchasing renewable energy and developing resources on military installations. Renewable energy projects are consistently more expensive than similar conventional energy sources, resulting in limited opportunities that are life cycle cost effective. The Department has increased the use of Energy Conservation Investment Program (ECIP) funds for renewable energy projects from $5 million in FY 2003 to $17 million planned in FY 2007, and to $24 million budgeted for FY2008 out of a $70 million ECIP request. ECIP projects have produced an historical average savings of two and a half dollars for every dollar invested. The FY 2007 program for ECIP also contains $2.6 million in hydrogen fuel cell projects. The Department exceeded the EPAct 2005 renewable energy goal of 2.5 percent in FY 2006. The Department's total renewable energy purchases and generation accounted for 9.5 percent of all electricity use. Also, while EPAct 2005 did not articulate a specific water reduction goal, Executive Order 13423 does have a goal of a two percent water reduction per year. The Department has reduced water usage by an impressive 29.6 percent from the FY 2003 baseline year.

INITIATIVES

To address the financial and operational challenges generated by cost and availability of oil and other forms of energy, the Department stood up two task forces to consider the issue from

different perspectives: the Energy Security Task Force and the Defense Science Board Task Force on DoD Energy Strategy.

The Under Secretary of Defense for Acquisition, Technology and Logistics directed the Defense Science Board (DSB) to establish a Task Force on DoD Energy Strategy. The DSB Task Force, comprised of subject matter experts external to DoD, is focused on energy strategy and policy. The Task Force re-examined DoD energy usage and is finalizing their strategies and recommendations. Specifically, the DSB Task Force will identify strategic transition opportunities through technologies, barriers to transition, systemic second and third order effects across strategic, operational, tactical, and life cycle cost performance vectors, as well as their potential for commercialization.

In April 2006, the Defense Department initiated the Energy Security Task Force, with the goal of defining an investment roadmap to lower the Department's fossil fuel requirements and to identify alternate energy sources. The multidisciplinary task force involves senior leaders from a wide range of expertise, including financial, science and technology, acquisition, logistics, installations and environment, and operational within the military departments, defense agencies, Joint Staff and the Office of the Secretary of Defense. The Energy Security Task Force reported out in late September 2006.

The Energy Security Task Force has completed a baseline analysis of ongoing DoD efforts to reduce fuel and energy consumption and will provide specific recommendations and options that will comprehensively improve energy efficiency and enable the production and use of alternate fuels. The Task Force used an analytical framework with potential cost and benefit analysis to identify and prioritize options. The Task Force has developed taxonomy to address the issue and provide a consistent terminology based on supply, demand, and availability. The

Task Force is taking the approach that the Department needs to impact the supply/demand ratio by increasing supply or reducing demand. Demand reduction can come through such efforts as increasing energy efficiency of weapons systems, support platforms, and facilities. Supply security includes future energy sources and the distribution system.

The Task Force found that the Department has not been idle; the DoD has already reduced energy consumption and increased efficiency for both installations and platforms over the past several decades. The DoD also has plans to invest over $1.5 billion on energy-related efforts in fiscal years 2007 and 2008, including the Energy Conservation Investment Program, the Energy and Power Technology Initiative, and Defense Advanced Research Projects Agency (DARPA) programs in energy conservation and alternative energy.

Fiscal Year 2008 President's Budget Request for Energy-Related Programs

Appropriation	Fiscal Year 2007 (Approp)	Fiscal Year 2008 (Request)	Includes
RDT&E	675.7	514.8	Energy and power technologies, assured fuels, vehicle fuel cells
MilCon	55.0	70.0	Energy Conservation Investment Program
O&M	10.2	182.5	Facility Energy Initiatives, Army Energy Campaign, Low speed vehicle
DoD Energy Funding	**740.9**	**767.3**	

The Energy Security Task Force also found that the Military Services have made significant advances in energy efficiency. Reducing energy consumption of both fuels and electricity has been, and continues to be, important to DoD. On the facilities side, by 2005, the Department reduced facilities energy use by 28.3 percent from the 1985 baseline (measured by energy use per square foot), and the Energy Policy Act of 2005 has reset the baseline and increased the target reduction. The Department implemented the use of sustainable design

practices for military construction – meaning that DoD designs, constructs and maintains facilities that minimize energy and resource consumption and use environmentally preferred products and materials. These practices will yield immediate savings and will reduce energy consumption by 30 to 50 percent.

Renewable Energy

The Defense Department is one of the major leaders of the federal government in renewable energy. For example, DoD installations received over nine percent of their electricity from renewable sources in fiscal year 2006, which compares favorably to the national average of around six percent. In addition, the Deputy Under Secretary of Defense for Installations and Environment issued a memorandum on Installation Energy Policy Goals on November 18, 2005. Along with emphasizing the requirements of the Energy Policy Act of 2005 and the goals of Executive Order 13123, the memorandum established a goal for the Department to procure or produce renewable energy equivalent to 25 percent of the total electricity demand by 2025, where life cycle cost effective, setting the pace for the rest of the federal government and industry.

While DoD does purchase some "green energy" locally, there are a number of base-level renewable projects that are very cost effective. For instance, the Navy facilitates the operation of a geothermal power plant at China Lake, California, and is developing an additional plant at Naval Air Station Fallon in Nevada. The geothermal plant at China Lake provides enough energy to operate the entire base. In addition, there are several wind facilities in Naval Base Coronado, San Clemente Island California, FE Warren Air Force Base, Wyoming, Ascension Island, and eight additional projects are under consideration. DoD has multiple solar facilities and initiatives at several locations, including bases in California, Texas, and Arizona; and North

America's largest solar array, being constructed at Nellis Air Force Base, Nevada, which will provide one third of the base's requirement by generating at least 14 megawatts of electricity.

Finally, DoD continues to research novel forms of renewable energy. The Navy has a Small Business Innovative Research project called "OTEC," which stands for the Ocean Thermal Energy Conversion program. OTEC is being tested at Diego Garcia Naval Base in the Indian Ocean. Effectively, the OTEC project seeks to use temperature differences between the ocean surface and deeper water to produce electricity. While it is still too early to determine how effective OTEC will be, it demonstrates the Department is exploring novel ideas.

Energy Achievements

DoD has achieved significant savings using the Energy Conservation Investment Program (ECIP), with projects saving on average at least $2.30 for every dollar spent. The demand for renewable energy technology is keeping the implementation cost relatively high, resulting in that figure dropping over time. Regardless, a savings to investment ratio greater than two to one is phenomenal within the Federal Government. ECIP is a competitively bid program that invests in energy efficient upgrades for existing facilities. For instance, in FY 2007 the Army is programmed to implement two wind generation projects totaling nearly two megawatts of production at Tooele Army Depot, Utah and Fort Huachuca, Arizona. The success of the ECIP program led DoD to increase investment, with $60 million requested for FY 2007, and $70 million requested for FY 2008.

The Department has also made wide use of Energy Savings Performance Contracts (ESPCs) which allows DoD to use industry funding to pay for equipment to reduce life cycle costs of facilities and pay it back from the accrued savings. Since 1998, industry has invested $1.7 billion across the federal government through ESPC with a net savings of $1.5 billion; 70

percent of the activity was in DoD. As an example, in November 2006, the Air Force entered into a solar energy ESPC at Luke Air Force Base, Arizona. Under this project, the Air Force installed a 375 kilowatt photo voltaic system to power portions of the base.

ENERGY STRATEGY

DoD developed a comprehensive energy strategy and issued updated policy guidance incorporating the provisions and goals of the Energy Policy Act (EPAct) of 2005, and is implementing the recent enactment of the new chapter 173 of title 10, U.S.C. The Department is also in the early stages of implementation of Executive Order 13423, issued by the President in January 2007 to strengthen Federal environmental, energy, and transportation management. This strategy will continue to optimize management by conserving energy and water usage, and improving energy flexibility by taking advantage of restructured energy commodity markets when opportunities present themselves.

The Installations' Community has led the way in energy efficiency by establishing and implementing a comprehensive energy strategy, with focus on improving energy conservation, reducing energy demands, higher renewable energy use, and, simply, better energy awareness for our people. Installations and facilities are in the energy security business for the long haul, as exemplified by the DoD's implementing policies directing the use of sustainable design practices. We want to "build" on their progress by increasing the use of Energy Savings Performance Contracts, enabling DoD to have more cost effective long-term facilities operation and maintenance with no up front costs. We are also exploring additional enhanced-use leasing opportunities and public/private ventures to develop cost effective renewable energy sources.

The Energy Security Task Force is considering various power systems to generate energy. We intend to build on the findings of the Rapid Equipping Force transportable hybrid

electric power stations and fund additional generators. There are also several proven commercial technologies that can turn trash into oil or energy. We are considering these technologies as a way to reduce waste and environmental hazards while creating energy that could help power our generators.

Over the next few years, the Department plans to test and demonstrate new technologies for reducing energy consumption of our weapons systems and at facilities. If the technologies are successful, DoD could realize substantial annual savings in energy costs in the long run with full implementation, and many of the programs may start yielding net savings soon. Some of these technologies may also reduce maintenance costs and the associated logistics tails. We intend to initiate procurement programs and "spiral in" successful technologies. In addition, testing and certifying energy sources for our military platforms, may help to catalyze U.S. industry to produce these fuels, enabling us to move toward the goal of energy independence.

ACCOMPLISHMENTS

Energy conservation is one of the President's management initiatives, and the Department has made great progress in reducing energy consumption. The Department has been recognized as a federal energy leader, as evidenced by numerous federal energy awards. DoD installations have received Presidential Awards for Leadership in Federal Energy Management, recognizing projects that achieved $9M annual savings in DoD energy use. In 2006, three of the five Presidential Awards were given to DoD installations, including the Naval Undersea Warfare Center, Division Keyport, which reduced energy consumption by 7.4 percent from the previous year, through institutionalized energy efficiency and water conservation by building these principles into its standard practices and procedures. Naval Base Coronado took a comprehensive approach to energy management, saving substantial amounts of oil, electricity

and water. Since 1985, Naval Base Coronado lowered its energy intensity by 45 percent to a remarkable 48,350 Btu per square foot in FY 2005. Finally, in 2005, Marine Corps Air Station Yuma reduced its energy use per square foot by 3.5 percent compared to 2004 and 40 percent compared to a 1985 baseline. This savings of 8.1 billion Btu represents enough energy to support 116 typical area homes for a year.

The Federal Energy and Water Management Awards are given annually by the Department of Energy to honor individuals and organizations making significant contributions to the efficient use of energy. The DoD was awarded nine of the 17 federal awards in 2006. One such award was for Hill Air Force Base, which was the first Federal installation or site to take advantage of the Department of Energy's Biomass and Alternative Methane Fuels (BAMF) program. Hill Air Force Base entered into a partnership with Ameresco Federal solutions in 2003 for construction of a landfill gas-fueled power generation facility, along with implementation of eight traditional energy conservation measures. The 1.2-megawatt on-site power generation facility was completed in 2004 at no upfront capital cost to the Air Force, with green power generation and transmission beginning in early 2005. This project reduced the base's energy consumption by more than 33 billion Btu and $740,000 in FY 2005. Additionally, Hill AFB re-negotiated a five year steam purchase contract with the local utility to purchase steam produced from refuse incineration. The base purchased almost 485 billion Btu in FY 2005, supplying 17 percent of the base's energy load and saving more than $200,000 in avoided natural gas purchases. Going forward, the new contract is estimated to save almost $1 million annually. These are just a few of the numerous accomplishments within the installations' community that are reducing operating and maintenance costs over the life cycle of our facilities.

The Department recognizes the potential energy efficiency payoff associated with lightweight materials and structures and has been long investing in materials research that will provide high performance, strategic mobility, and energy savings to meet warfighting needs. Applied research in advanced cellular materials, carbon-fiber reinforced composites, and titanium manufacturing technology should provide greater strength-to-weight ratios for military platforms. Platforms using lightweight materials should benefit from improved performance and decreased fuel consumption.

CONCLUSION

In closing, Madam Chair, I sincerely thank you for this opportunity to highlight the Department's successes and to outline its plans for the future. Your support of DoD energy initiatives and investments is appreciated, and I look forward to working with you as we increase energy security and reduce operating costs for the Department.

Testimony of Brenna Walraven, RPA, CPM
Executive Managing Director
National Property Management
USAA Real Estate Company

On Behalf of the
Building Owners and Managers Association (BOMA)
International

Before a Hearing of the
Subcommittee on Economic Development, Public
Buildings, and Emergency Management
Committee on Transportation and Infrastructure
United States House of Representatives

Federal Leadership by Example on Energy Conservation: No Cost Quick and Easy Steps for Immediate Results

July 19, 2007

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Good morning Chairman Norton, Ranking Member Graves, and members of the Subcommittee. Thank you for holding this important hearing on energy conservation and inviting me to testify today. My name is Brenna Walraven, and I am Executive Managing Director, National Property Management for USAA Real Estate Company and I oversee property management and operations of a national portfolio of approximately 35 million square feet.

I am proud to say that USAA Real Estate Company has shown a strong commitment to energy conservation and sustainability. In fact, the U.S. Environmental Protection Agency (EPA) and Department of Energy (DOE) awarded USAA Real Estate Company a 2007 ENERGY STAR Sustained Excellence Award in recognition of its continued leadership in protecting our environment through energy efficiency. We are the first and only real estate company in America that has earned Energy Star recognition thru the Partner of the Year Awards program five times. We are also one of a handful of firms working to help the U.S. Green Building Council to develop a Portfolio Program for certifying sustainable building operations through the Leadership in Energy & Environmental Design (LEED).

I have a strong personal commitment to these issues. I serve on California Governor Schwarzenegger's Real Estate Industry Leadership Council in support of his energy and sustainability initiatives, helped develop BOMA's education program on energy efficiency, and am a frequent speaker across the country on the topic.

I also serve as Chairman-Elect of the Building Owners and Managers Association (BOMA) International, and I am testifying on behalf of BOMA today.

About BOMA

BOMA International's members are building owners, managers, developers, leasing professionals, medical office building managers, corporate facility managers, asset managers, and the providers of the products and services needed to operate commercial properties. Collectively, BOMA members own or manage more than nine billion square feet of office space, which represents more than 80 percent of the prime office space in North America.

BOMA has a long history of finding operational solutions to energy efficiency through wars, oil embargoes, and concerns about the capacity of our electrical grids. With energy costs being the largest controllable operating cost in an office building, we understand the importance of energy efficiency from a financial perspective and environmental perspective. Too we understand the barriers to even greater energy efficiency due to lease structures coupled with the tremendous capital costs associated with many energy efficiency improvements.

In 2001, BOMA International adopted an energy policy and began a high visibility relationship with the Environmental Protection Agency's ENERGY STAR® program. We have been working towards benchmarkable efficiencies for some time.

We launched one of our most comprehensive educational initiatives through the BOMA Foundation and in partnership with ENERGY STAR, the BOMA Energy Efficiency Program -- BEEP. Not only has the program reached a broad audience, it has also caught the attention of corporate real estate executives from national companies such as Cushman & Wakefield, Grubb & Ellis, CB Richard Ellis, LBA Realty, Thomas Properties, and USAA Real Estate Company. If only 2,000 buildings adopt BEEP's no- and low-cost best practices over the next three years, energy consumption and carbon emissions will be reduced by 10% which will result in $400 million in energy savings and 6.6 billion pounds less carbon dioxide released in to the atmosphere.

BOMA's commitment to market transformation earned us the prestigious ENERGY STAR *Partner of the Year* award in 2007.

Last year, BOMA was instrumental in working with Congress to enact energy tax incentives for investment in new equipment to make buildings more energy efficient. This year, we hope Congress will extend this benefit through 2012 and increase the deduction from $1.80/square foot to $2.25/square foot and urge your support for the Extend Act (H.R. 1385) provisions in the energy bill that is expected to be voted on soon. Providing incentives to the commercial real estate industry to voluntarily upgrade equipment is critical to overcoming some expensive upfront costs for capital improvements that may otherwise never be carried out.

In just a few days at BOMA's North American Commercial Real Estate Congress, we plan to take our actions one-step further and encourage our members to accept a 7-point challenge to reduce energy consumption, including a target goal of 30 percent in energy reductions where achievable and cost-effective.

And we are confidant that we will be successful. There are many no- and low cost energy efficiency measures available to all types of real estate, and the public and private sector alike are already doing much of this.

No Cost Energy Efficiency Measures – Operations and Maintenance

Based on the successful practices of ENERGY STAR partners and BOMA members, EPA has identified key components for a successful energy management program.

Step 1: Benchmark the building to get a baseline Energy Star Energy Performance Rating between 1 and 100.

Step 2: Make an Action Plan to improve the Energy Performance Rating by identifying areas for improvements, setting realistic and achievable performance goals, and focusing on operational strategy and low and no cost improvements first.

Energy Reduction Tips:

- Regularly inspect all equipment and controls to ensure they are operating as designed. Estimated savings: 2.9 – 11.5%

- Calibrate thermostats by periodically walking through the building and comparing the thermostat setting with a hand held digital thermostat (preferably with 2 decimal places). Ensure thermostat setting equals actual space temperature. Estimated savings: 0.6 – 2.9%

- Adjust dampers to bring in the least amount of outside air necessary to maintain proper air quality (within code requirements). This will minimize the need to condition outside air. Estimated savings: 2.9 – 5.7 %

- Utilize janitorial best practices. Janitorial staff is often ignored when developing energy saving strategies, yet they typically account for almost 25% of the weekly lighting use, which is equivalent to approximately 7% of total building energy use. Estimated savings: 0.6 - 8%
    - Team Cleaning—janitors go through the building as a team floor by floor and the lighting is turned on/off as they progress through the building.
    - Coordinate—have the janitors coordinate with the security crew to walk through the building and turn off equipment that was inadvertently left on by the tenants.
    - Day Cleaning—janitors clean during the day while the lights are already on.

If all of these tips are implemented, energy savings of anywhere from 7 – 28 percent can be achieved. Therefore, it would be reasonable to expect a typical building to reduce energy by 17 percent and save approximately $37,000. These savings can be used to finance more capital intense improvements such as equipment upgrades.

Quantifiable Results for Changes to O&M

Note: 100,000 sf Blended rate = $.09/kWh Initial Energy Performance Rating = 50	**Low Estimate**		**High Estimate**	
	Energy savings %	Cost savings $	Energy savings %	Cost savings $
Function as Designed	2.9	$6,285	11.5	$23,839
Calibrate Thermostats	.6	1,300	2.9	6,285
Adjust Dampers	2.9	6,285	5.7	12,353
Employ Janitorial Practices	.6	1,322	8.0	17,338
CUMULATIVE EFFECT	**7.0**	**$15,192**	**28.1**	**$59,815**

No Cost Energy Efficiency Measures – Occupant Behavior

Occupants play a critical role in how energy is used in facilities, and in some instances, have more control over consumption than building owners, managers, and engineers. Occupants directly impact the three major energy consumption variables in office buildings: plug load, lighting, and heating, ventilation and air conditioning (HVAC). For example, building occupants may open windows, cover vents, leave lights and equipment on when they leave their offices, adjust thermostats, use more equipment than is intended for the space, or use equipment with a high energy intensity (i.e., X-ray machines).

Energy Reduction Tips:

- Turn off equipment. Motion sensors are the most effective, cheapest way to ensure that lighting is turned off. You can also install Watt Stoppers to turn off task lights, and ENERGY STAR equipment automatically powers down when not in use. Estimated savings: 0.6 - 5%

- Institute an Energy Awareness Program. Instituting an Energy Awareness Program is extremely low cost and includes little more than printing costs. Include Energy Awareness Program materials in orientation and regular tenant communications; display posters throughout the facility to remind occupants of their role in conserving energy; and remind tenants how energy efficient behavior impacts the profitability of their organization. Estimated savings: 0.4 – 1.7%

- Use ENERGY STAR Equipment. A considerable amount of ENERGY STAR equipment is already in use in commercial real estate. If we could get an additional 75% of NON ENERGY STAR equipment to become ENERGY STAR equipment, the savings would be almost 2%. Qualified products include computers, copiers, external power adapters, fax machines, laptops, monitors, multifunction devices, printers, scanners, and water coolers. Estimated savings: 0.6 – 1.9%

- Install Monitor and Computer Power Management Software. New chip technologies make power management features more reliable, dependable, and user-friendly than even just a few years ago. In U.S. companies alone, more than $1 billion a year is wasted on electricity for computer monitors that are left on when they shouldn't be. Companies using Power Management Software include Cisco, Pitney Bowes, Goodwill, Citigroup, Proctor & Gamble, Harvard University, Ford Motor Company, General Electric, Wal-Mart and BP. Estimated savings: 1.1 – 3%

- Harvest Daylight - use natural daylight in place of artificial light whenever possible. To best accomplish this, locate work stations requiring high illumination adjacent to windows, switch off lights when daylight is sufficient, and clean windows and skylights. Estimated savings: 0.3 – 1.9%

- Use Work Station Task Lighting. Work station task lighting directs lighting where it is needed and reduces the need for unnecessary lighting. Direct light at areas where

tasks are being performed and use lower wattage for overhead ambient lighting. Estimated savings: 0.5 – 1.4%

The cumulative effect to changes in occupants' behaviors may result in energy savings of 3.5 – 15.2 percent.

Quantifiable Results for Changes to Occupants' Behaviors

Note: 100,000 sf Blended rate = $.09/kWh Initial Energy Performance Rating = 50	**Low Estimate**		**High Estimate**	
	Energy savings %	Cost savings $	Energy savings %	Cost savings $
Turn off Equipment	0.6	$1,322	5.3	$11,486
Energy Awareness Program	0.4	759	1.7	3,684
ENERGY STAR Equipment	0.6	1,300	1.9	4,118
Power Management Software	1.1	2,384	3.0	6,502
Harvest Daylight	0.3	650	1.9	4,009
Work Station Task Lighting	0.5	997	1.4	3,034
CUMULATIVE EFFECT	**3.5**	**$7,412**	**15.2**	**$32,833**

Identify and Sequence Low Cost Improvements: Lighting

Lighting is another area where building operators can achieve dramatic financial returns with low capital investment and use off the shelf, proven technologies. Lighting accounts for approximately 29 percent of energy used in offices and the latest technology often has a less than one year simple payback.

Energy Reduction Tips:

- Change Incandescent bulbs to compact fluorescent (CFL) and high intensity discharge (HID) bulbs. In many buildings you may find areas where incandescent and halogen lighting is still being used, particularly in vanity areas, such as lobbies and areas with artwork. Also, check the lighting in restrooms, closets, server rooms, and some common areas. Estimated savings: 0.6 – 1.2%

- Convert T12 fluorescent lamps to T8 and T5 lamps, and install electronic ballasts in place of magnetic ballasts. Even if you just relamped your buildings three years ago, take a lighting survey again. Lighting continuously gets more efficient – and in less than ten years we have gone from 40 watt, to 32 watt to now 28 and 25 watt fluorescent lighting options. Converting to more efficient lamps and ballasts saves total building energy. Estimated savings: 3.5% - 9.7%

- Reduce lighting levels, delamp, and disconnect unused ballasts. Many office spaces are over lit, using four bulb fixtures when three or two bulbs would more that adequately light work surfaces. Take a look around at your common areas and tenant spaces. See if delamping opportunities exist. If they do, you may be able to go from four lamps in perimeter spaces down to two, and from four lamps to three in interior spaces. Be sure that you also disconnect the unused ballasts, as ballasts still use a significant amount of energy even though tubes have been removed. Estimated savings: 3.3 – 5%

- Program and periodically verify that the energy management system (EMS) is performing as intended, including full floor lighting sweeps and turning off all appropriate equipment. During construction, some building lights may be hard wired to the "on" position, meaning that EMS-programmed lighting sweeps will not turn off the lights. If this is the case, make the adjustment so it is not hard wired on in a permanent position. Also, some building managers recommend staying at work late one night a month after hours to ensure that the programmed lighting sweep is actually taking place and to make sure equipment is all turned off as intended. Estimated savings: 0.5 – 1.4%

- Install occupancy sensors to automatically turn off lights when physical movement stops. Estimated savings: 0.3 – 3.2%

- Replace inefficient Emergency Exit signs with high efficiency LED Exit signs. LED exit sign lamps last up to 6-7 years and use less than 2 watts whereas the older exit sign lamps last less than a year and use 40 watts. This saves energy in that these Exit Signs are on 24 hours a day, 365 days a year and will also reduce maintenance costs due to extended life. Estimated savings: 0.2 – 0.3%

- Install timer controls or photocells for exterior lighting to control lights in response to daylight. Reexamine how the exterior lighting is actually being used, and make sure that if there are timer controls on it someone is looking at the timer controls to make sure they are functioning properly. Look at the lighting outside the building to see if you can use some kind of sequencing as to when the lighting in certain areas comes on and off with tenant safety and security upper most in your mind. Estimated savings: 0.7 – 2.9%

Cumulative energy reduction from lighting could range from 9.4 – 25 percent.

Quantifiable Results for Changes to the Lighting Systems

Note: 100,000 sf Blended rate = $.09/kWh Initial Energy Performance Rating = 50	**Low Estimate**		**High Estimate**	
	Energy savings %	Cost savings $	Energy savings %	Cost savings $
Function as Designed	2.9	$6,285	11.5	$23,839
Calibrate Thermostats	.6	1,300	2.9	6,285
Adjust Dampers	2.9	6,285	5.7	12,353
Employ Janitorial Practices	.6	1,322	8.0	17,338
CUMULATIVE EFFECT	**7.0**	**$15,192**	**28.1**	**$59,815**

Identify and Sequence Low Cost Improvements: Controls

Control devices can be calibrated and monitored to more effectively reduce energy consumption.

Energy reduction tips:

- Adjust temperature. Physically walk through the building and talk with tenants to determine if the actual temperature is comfortable. The key point is to make sure that the temperature you have in the building is what tenants need (we are not advocating sacrificing tenant comfort or violating the terms of the lease). Have the lowest amount of dehumidification when the building is unoccupied and raise the indoor thermostat setting during the cooling season. Summer clothing is typically lighter, thereby requiring less air conditioning to keep the tenants comfortable. Conversely, winter clothing is heavier, thereby requiring less heat to keep the tenants comfortable. In addition, you should be able to reduce thermostats by a minimum of 10 degrees F at night, or weekends and holidays during the heating season. Estimated savings:1.1 – 2.9%

- Examine after hours usage/operating hours. Re-examine original assumptions regarding occupancy patterns and building usage. Talk to the tenants to see if they are actually using their space during the lease required operating hours. Do they really need the air until 9:00 p.m.? Or on weekends? If not, adjust building operating hours to reflect actual tenant usage. Estimated savings: 0.7 – 1.5%

- Adjust ventilation in low density or vacant space. Reduce exhaust and outdoor-air ventilation rates without sacrificing tenant comfort and within code requirements. Estimated savings: 2.9 – 5.7%

- Limit access to thermostats. Tenants typically feel that they should have access to the thermostats since they are paying for the energy. It is not uncommon for people to adjust thermostats too wildly--if they feel cold they will move the thermostat from 72 to 85 or conversely—if they feel hot, they will move the thermostat from 72 to 50. Prevent unauthorized adjustment by using EMS controls, tamper-proof locking covers on thermostats, or locking screws to prevent tampering. Estimated savings: 0.3 – 1.3%

- Optimize start up time and equipment sequencing. Start up, staging, and sequencing deal with *when* in the day your equipment is turning on and *how many pieces* of equipment are turning on at the same time. If every piece of equipment in the building is firing up at 8:00 a.m., your peak demand will be much higher than if you begin at 7:45 and bring your equipment online in a sequential manner over the next half-hour or so. Experiment with start-up times to determine the latest possible start up time while maintaining satisfactory comfort levels for occupants. You should also sequence the loads so as not to have too many pieces of equipment turning on at the same time. For example, for high rise buildings with multiple elevators there is some very simple solenoid (micro processors) equipment that is available that ensures that you never have two elevators starting and stopping at the same time. This is especially important when the utility company is measuring your peak demand. Estimated savings: 0.6 – 2.9%

- Schedule seasonal changes to thermostats. Temperatures in the cooling season need to be different from temperatures in the heating season. If you set the thermostats at 70 in the winter, you won't want to set the thermostat at 70 in the summer. Once again, this does not mean sacrificing tenant comfort, but identifying opportunities to reduce the building's heating/cooling needs. Combine this with building walk-throughs and speaking to tenants to assess their needs. Estimated savings: 1.1 – 5.7%

- Coast last hour of operations. Experiment to determine the earliest possible time the systems can be powered down while maintaining comfort. Outside air temperature changes toward the end of the workday. For example, during cooling degree days, the outside air may be a few degrees cooler than it was at noon. So, coasting the last hour of operations may not cause a noticeable difference in comfort level to the tenants. Estimated savings: 0.6 – 2.9%

In summary, energy savings for control measures may range from 7.3 – 22.9 percent.

Quantifiable Results for Changes to Controls

Note: 100,000 sf Blended rate = $.09/kWh Initial Energy Performance Rating = 50	**Low Estimate**		**High Estimate**	
	Energy savings %	**Cost savings $**	**Energy savings %**	**Cost savings $**
Adjust Temperature	1.1	$2,384	2.9	6,285
After Hours Usage	0.7	1,517	1.5	3,251
Adjust Ventilation	2.9	6,285	5.7	12,353
Limit Access to Thermostats	0.3	563	1.3	2,817
Optimize Start-up Times	0.6	1,300	2.9	6,285
Seasonal Changes to Thermostats	1.1	2,384	5.7	12,353
Coast Last Hour of Operation	0.6	1,300	2.9	6,285
CUMULATIVE EFFECT	**7.3**	**$15,821**	**22.9**	**$49,846**

Identify and Sequence Low Cost Improvements: Equipment

Building owners and managers should also examine potential equipment changes that can reduce energy consumption.

Energy reduction tips:

- Install variable frequency drives (VFD) & variable air volume (VAV) systems. Motors and fans may not need to run at full speed at all times, due to varying levels of demand placed on the system at different points throughout the day. VFD (motors) and VAV (fans) pay for themselves rather quickly. Estimated savings:1.5 - 9.3% (There are some buildings that have no VFDs or VAVs whatsoever and others that are using VFD and VAV in many systems, which accounts the large variation in potential savings.)

- Install heat recovery equipment. Optimize the conditioning of ventilated air by recovering heat that is being produced by other heat producing equipment in the building. If you have the opportunity to install heat recovery equipment in the building, you can save anywhere from 1.7 to 5.2%.

- Relocate thermostats to optimal locations. Thermostats are best located in a place that will give you the readings that you want to send to your HVAC system. Often thermostats were originally located in optimal locations, but over time through tenant improvements such as moving walls, duct work being blocked, and a variety of other

changes to the building, the thermostats are no longer in optimal locations. Estimated savings: 0.3 – 1.4%

The whole building energy savings potential for equipment changes ranges from 3.5 – 15.9 percent.

Quantifiable Results for Changes to Equipment

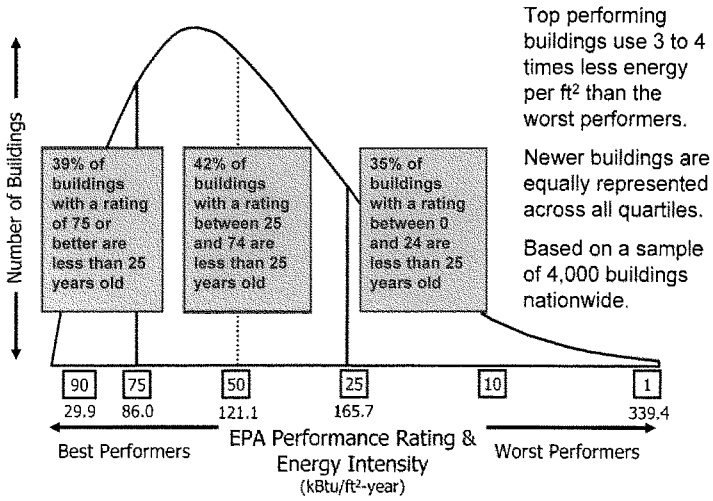
Note: 100,000 sf Blended rate = $.09/kWh Initial Energy Performance Rating = 50	Low Estimate		High Estimate	
	Energy savings %	Cost savings $	Energy savings %	Cost savings $
Install VFD or VAV	1.5	$3,251	9.3	$20,155
Install Heat Recovery Equipment	1.7	3,684	5.2	11,269
Relocate Thermostats	0.3	650	1.4	3,034
CUMULATIVE EFFECT	**3.5**	**$7,585**	**15.9**	**$34,675**

Conclusion

In conclusion, there are many no and low cost energy reduction measures that operators of public and private sector buildings can take that improve the performance of the building, reduce energy consumption, and save money – without sacrificing tenant comfort. BOMA believes that building owners and managers should continuously assess their energy usage and strive to be responsible environmental stewards.

We thank the Subcommittee for holding this important hearing, and look forward to working with Congress, the General Services Administration, Department of Defense, and other public and private sector partners to achieve our mutual goal of improving energy efficiency in the built environment.

Energy Performance Gap

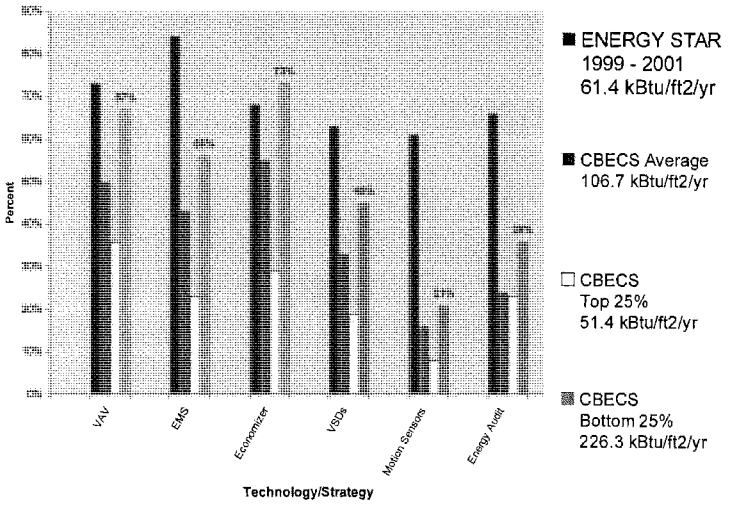


Top performing buildings use 3 to 4 times less energy per ft² than the worst performers.

Newer buildings are equally represented across all quartiles.

Based on a sample of 4,000 buildings nationwide.

Technology Doesn't Always Equal Performance



STATEMENT OF

DAVID L. WINSTEAD

COMMISSIONER

PUBLIC BUILDINGS SERVICE

U.S. GENERAL SERVICES ADMINISTRATION

BEFORE THE

SUBCOMMITTEE ON ECONOMIC DEVELOPMENT, PUBLIC BUILDINGS, AND EMERGENCY MANAGEMENT

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE

U.S. HOUSE OF REPRESENTATIVES

JULY 18, 2007

Good morning, Chairman Norton, Ranking Member Graves, and Members of the Subcommittee. My name is David Winstead and I am the Commissioner of the Public Buildings Service (PBS) in the U.S. General Services Administration (GSA). I am pleased to appear before you again to discuss how GSA is leading by example in energy conservation. Today, I will focus on four general areas: 1) GSA's recent history in energy savings; (2) Building operations and customer outreach; 3) Efficient building systems in renovations and new construction; 4) and Utility procurements. I will also offer a few ideas that may assist the Subcommittee in further promoting cost-effective energy strategies in the Federal facilities.

The Federal Government is the largest single consumer of energy in the United States. According to the Department of Energy, Federal buildings account for 30% of the Government's energy use. GSA has an opportunity—and a responsibility —to lead by example and to demonstrate how we can reduce energy consumption through efficient operations, customer outreach, new and efficient building systems, and cost-effective utility procurements.

GSA's Record of Conservation

GSA has a strong record of energy conservation. Between 1985 and 2005, GSA achieved the 30 percent reduction in energy consumption target set by the Energy Policy Act of 1992. We are making great strides in complying with the Presidential Executive Order 13423, which requires an additional 30% reduction from a 2003 baseline by the end of FY 2015. At the end of Fiscal Year 2006, we reduced the overall

energy consumption of our inventory by 4.7 percent compared to 2003 – which is double the reduction requirement of the Energy Policy Act of 2005, and more than 50 percent better than the goal in the President's new Executive Order (13423).

We currently operate our buildings at costs that are 9 percent below comparable buildings in the private sector, and we pay 4.2 percent less for utilities. Some of this reduction is attributable to the investments both Congress and GSA made in building modernizations and stand-alone energy conservation projects over the past 15 years. Another key reason for this reduction is a result of the concerted efforts of GSA Property Managers working closely together with our customers.

Of the energy used in buildings today, nearly 30 percent is consumed for lighting and office equipment. Early on, GSA saw this as an opportunity for conservation. During the early 1990s we extensively retrofitted existing buildings with new energy efficient lighting systems. In fact, we met our early goal of 20 percent energy reduction between 1985 and 2000 primarily through these retrofits. Since then, GSA has moved towards using a new generation of integrated lighting products, coupled with building-wide design strategies such as day-lighting, floor plates that maximize natural light, split task/ambient lighting system, light controls and new glazing materials. While some of these new efficient lighting products are initially more costly and technologically challenging, they provide greater energy savings in the long run since they not only reduce the amount of energy used for lighting, they also produce less heat. This reduces the amount of air conditioning needed to cool the building, as well as the size of

the mechanical systems needed, resulting in even greater energy savings. Although a simple concept to understand, this is an integrated, whole building approach to designing buildings.

Efficient Building Operations and Customer Outreach

We actively manage the energy consumption in our buildings and have achieved both energy and cost savings. In part, these lower costs are directly attributable to energy conservation projects but just as importantly, they are attributable to good energy management practices and aggressive good customer outreach efforts.

Energy Management Practices

Energy Tracking

We track energy consumption monthly at every GSA facility. Our system provides the status of energy trends as they relate to past or future building activities that affect energy consumption. This allows us to target opportunities for operations improvement or energy retrofits—as well as to understand those trends and compare our performance to similar buildings in our inventory and with that of the private sector.

Energy Audits

GSA continuously conducts energy audits of its real property inventory to identify life cycle cost effective energy conservation measures. We audit approximately 10% of our space inventory in any given year.

Building Operations

Over the past three years, 33 of our buildings reduced their energy consumption by more than 20 percent. We looked across our inventory to determine which locations had the most success in reducing energy. We reviewed with our Property Managers at those locations, the details of their energy reduction activities.

In a few buildings, we used ESPCs (Energy Savings Performance Contracts); where a private firm invests in the energy retrofit of a building and then is paid from the guaranteed savings achieved. In most of the other buildings, the Facility Manager identified things we and our customers could do to save energy. These included:

- Turning off perimeter units, lights and office equipment at the end of the business day;
- Not using space heaters;
- Eliminating some non-essential 24 hour equipment operations;
- Lighting retrofits;
- Adjusting lighting control systems to match the needs of the tenants;
- Replacing exterior and emergency lights with LEDs (Light-Emitting Diodes); and
- Replacing gas engines with electric motors.

In other instances, equipment (like servers) needing extra cooling was consolidated in adjacent areas. Old hot water heaters were replaced with tankless units—where you

don't waste energy keeping a reservoir of water hot. One of the most important actions we took however, was "just walking around" the building and talking to the tenants about what they could do.

While these are hardly all the actions our Property Managers have taken—they show that with concentrated effort, often dramatic improvements can be made, with cost effective expenditures.

Customer Outreach

As Property Managers, we understand that customer outreach is a cornerstone of our operation and we seek to inspire our customers to join us in the challenge of conserving energy.

In response to the Energy Policy Act of 1992, GSA embarked on a number of ambitious initiatives to educate our own Property Managers, and our customers through informational campaigns, customer sessions, workshops and annual Federal energy conferences. We also established a network of GSA Regional Energy Coordinators tasked with implementing our ambitious energy action plans as well as reaching out to our customer agencies.

Since the early 1990s, a number of Executive Orders, as well as the Energy Policy Act of 2005, reiterated the importance of energy conservation, efficiency and good management. GSA looked once again to our energy management infrastructure and our

experts to develop strategies and action plans to help us achieve our goals using new products and technologies. On the heels of the Energy Policy Act of 2005, the Nation witnessed the unparalleled destruction of Hurricane Katrina and the resultant energy shortages. The President issued a directive to Federal agencies imploring them to lead the Nation in conserving fuel and to review their existing operating policies. Following this directive, I issued a memorandum to our Assistant Regional Administrators (ARAs) for Public Buildings conveying our Emergency Energy Action Plan and identified three key elements:

1. Internal PBS facility operations and projects with immediate impact;
2. Customer outreach initiatives; and
3. Suggested workplace practices for tenants.

These were low-cost initiatives that could quickly reduce our energy usage.

Nationwide, our Regional Property Managers as well as our Regional Energy Coordinators rallied together to implement the emergency action plan. We saw a great deal of innovation and creativity in getting the word out and I would like to describe some of these initiatives.

- Using the information provided in my memorandum to the ARAs, the Northeast and Caribbean Region sent out reminders to customers to conserve energy, turn off lights, and shut down office equipment if it wasn't being used. Property Managers installed relatively low cost occupancy sensors to aid customers in their effort to turn off lights. At our Federal Building in Albany, NY, the Property

Manager offered to install occupancy sensors if the customers desired it in their workplaces.

- The Property Manager for our East Philadelphia Office in the Mid-Atlantic Region incorporated the suggestions presented in the Emergency Energy Action Plan in the April 2006 customer bulletin. She continues to feature energy tips and accolades for conservation in her bulletins. For example, she recognized the Lighthouse Cafe, the American Heritage Federal Credit Union and the Alrod Security Office for installing light sensors in her March 2007 bulletin.

- Our Property Managers, in the National Capital Region, continue their emphasis on energy conservation. I have included the brochure of their Energy Curtailment Program in the attached handouts and, as you will note, stresses the importance of an effective partnership with customer agencies for successful energy management. I will describe what the energy curtailment program can achieve in my discussion of advanced metering below.

These are just a few examples of building level customer outreach efforts. In each of our 11 Regions similar creativity and innovation can be found in our customer outreach as we search for common sense low and energy conservation measures. I have included other examples in the handouts accompanying my testimony.

Efficient Building Systems in Renovations and New Construction

Building Modernizations

While we continue to explore, test, and adopt new technologies in our construction program, some of our best opportunities for improving energy efficiency lie in building modernizations. We achieved tremendous efficiencies in the following modernizations:

- At the Charles E. Bennett Federal Building in Jacksonville, Florida, GSA used an integrated energy efficient design approach and achieved a reduction of nearly 24 billion British Thermal Units (BTUs) in energy consumption, a more than 60 percent drop. This is enough energy to power 208 homes for one year. The project received a U.S. Department of Energy Federal Energy and Water Management Award.

- The John J. Duncan Federal Building in Knoxville, Tennessee underwent a comprehensive building re-commissioning. Improvements included the installation of a new building control system, along with lighting upgrades and motion sensors, resulting in a savings of approximately 1.7 billion BTUs in FY2005, which exceeded the target goal of 33 percent. GSA also pursued a number of water management measures including the retrofit of restrooms with water-saving equipment, saving 400,000 gallons of water a year, and the installation of secondary water meters to reduce water sewage and runoff charges. The building successfully attained an Energy Star rating of 94 out of 100 and qualified for Leadership in Energy and Environmental Design certification.

Solar and Geothermal Energy

GSA is also incorporating solar and other on-site generated renewable energy technologies in our building design and retrofit programs consistent with the President's emphasis on the development of on-site renewable power. In Fiscal Year 2006, GSA used an estimated 3.3 billion BTUs in energy from self-generated renewable projects. We estimate that:

- 543.7 megawatt hours of the total came from GSA's 12 solar photovoltaic installations,
- 600 million BTUs came from GSA's two solar thermal projects, and
- 830 million BTUs came from the one completed geothermal project.

In Fiscal Year 2006, GSA also began construction of two new photovoltaic (PV) systems: The first is a 40 kilowatt array at the Trenton Courthouse Annex in Trenton, New Jersey. The second is a 377 kilowatt building-integrated photovoltaic system at the National Archives and Records Administration (NARA) facility in Waltham, Massachusetts. The NARA facility is covered by a completely integrated roof and solar system—the solar panels are the roof. The flexible, flat panel photovoltaic array is heat-welded into the roofing material and qualifies as a "Cool Roof" under the U.S. Environmental Protection Agency's Energy Star program. The project is estimated to save approximately $204,000 and 5.55 billion BTUs annually. It is now producing more than 50 percent of the building's electricity needs.

Additionally, at the Denver Federal Center, we funded a 1 megawatt pole-mounted solar photovoltaic array on 6.5 acres. This "solar park" will save $405,000 per year in electricity costs. The energy obtained from the solar park will not only serve the tenants of the Denver Federal Center, but the excess electricity will feed directly into the regional electric grid.

New Construction

Also in Denver, we have recently constructed the Alfred A. Arraj U.S. Courthouse; an excellent example of how a variety of sustainable design strategies can work together for energy and lighting efficiency. The public corridors of the building are oriented to the southeast to maximize solar exposure. Oversized windows provide visitors with a connection to the outdoors and magnificent views of downtown Denver. High efficiency triple-glazed windows minimize the need for heating and cooling. Internal light shelves bounce daylight onto light-colored surfaces so that it is then reflected deep into the interior. Overall, natural light is available throughout 75% of the building.

Last week in San Francisco, I attended the dedication of our newest Federal building which minimizes its energy consumption by taking advantage of favorable local climate conditions. This building is designed to self-ventilate its occupants through the simple movement of cool air from natural ventilation. That is a great example of avoiding energy use. The upper floors of the tower are not air conditioned at all. The design of this building takes advantage of, and is very sensitive, to the low humidity and moderate temperatures of the Bay area.

Energy Retrofits

In recent years Congress has approved between $26 and $30 million dollars in an annual Repairs and Alterations appropriation line item for Energy retrofits. We maximize the effectiveness of this investment by carefully analyzing every project and selecting those with the highest return on the investment. In simple payback terms (not as complex as the life cycle cost analysis we do) these projects ranged from 3.8 years for building "tune-ups", 3.9 years for lighting retrofits; 5.4 years for projects that addressed the power control systems; 6.2 years for improvements in chillers and boilers; to 21 years for solar projects. I have included a chart that summarizes these projects from last fiscal year—a collective investment of $29 million that results in saving 972 billion BTUs of energy, and saving $4.7 million every year. This is an average payback of just over 6 years, and if the long-term solar project is eliminated in the calculation, about 5 ½ years.

GSA FY06 Energy Program			
Project Category	**No. of Projects**	**Amount Funded**	**Average Payback**
Control/Commissioning	15	$3,251,320	3.85
Lighting	7	$1,327,668	3.93
HVAC	14	$13,113,774	6.11
Solar	3	$4,643,500	21.02
Other	8	$6,827,204	5.86
All Projects Avg. Payback	**47**	**$29,163,466**	**6.19**
Note: 1. Other includes projects with multiple Energy Conservation Measures that cover more than one category			

The Energy Policy Act also directs us to install advanced metering to measure our electricity use in buildings. We started installing advanced meters in the Washington DC and New York areas even before the law required us to do so. In the long run, advanced meters will save money by allowing us to manage power consumption more strategically. Perhaps more importantly, advanced metering will help us buy power at better prices, because we will know our use patterns in a way we just do not today.

I'd also like to show you just what we can do with advanced meters, using an example right here in Washington. This is just one building's example, but it is an example of what occurred across the District last week. You may remember that there was a heatwave last Tuesday, with temperatures reaching 98 degrees. GSA sent out an alert that electricity would be both scarce and costly and asked its Property Managers to activate conservation measures. Each Property Manager took action with the tenants in their buildings, to adjust operations and reduce the Government's demand for electricity.

As the chart in the handout illustrates, although the temperature on Tuesday was higher than the past two weeks, we actually used less electricity. This avoided the high cost of energy on a hot day—when we would have incurred severe price penalties if we had not reduced demand. In addition, GSA was able to contribute to the electric load management in the Washington area just as we did last summer by "shedding load" – sometimes allowing buildings to get a little warmer and more humid in the late afternoon – and thus, helping to avert a major brown-out in this area. We can only do this with advanced meters—where the Property Manager can see minute by minute what is going on in the building, and we can monitor all buildings from a central point.

Cost-effective Energy (or Utility) Procurements.

One other way GSA is able to save energy costs is to develop procurement strategies for natural gas, electricity and green power that achieve the best competitive price.

Public Utilities

To negotiate the best rates, GSA awards large public utility area wide contracts for electricity, natural gas, steam, chilled water, and water and sewage services that are regulated by public utility commissions, utility cooperatives or municipal utility companies. In many cases, these contracts allow for demand side management services, which include alternative financing for energy projects. In addition, GSA provides leadership in developing contracting vehicles, allowing end-users to meet multiple Federal energy requirements in both Federal statutes and executive orders.

It is important to remember that GSA procures energy not just for the GSA buildings, but government-wide. These area-wide contracts, as well as de-regulated energy purchases, and renewable energy are used by GSA building operators, and many other agencies which operate buildings. Seventy percent of the energy procured is used by 35 agencies for non-GSA buildings. This consolidated procurement gives the Government the best possible price.

Renewable Energy

GSA is a national leader in the purchase and use of renewable power from utility companies. The President's Executive Order requires that half of the renewable power purchased by Federal agencies to meet the EPACT 2005 statutory goals be purchased directly from new renewable sources.

In 2006, 4.5 percent of our electricity was generated from renewable sources or bought through renewable energy certificates, compared with the national average of 2.3 percent. We are proud of the progress we have made in this area, but we can do more. We have found more opportunities to buy renewable power at competitive prices as the cost for electricity and natural gas has increased. However, recent State and local regulatory policies and increasing customer preferences are driving increased demand for renewable power. If this trend continues without a corresponding increase in renewable supply, price premiums for renewable power may reach or surpass previous historical highs.

Over the last four years, GSA has purchased almost 950,000 megawatt hours of energy from renewable sources through competitive power contracts and through the use of green power programs offered by local distribution companies. For example:

The Binghamton Federal Building in New York State is the first Federal facility in the nation powered by 100 percent renewable energy. The power flows from a new wind turbine installed at the Fenner Wind Farm in the town of Fenner, New York. This project not only demonstrated GSA's commitment to energy independence and environmental stewardship, but also helped to spur the growth of a new wind power industry in a small community.

GSA awarded a contract to supply the National Park Service's Statue of Liberty and Ellis Island with electricity generated from 100 percent wind resources. The three-year contract will supply approximately 28 million kilowatt hours of renewable energy to the two landmark sites. The Statue of Liberty is now not only a beacon of freedom to the rest of the world, but also a welcome sign of the future in renewable energy.

Further Promotion of Energy Strategies

As I have illustrated, GSA is a true leader in energy conservation. But we can always do more. GSA could achieve even more advancements in energy conservation and efficient building systems, with additional statutory authority reforms are need in the following areas: 1) extending utility service contracting authority; 2) allowing funding flexibility for energy innovations; and 3) providing longer term life cycle cost authority.

Extending GSA utility service contracting authority from 10 to 20 years

As I mentioned earlier, GSA contracts for utility services (all forms of energy) on behalf of GSA and other Federal agencies. We are currently limited to a maximum term of 10 years but could obtain very competitive rates for renewable power if the term of the contract were up to 20 years, not 10. This is largely due to the current lack of renewable power plants and the large investment needed to develop new capacity. Despite the Government's general termination for convenience clause, a prospective power producer could obtain financing to construct new plants with a contract for 20 years. This is particularly true for wind-generated power.

The rates available to the Government for such long-term contracts are competitive with electricity rates today. Without the authority to contract for energy from renewable energy providers for more than ten years, GSA is unable to benefit from the relatively inexpensive energy they would generate, and unable to use the Government's purchasing power to spur new private sector renewable energy production.

Allowing funding flexibility for energy innovations

It might be helpful if there were some flexibility in capital projects (the ones for which we submit prospectuses) for GSA to incorporate energy savings technology that was not included in the design at the time the prospectus was submitted.

Allowing for longer-term life cycle cost analysis

The National Energy Conservation Policy Act of 1978 (42 U.S.C. § 8254) requires that the life cycle cost methods be applied to the design of new Federal buildings and the application of energy conservation measures to existing Federal buildings and *set the maximum expected life of a building of system at 25 years.* Certain building systems have longer expected life cycles;, a time horizon of more than 25 years for such systems would allow the Government to make more cost-effective investment decisions. These systems include fuel cells; building fabric systems such as curtain walls; and certain mechanical equipment.

Conclusion

GSA is leading by example: we demonstrate how a combination of operational diligence, coupled with customer outreach and participation, good energy management practices and targeted energy retrofit projects, can yield handsome results.

Thank you for the opportunity to talk about GSA's leadership role in this area. I look forward to working with the Subcommittee on this matter of vital interest to our country.

GSA

GSA Public Buildings Service

DEC 6 2005

MEMORANDUM FOR ASSISTANT REGIONAL ADMINISTRATORS, PBS

FROM: DAVID L. WINSTEAD
COMMISSIONER (P)

SUBJECT: Presidential Directive on Energy and Fuel Conservation by Federal Agencies

On September 26, 2005, President Bush issued a directive to the heads of executive departments and agencies to take appropriate actions to conserve natural gas, electricity, gasoline, and diesel fuel at their facilities to the maximum extent consistent with the effective discharge of public responsibilities. This is in response to the recent hurricane activity in the Gulf Coast region and the President's direction for the federal government to conserve fuel (see attached Presidential Directive).

The President expects that all managers of Federal Government sites be diligent in the pursuit of energy conservation. Certain regional facility managers will have a higher risk of shortage impacts and must be especially aggressive to minimize them. Further, all regional facility managers in Federal sites in regions where natural gas shortages are possible should conserve, especially in periods of peak consumption during the upcoming winter season.

This memorandum transmits a three-part internal facility emergency energy Action Plan which contains the following elements:

1. Internal PBS facility operations and projects with quick impact;
2. Customer Outreach initiatives to reduce energy consumed by building mechanical and lighting equipment; and,
3. Suggested workplace practices for tenants.

Internal Facility Operations & Quick-Impact Projects

Information has been already been transmitted to your regional energy coordinators identifying building energy consumption sorted from the highest consumption levels to the lowest. Funds permitting projects will be funded according to their impact. Our priority is to invest in projects that can be implemented quickly for the top energy-consuming buildings. There are many other operational changes that do not directly affect our customers' operations outlined in the Action Plan. All of these ideas should be considered as you develop aggressive local implementation plans.

U.S. General Services Administration
1800 F Street, NW
Washington, DC 20405-0002
www.gsa.gov

Customer Outreach Initiatives

This guidance does not set uniform solutions for all buildings, because our customers' functions and missions vary widely. However, we must conserve energy–30% of the energy consumed in our buildings is for lighting, and 25% is for space heating. There is no one solution that will not inconvenience customers and conserve energy. We look to you for the creative solutions, and expect that you will work with the building tenants to create local solutions that accomplish both their mission needs and the government-wide goal of reducing energy consumption. One of our roles will be to share with all regions the good ideas from any source. The Action Plan describes the four main possibilities in this arena.

Workplace Practices for Tenants

Energy awareness materials will be sent to you specifically for things tenants can do to reduce consumption. Many are outlined in our letter to customers (copy attached). We encourage you to adapt and re-use this letter on a regional and local, building or site level. It is important that you also display these awareness materials as part of the way we communicate with our tenants. In this portion of our efforts, the relationships that PBS associates have developed locally will have the greatest effect. Without the personal, local contact, we are unlikely to see significant change in people's behavior.

We are already receiving good plans from regional staff, addressing the internal operations changes we can make without affecting customers' operations, and good ideas for quick-impact projects. Now is the time to begin developing plans to discuss this matter with customers locally, and to jointly develop plans for energy reduction.

If you have any questions related to this effort, please contact Sam Hunter, Kevin Kampschroer, or Mark Ewing. The entire energy staff of the Office of Applied Science is available as well.

Thank you in advance for your cooperation.

Attachments:
1. Presidential Directive
2. GSA Fact Sheet and Action Plan on the Presidential Directive to Reduce Energy and Fuel Consumption by Federal Agencies
3. PBS Draft Letter to GSA Customers
4. Reporting Guidance and Suggested Energy and Fuel Conservation Guidance Based on Department of Energy's Recommendations
5. GSA's response to the Department of Energy on its agency plan to conserve energy starting November 1 through April 30, 2006
6. Talking Points on the Presidential Energy Directive for Regional Administrators and PBS Assistant Regional Administrators

cc: Regional Administrators

GSA

GSA Public Buildings Service

Robert N. C. Nix Sr. Federal Building & US Post Office

GSA Leasing Alliance Office

BULLETIN #7 **April 2006**

From the Property Manager

Melissa Condran

Thank you for attending the Building Security Committee. As a federal community we must rely on each other as well as the US Marshal and FPS for the safety and security of the building. As a result of the most recent Building Security Committee Meeting, the US Marshals are providing a mandatory building-wide security training for all tenants of the Robert N. C. Nix Federal Building. There will be two types of training conducted, a training for the general occupancy emergency procedures and a training geared specifically toward individuals that have direct involvement in the emergency procedures, such as Floor Captains and Monitors. Valuable security and safety information will be provided at both sessions. If you are a floor captain/alternate/monitor and cannot attend the designated meeting, please attend the general session. We encourage you to ensure that everyone receive the proper training on how to respond in the event of an emergency.

We ask that you encourage your staff to attend one of the following sessions. We understand that you may not be able to send your entire staff, however, we do ask that you send representatives that will be able to disseminate this information to you and your organization.

Training is expected to last no more than one hour. Training will be held in **Court room #5 on the second floor of the Nix Building**. The training dates are:

General OEP Training

Monday, May 8, 2006 @ 1:30 PM

Wednesday, May 10, 2006 @ 9:00 AM

Floor Monitors, Captains and Alternates OEP Training

Tuesday, May 9, 2006 @ 1:30 PM

Construction Update

The US Bankruptcy Court room #1, located on the second floor, is currently undergoing renovations through early summer. There should be minimal disruption to the building operations while this project is in progress.

If there is any disruption caused by the project, please notify the service desk at 215-446-4773, immediately.

Also, please remember to inform the Property Management office of any alterations and construction projects that impact the building systems or the space layout. Please coordinate all contractor logistics with the property management office and provide advanced notice to us if any contractor will need access to roofs and telephone closets. All contractors are required to be cleared, any contractor not cleared will need to be escorted. It is the agency's responsibility to provide the escort for the entire duration of the project.

Special Thanks!

Thank you all for your continued cooperation with the energy conservation measures! With your help and the assistance of BRCS, we were able to use 34% less energy than this time last year. Keep up the good work!

Remember to turn off computers, printers and monitors over the weekends. While we have made great strides toward reducing our energy consumption, there is always room to improve. Thanks for making the effort!

In the News.....

Wil Oliver will be joining the BRCS/ GSA team. Wil will be planning and estimating building projects for both GSA and the tenants. We are excited to have in on our staff.

Also, please remember to close all windows that may be opened during the day. Agencies will be held responsible for any damages that may result. Rains and severe temperature drops can and will impact our building systems. Please remember to check that all windows are closed before leaving for the day.

GSA

GSA Public Buildings Service

Robert N. C. Nix Sr. Federal Building &
US Post Office

GSA - building solutions

To All Federal Agencies,

President Bush recently issued a directive to all federal agencies to assist in improving energy conservation as a direct consequence and effect of the hurricanes Katrina and Rita. To help alleviate the potential energy supply disruptions this winter, President Bush is requiring all agencies to provide energy conservation plans to dramatically reduce energy use in the public sector, and to set a good example for our nation. The collective goal of these energy conservation efforts and efficiencies is to save public money, protect the environment, and strive to minimize energy shortages this winter and beyond.

To respond to President Bush's directive to all federal agencies, GSA is committed to reducing energy consumption in our facilities this fiscal year and will take any and all appropriate actions to conserve natural gas, electricity, and fuel oil to meet these additional energy goals. However, GSA will need the assistance and help of all our tenants located in federal facilities to use energy efficiently in their offices. The following are specific examples of how the federal community can assist us in reducing energy consumption and abide by the President's directive.

- Turn off all fluorescent and incandescent lights at night and when not in use.
- Turn off all office equipment (Computers, Printers, Copiers, etc.) each night and when not in use. Turn off computer if leaving office for 30 minutes.
- Purchase office equipment that is Energy Star compliant. Ensure that Energy Star power down features are activated.
- Use task lighting and turn off general lighting, where it is feasible.
- In areas with sufficient daylighting, turn off lights.
- Turn off all display and unnecessary lighting.
- Turn off fluorescent lighting if leaving the area for five minutes and turn off incandescent lighting when leaving areas for any period of time.
- Ensure personal appliances, such as coffee pots and radios are turned off at night.

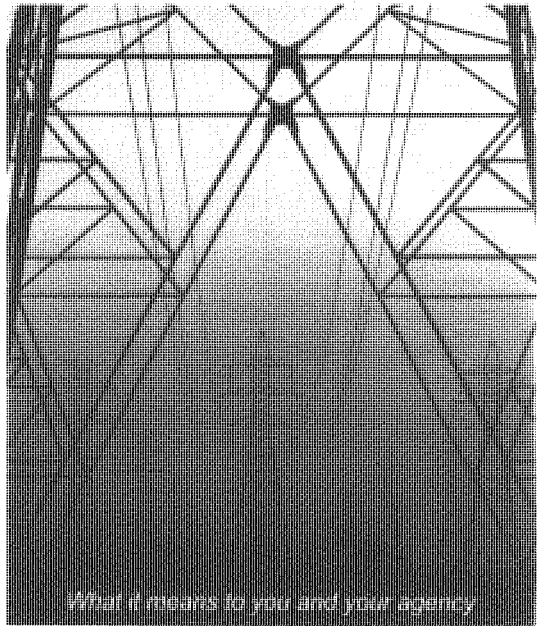
GSA recognizes that all federal agencies are responding to the President's directive in their own way, but we also recognize that we can't reach our goals without your help.

Thank you in advance for your cooperation.

GSA

NCR Public Buildings Service

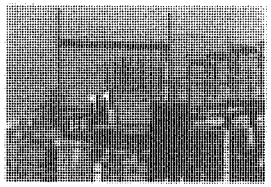
National Capital Region Energy Curtailment Guide



What it means to you and your agency

Frequently Asked Questions *(cont.)*

How and when will notifications be made?
Whenever possible, PEPCO will warn us of a potential curtailment at least 12 hours in advance.



The NCR will notify the Service Centers by email and/or telephone.
GSA Public Relations will also be contacted to generate an immediate press release notifying all of the immediate execution of Level IV and III load shedding in GSA buildings.

What is a Gold day alert?
Gold day alerts are a forecast of peak demand on the power grid. We receive an email alert notifying us of the possible gold day usually by 10 a.m. On those days, The Washington Post will include a "curtailment alert" graphic along with its customary weather forecast. The alert will also be available at our GSA website, http://www.gsa.gov/gsa/cm_attachments/ GSA_DOCUMENT/ power_alerts_R2H91Q_0Z5RDZ-i34K-pR.pdf

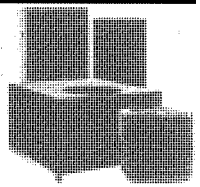
When GSA is informed of a gold day alert, they will notify the Service Centers by email and telephone to Execute Level I load shedding of all GSA buildings immediately.

If curtailment is to proceed, PEPCO will send us a confirmation notice at least 30-minutes prior to curtailment. At this point we will notify the Service Centers confirming the curtailment, and the estimated time frame of the curtailment. Due to changing electrical demands, PEPCO Energy is not always able to give us a 12-hour warning. In this case we will receive at least two hours notice and will notify the Service Centers at the earliest possible time.

What will be curtailed?
Typically, we target cooling related equipment (chillers, fans and pumps) and lighting. We also have agreements with certain agencies to avoid using other high-demand equipment during curtailment periods.

A variety of curtailment strategies have been identified for NCR buildings. These strategies could include some of the following building systems in part or whole. Methods of curtailment include, but are not limited to; adjusting A/C systems temperatures; cycling A/C systems on/off or shutdown for the duration of the curtailment; ventilation systems shut down; and/or non-essential lighting being turned off.

Which buildings are affected by curtailment?



Group I

- All Government owned Buildings in the National Capitol Region not identified in group II.
- All Leased Buildings where GSA pays the utilities not identified in group II.

Group II

The following buildings are to adjust thermostat settings and turn off non-essential lighting. However, A/C equipment may not be included in the curtailment due to the size/condition of the equipment or because of the type of occupancy that is served by the A/C equipment.

- Museums
- Laboratories
- Test facilities
- Medical facilities
- National Security C3 Operations. *(identified/justified as such)*

How can you help?
In past summers, many buildings/tenant agencies have assisted GSA in meeting the curtailment goals by turning off non-essential equipment when notified of a pending curtailment. Examples of such items include lights, window air conditioners, coffee pots, unattended computers, and copy machines. These efforts contributed significantly to our ability to successfully reach the desired electrical load.

The closing of window blinds or shades on the east, south, and west sides of a building is also especially valuable. At the same time, we ask that windows in the affected buildings not be opened. This may be a difficult request to honor, but opening the windows will increase the length of time for the building to cool once the air conditioning resumes. The buildings will ultimately be more comfortable if the windows remain closed.

What can be done when building temperatures increase?
Departments have accommodated staff during curtailment by allowing flexible work schedules and by relaxing dress codes to offset the increased temperatures.

Energy Curtailment Ideas

Note: These energy tips are intended to curtail energy consumption. Energy efficiency and energy conservation ideas are different and intended to save energy while keeping lifestyles and work related efforts the same or even improving them.

Use common sense. If it's not being used, turn it off. This includes lights in sunny rooms, lights in rooms not being used, and computers at times when not being used. Close unheated rooms. Reduce exterior decorative lighting.

Lighting:

Check around your office to see if some small changes in your lighting can help you save energy.

It takes two 60- or four 40-watt light bulbs to provide as much light as one 100-watt light bulb.

Use the lowest wattage light bulb to accomplish the task at hand. In other words, don't use a 100-watt light bulb when a 60-watt will do. Whatever light bulb you use, be careful not to exceed the manufacturer's recommended wattage for the fixture.

The current generation of **compact fluorescent light bulbs** screw into the same bulb socket as regular light bulbs and produce the same quality of light. A compact fluorescent light bulb uses 70 per cent less electricity and lasts up to 10 times longer than an incandescent light bulb.

Computer use:

Anytime you can turn your computer off, it will save energy. However, turning the computer on/off several times a day may cause excessive wear and tear and shorten its life expectancy. Most computers have energy saving "sleep" features that save energy when the computer is not being used.

Water Heating / Cooling:

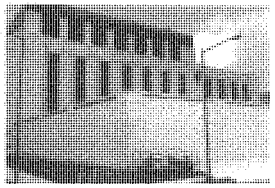
Turn down the thermostat on potable water heaters. Each 10 degrees reduction in water temperature generally saves 3 to 5 percent on water heating.

Turn potable water cooling off.

Thermostats:

By adjusting your thermostat at night, you will generally save 2% of your heating/cooling costs for each degree lowered.

What is Curtailment?



Curtailment is the reduction of electrical consumption during requested peak usage periods. These periods usually occur during the summer between mid afternoon and early evening. They usually will not last longer than 6 hours, and historically have started between 12:30 and 1:00 PM.

What is the Electrical Curtailment Program?

GSA generates less than 5 percent of its electrical demand at its central utility power plant. The remainder is contracted with PEPCO and a supplier. These contracts include active participation in their Electrical Curtailment Program. The goal of the curtailment program is to control and reduce the use of electricity during peak demand periods. Participation in this program allows PEPCO to distribute its electrical load evenly to its consumers, forestalling critical shortages.

What are the benefits of the curtailment program?

The agreement provides a financial benefit to the Government through lower electrical rates. At the same time, PEPCO benefits by avoiding the purchase of expensive power from other suppliers and eliminating the need to construct new power generation facilities. Additionally, through good stewardship, we all benefit by lessening our environmental impact on the planet.

It is our intent to meet the goals of the contract while minimizing the impact to normal building operations. The Government will benefit in cost savings if we all voluntarily reduce energy consumption on an ongoing basis.

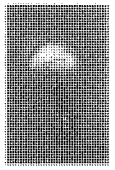
The curtailment program is not intended to adversely effect Federal Government business or inconvenience building tenants.

How long does the program last?

Our participation usually starts June 1st and continues through September 30th. However, with the recent seasonal temperature swings we've experienced, expect notification to execute load shedding at anytime of the year.

GSA Regional Energy Curtailment Program

Background:



On 24 August 2005, Mirant Corporation shut down the Potomac River Generating Station (Plant located in Alexandria, VA.). The remaining power sources for central Washington DC are two transmission lines. PJM & PEPCO were ordered to develop plans of action that addressed the risk factors of providing electrical reliability to central Washington DC. It was estimated to take 18-24 months to upgrade the existing two main transmission lines to make them capable of providing a reliable power supply to central Washington DC without the Potomac River Plant in operation.

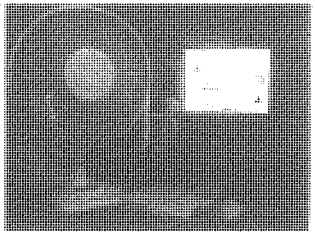
Objective:

The goal of the program is to control and reduce the use of electricity during peak demand loads to prevent the total loss of power to the building.

NCR and PEPCO (our provider of electricity) work together to reduce energy usage during peak demand periods. We may be called upon to reduce our usage for 16 periods of not longer than 6 hours each. These normally occur anytime between June 1st and September 30th. Whenever possible, PEPCO gives us 12 hours warning to prepare for curtailments. However, we may be asked to curtail with as little as 2 hours notice. Optimally, we usually know a day prior.

Reason:

The electrical demand in our area is constantly increasing. In peak periods it can exceed the capabilities of the power generation and transmission system serving the Washington DC area. The energy curtailment program assists PEPCO in evenly distributing electrical load during peak demand periods which could cause critical shortages resulting in power interruptions.



Load shedding plans should include 3 to 4 load levels based on how critical they are to maintaining buildings operations. (Tenability of space) Determine what is most critical to your building and work backwards.

The following indicates the minimum standards for levels in the NCR. Individual building management may add items or move them to a higher level (like from level III to IV) based on their buildings requirements and Building Operating Plan. They can not change them to a lower level.

Level I

- -Potable water cooling/ heating
- -Elevator penthouse / mechanical space cooling
- -Unoccupied space conditioning (storage rooms, warehouse, loading dock areas.)
- -Secondary or tertiary HVAC, (not including critical equipment cooling)
- -Temperatures increased
- -A/C systems cycling on/off (specific to building and type equipment)

Level II

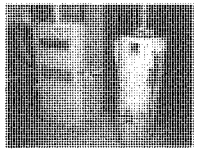
- -Common area lighting above 9 foot-candles
- -Perimeter fan coils
- -Reduce number of elevators in operation
- -Deactivate automatic doors (except ADA compliance.)
- -Booster pumps (depending on specific building conditions)
- -Variable Frequency Drives

Level III

- -Data communications
- -HVAC
- -All elevators / vertical transport
- -All office lighting (except life safety)

Level IV

- -Shed all equipment and systems EXCEPT:
- -Life-safety, fire prevention, health / medical clinics
- -Emergency Operations centers
- -Command centers



GSA

NATIONAL CAPITAL REGION

UTILITY CURTAILMENT GUIDE

FOR BUILDING MANAGERS

By

Service Delivery Support Division
Maintenance and Energy Branch

24 May, 2006

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INTRODUCTION

This guide is provided as assistance to GSA, NCR personnel who are directly responsible for implementing energy curtailments as requested by local utility companies. While many buildings are not on a formally recognized curtailment plan with the utility company, all facility managers are required by NCR policy to cooperate with utility company curtailment requests. The vast majority of curtailment requests will be for summer season reductions in electrical demand; and, while this guide emphasizes electrical curtailments, the processes and recommendations made for electrical curtailment maybe applied generically to the need for curtailments involving other types of utilities. Since requests for utility curtailments typically need to produce results in one half hour or less, the only viable means for your prompt, effective reaction to curtailment requests is by use of a well conceived plan, established in advance, customized to specific facility and customer agency operations, and shared in advance with all effected personnel, including the customer agency and the utility company. The most likely alternative to the prompt, effective implementation of your utility curtailment plan may be an unscheduled, total loss of service.

The *basic initial task is to identify potential load reduction measures* at your facility. In broad terms, you may identify and separate load reduction measures into basic categories: (1) Life, safety and security load; (2) mission critical loads - for you and your customer agency; and (3) non-critical loads.
Establish a system to alert all building occupants; preferably an automated system utilizing email, public address announcements, voice mail, etc.

Typical utility company voltage reductions will approximate 5%. Your plan should include immediate shut off of all equipment, operating and agency equipment, which is not automatically protected; and, is sensitive to, or potentially damaged by, voltage drops.

Once developed, your utility curtailment plan should become a permanent part of the facility's Building Operations Plan (BOP).

The development of a curtailment plan logically falls into three major parts. This guide is structured to reflect those major parts in order to best serve as a guide and checklist for development and implementation of an effective utility curtailment plan. This guide is intended to serve as a

constructive outline but does not attempt to address all conditions you will encounter in specific buildings and facilities.

PART ONE covers the general considerations and conditions that are critical to your establishment of a curtailment plan that will work well, without a major, adverse impact on your customers.

PART TWO covers facility operations and the development of the facilities operations portion of your curtailment plan. This part addresses mechanical areas, systems, and equipment that should be considered as a part of the operational details of your plan.

PART THREE covers customer agency involvement, customer agency operations, and the development of the customer agency portion of your curtailment plan. This part highlights the need for occupant agency cooperation with the facilities manager in the development and implementation of an effective energy curtailment plan.

PART THREE covers the levels of curtailment and what equipment and steps are taken to meet the reduction in energy for each. It provides an example of what should be in the Building Operating Plan (BOP). The curtailment bulletin and matrix are attachments. Electronic copies of both are available from the Maintenance and Energy Branch.

PART ONE

GENERAL CONSIDERATIONS

The development of an effective utility curtailment plan will require the involvement and technical inputs from operating personnel and the occupant agencies.

- *Everyone must know **what** they are expected to do, **when** they are expected to do it, and **how** long they have to do it.*
- Energy *curtailment success hinges on occupant agency cooperation.*
- *Establish clear communication chains* for operating personnel, occupant agency, and the utility company.
- Try to establish an *automated means to promptly notify all players.*
- *Be sure you are familiar with utility company contacts* that will be involved with curtailment requests.
- Identify building operating equipment curtailment actions and *insure that the occupants understand what impact the actions will have on them,* what impact their employees will notice.
- Make your *curtailment plan a permanent part of the BOP.*
- Make sure your curtailment plans *allow for critical agency operations.*

IN-house technical assistance is available by contacting your Service Center Representative in Maintenance and Energy Branch (WPYE).

PART TWO

Facility Operations will be a critical part of your curtailment plan. It involves actions that you will take in order to curtail energy being consumed by building operating equipment. What can or should be done to curtail energy use will vary greatly, by building. You and your building operator must combine the application of mechanical systems knowledge, knowledge of customer agency operations, and common sense in order to develop a good curtailment plan. When you and your foreman, or contractor, identify what equipment and operations may be curtailed, be sure that no actions impinge on the operations of any life safety or security systems.

Reduction of elevator service generally does not save enough energy to warrant the disruption that taking cars out of service will cause. The following curtailment actions should be considered for elevator or escalator systems.

- **Turn off hoist-way lighting.**
- * **Escalators should be turned off.**
- **Hydraulic and Motor Generator type elevators** (ie. freights) may be secured if operations allow.
- **Solid State elevator systems should remain in service.** (Normal voltage drops would be 5% and solid state equipment elevator equipment is designed to function normally up to a voltage drop of 20%)
- **During curtailments, **adjust elevator machine room temperatures** to 90° F in summer operations, and 55° F in winter operations. (Elevator machine rooms normally have air conditioning units dedicated the elevator machinery.)
- Insure that the elevator contractor, or shop foreman, are on your notification list. In the event of electric power loss, there will be elevator entrapments; so, it is critical that elevator personnel are aware of all electrical curtailments or voltage drops.
- **Questions regarding the type of elevator equipment in your building** may be directed to the Maintenance and Energy Branch, Vertical Transportation Section, on 202-708-9010.

* Escalators are not intended for use as stairs when not operating. This could cause injury in the event of mechanical failure of portions of the equipment.

** Elevator machine room temperatures are to be maintained between 85° & 90° F in the cooling season and between 55° & 60° F

Some of the biggest energy users are your **heating, ventilation and air conditioning systems (HVAC).** The following curtailment actions should be considered for your HVAC systems.

SUMMER OPERATIONS:

- **Allow building temperatures to increase** during curtailments, **to 74 to 77 degrees.**
- **Increase the temperature of chiller output water,** to reduce electrical consumption.
- **Secure all cooling equipment not needed to maintain** building temperatures of **74 to 77 degrees.**

- **Utilize free cooling systems** to the maximum extent possible.
- **Secure** any **unnecessary pumps.**
- **Secure Air Handlers** that serve remote unoccupied areas, storage spaces, mechanical spaces, or loading docks.
- **Duty cycle supply and return air fans** where practical, while maintaining approx. 20 CFM per occupant.
- All outside **intake dampers should be secured to the maximum extent** possible, while still providing approx. 20 CFM per occupant.
- **Exhaust fans should be secured** where possible; consider building exhausts, toilet exhaust, garage exhaust, and cafeteria exhaust during periods other than peak serving times.
- **Secure the building envelope.** Ensure that windows, entrance doors, garage doors, and loading dock doors remain closed to the maximum extent possible.
- **Secure lighting** to reduce illumination to minimum levels. Where the lighting system allows, shut off some corridor lighting and provide only minimum illumination in public spaces.
- Where feasible, **schedule high energy use processes for off peak periods. Consider pre-cooling** as a potential means to avoid cooling load during peak demand periods.
- If your facility has a functional **Energy Management Control System**, it **should he programmed,** in advance, to incorporate your summer curtailment actions and decisions.

WINTER OPERATIONS

- Allow **building temperatures** to **decrease** during curtailments, **to 68 to 62 degrees.**
- Pressure reduction or securing of **steam stations** should be considered on an individual basis.
- Secure all heating equipment not needed to maintain **building temperatures of 68 to 62 degrees.**
- **Perimeter heating systems** should be evaluated on an individual basis for setback control.
- **Secure** any unnecessary **pumps.**
- **Secure air handlers** that serve remote, unoccupied areas, storage spaces, mechanical spaces or loading docks.
- **Duty cycle supply and return fans** where practical, while maintaining approx. 20 CFM per occupant.
- All outside **intake dampers should be secured to the maximum extent possible**, while maintaining approx. 20 CFM per occupant.
- **Exhaust fans should he secured** where possible; consider building exhaust, toilet exhaust, garage exhaust, and cafeteria exhaust during other than peak serving times.
- **Secure the building envelope.** Insure that windows, entrance doors, garage doors, and loading dock doors remain closed to the maximum extent possible.
- **Secure** items like **entrance air curtains and loading dock heaters.**
- **Secure lighting** to reduce illumination to minimum levels.
- If your facility has a functional **Energy Management Control System,** it **should be programmed,** in advance, to incorporate your winter curtailment actions and decisions.

PART THREE

CUSTOMER AGENCY OPERATIONS and COOPERATION

Any effective energy curtailment plan requires that you obtain customer agency cooperation and involvement. Establishing an effective partnership with building occupants is the key to your success.

Your development of a curtailment plan must include consultation with the customer agency, both to incorporate allowances for their critical operations and to gain their cooperation with the overall curtailment effort. Curtailment of just your facilities operating equipment will not guarantee energy reductions adequate to avoid a total loss of service. Both the customer agency and you have a vested interest in avoiding an unscheduled, total loss of service. Occupant cooperation is vital, to the effective reduction of lighting since most of the lighting is within occupied spaces, and to the effective reduction of consumption by agency business machines. In exchange for customer agency cooperation, your plan must include reasonable allowances for the equipment and operations that the customer identifies as critical.

You may use the following as a basic checklist of curtailment actions that require customer cooperation.

- **Turn off lighting in all spaces not being used,** conference rooms, auditoriums, storage spaces etc.
- **Turn off lighting in offices that have windows** that can provide adequate natural lighting.
- **Turn off lighting in office spaces.** As conditions allow, **shut off overhead lighting or task lighting** and utilize only one or the other. Turn off fluorescent lighting when leaving an area for 5 minutes or more. Turn off incandescent lights whenever leaving an area.
- **Turn off decorative and display lighting.**
- **Turn off any business machines** that you can temporarily work without. Copiers, printers, coffee pots, portable heaters, etc.
- **Ensure that ventilation grilles and fan coil units are not blocked** by books, files, plants or debris.
- Working with the GSA facility manager, **initiate actions to enhance employee awareness** of energy conservation in general and specific measures that apply to curtailments.
- Where feasible, **schedule high energy use processes during off peak hours.**
- Customer agency should establish an automated system to **advise all employees when a utility curtailment is in effect.**
- Agency should **allow casual dress** during periods of electrical curtailment.

Maintenance and Energy Branch has a Customer Agency information pamphlet for distribution to your customers. Contact your WPYE representative for copies.

PART FOUR

NOTIFICATIONS

Responsibilities and Procedures:

Building Managers:
Develop / update your curtailment plan. This shall include: List of equipment and circuits to be turned off; total watts and what level they are to be shed. Who is notified and who executes the plan. (Building Manager, O&M/CFM Contractor's building engineer, etc.) Building managers are responsible for notifying their Customer Agencies for their participation and support of all levels of curtailment.

Service Centers:
Collect and review Building manager's plans and submit to WPYE. Establish plan on how to notify Building Mangers. Provide a list of who in the Service Center is to be notified by WPYE?

Maintenance and Energy Branch (WPYE):
Manage the Energy Curtailment Program

Notify the Service Centers by email, telephone, and also contact GSA Public Relations who will generate an immediate press release to execute each Level load shedding of all GSA buildings immediately.

Gold Day Alert
A Gold Day is identified as a day when the temperature and other conditions will be well above average and electrical demand is anticipated to exceed peak level.

When notified of a gold day alert WPYE will notify the Service Centers by email and telephone to **Execute Level I load shedding of all GSA buildings immediately**.

Utility Services Curtailment
PEPCO will send WPYE and designated representative in each Service Center, a confirmation notice as early as possible prior to curtailment and the estimated time frame of the curtailment.

WPYE Will notify the Service Centers by email, telephone, and also contact GSA Public Relations who will generate an immediate press release to **Execute Levels I and II load shedding of all GSA buildings immediately**.

Utility Services Mandatory Emergency Curtailment
WPYE Will notify the Service Centers by email, telephone, and also contact GSA Public Relations who will generate an immediate press release to **Execute Levels III and IV load shedding of all GSA buildings immediately**. (level III is done during preparation to evacuate the building, level IV is during the evacuation.)

All buildings are impacted by curtailment. The two building groups are identified below

Group I.
- All Government owned Buildings in National Capitol Region not identified in group II.
- All Leased Buildings GSA pays the utilities on not identified in group II.

A variety of curtailment strategies have been identified for this type building. These strategies should include the following: building in part or whole: air conditioning systems temperatures increased, A/C systems cycling on/off or turned off for the duration of the curtailment, ventilation systems turned off, and/or non-essential lighting turned off.

Group II.
- Medical facilities
- Museums
- Laboratories
- Test facilities
- Data communications centers identified as mission critical

These buildings are to raise thermostat settings and turn off non-essential lighting, but A/C equipment is not included in the curtailment because of the type of occupancy that is served by the A/C equipment.

Energy Curtailment Planning:
Load shedding plans include 4 levels of loads based on how critical they are to maintaining your customers operations. (Tenability of space) Determine what is most critical to your building and work backwards.

The following are the minimum standards for levels in NCR. Individual building management may add items or move them to a lower level (from level III to II) based on your buildings requirements and BOP. They can not change them to a higher level (from level II to III).

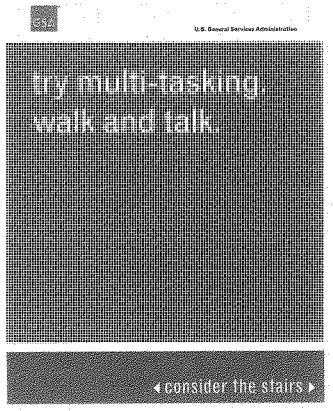
Level I- Gold Day Notice, potential interruption of power due to high demand.
-Potable water cooling/ heating
-Elevator penthouse / mechanical space cooling
-Unoccupied space conditioning (storage rooms, warehouse, loading dock areas.)
-Secondary or tertiary HVAC, (not including critical equipment cooling)
- Temperatures increased
-A/C systems cycling on/off (specific to building and type equipment)

Level II – PEPCO Energy Services has notified us to start energy curtailment.
-Stand-by emergency generators started and placed under full load. (Building Specific.)
-Common area lighting above 9 foot-candles
-Perimeter fan coils
-Reduce number of elevators in operation
-Deactivate automatic doors (except ADA compliance.)
-Booster pumps (depending on specific building conditions)
-VFD's reduce motors to lower frequency

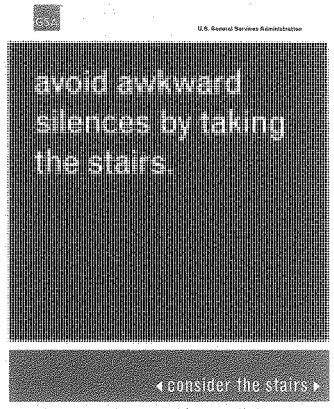
Level III – The building is experiencing loss of a phase or intermittent commercial power loss.
-Data communications
-HVAC
- All elevators / vertical transport
-All office lighting (except life safety)

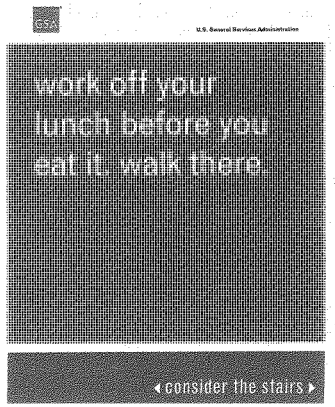
Level IV – The complete loss commercial power is eminent.
-Shed all equipment and systems **EXCEPT:**
-Life-safety, fire prevention, health / medical clinics
-Emergency Operations centers
-Command centers (critical C^3 areas)

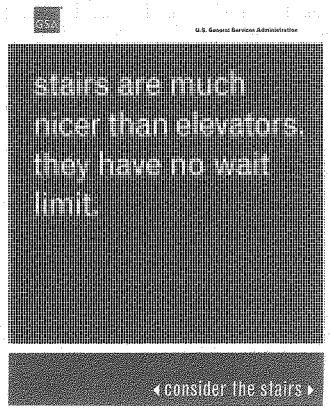
For more information:
Contact Maintenance and Energy Branch (WPYE) in ROB room 7512, 202-708-9010 or the branch associate for your service center.
DC- Jeff Garrett: 260-9717
Metropolitan Patrick Dawson…..401-3906
Potomac- William (Opie) Leslie : …...260-9719
Triangle- Norman Parker: …….205-4132
MAXIMO- Robert Keady ..708-6874


GSA
U.S. General Services Administration
try multi-tasking.
walk and talk.
consider the stairs

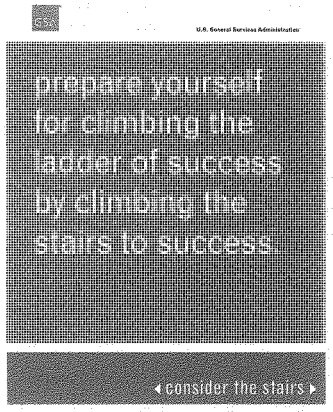
GSA
U.S. General Services Administration
hand deliver your
emails.
consider the stairs

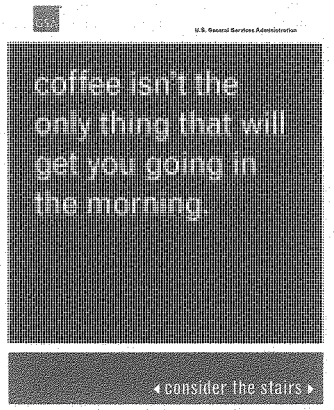

GSA
U.S. General Services Administration
avoid awkward
silences by taking
the stairs.
consider the stairs

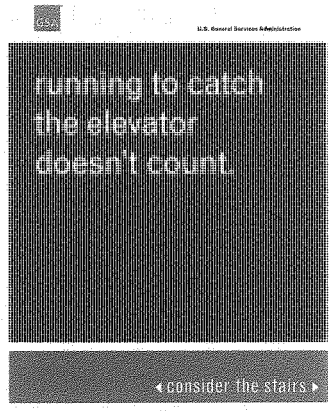

GSA
U.S. General Services Administration
work off your
lunch before you
eat it. walk there.
consider the stairs

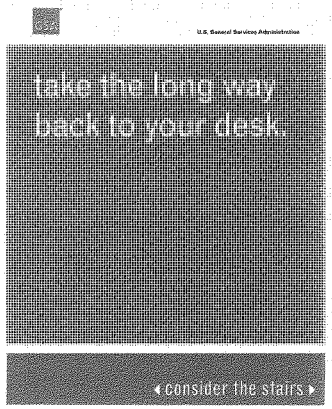

GSA
U.S. General Services Administration
stairs are much
nicer than elevators.
they have no wait
limit.
consider the stairs

GSA
U.S. General Services Administration
free StairMaster
right next door.
consider the stairs


GSA
U.S. General Services Administration
prepare yourself for climbing the ladder of success by climbing the stairs to success.
consider the stairs

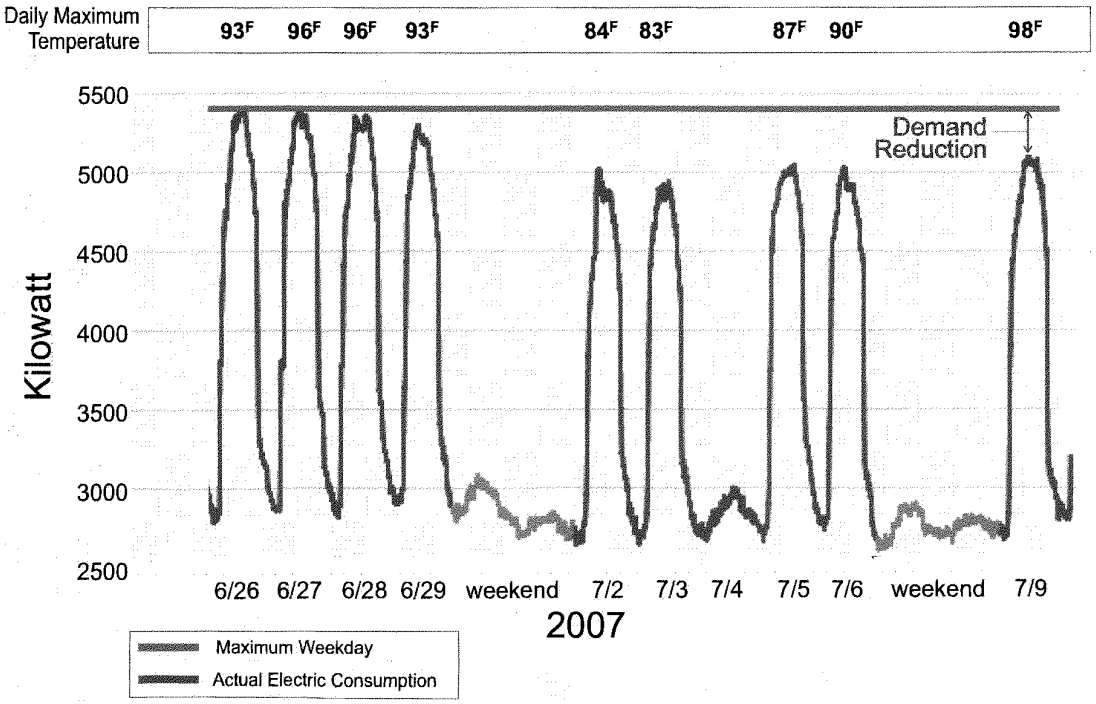

GSA
U.S. General Services Administration
coffee isn't the only thing that will get you going in the morning.
consider the stairs


GSA
U.S. General Services Administration
running to catch the elevator doesn't count.
consider the stairs


GSA
U.S. General Services Administration
take the long way back to your desk.
consider the stairs

GSA FY06 Energy Program

Project Category	No. of Projects	Amount Funded	Average Payback
Control/Commissioning	15	$3,251,320	3.85
Lighting	7	$1,327,668	3.93
HVAC	14	$13,113,774	6.11
Solar	3	$4,643,500	21.02
Other	8	$6,827,204	5.86
All Projects Avg. Payback	**47**	**$29,163,466**	**6.19**

Note: 1. Other includes projects with multiple Energy Conservation Measures that cover more than one category

Demand Response