Federal Utility Partnership Working Group Meeting

May 7-8, 2014

Hosted by Virginia Natural Gas

Virginia Beach, VA

Meeting Record

The Federal Utility Partnership Working Group (FUPWG) is a joint effort between the Federal Energy Management Program (FEMP) and the utility industry to stimulate the exchange of information among participants and foster energy efficiency projects in federal facilities nationwide.

The FUPWG meeting was held in Virginia Beach, VA, on May 7-8 and was attended by 184 professionals:

67 federal agency/lab representatives
55 utility officials
62 representatives from energy-related organizations

An additional 39 professionals participated in the Wednesday morning session via webinar. This was the third time a webinar option was offered for FUPWG participation. Feedback from the participants continues to be positive and current plans are to continue offering a portion of the FUPWG Seminar via webinar.

The complete meeting participant list can be found in Appendix A, and the agenda is provided in Appendix B. The meeting presentations can be found at http://energy.gov/eere/femp/downloads/fupwg-spring-2014-agenda-and-presentations

Welcome Remarks from the Host Utility
Donald Knight, Manager – New Business Development, Virginia Natural Gas

Mr. Knight welcomed attendees to the 2014 Spring FUPWG Meeting and provided some background information on AGL Resources and Virginia Natural Gas (VNG). AGL Resources is the largest natural–gas-only distribution utility in the nation. Locally, VNG has been providing reliable natural gas service to customers since the 1850s. Today, their responsibilities are even greater: not only does environmentally friendly, domestically abundant natural gas play an important role in our nation's focus on clean energy and the environment, but also in our national security. Mr. Knight stressed the importance of taking responsibility to reduce AGL Resources' own environmental footprint while helping customers and communities decrease theirs. Since 2005, VNG has performed projects under the utility energy service contracts (UESCs), locally including Naval Station Norfolk, NASA Langley, and other installations in this area.

Mr. Knight concluded by encouraging all attendees to network with one another over the next couple of days because each piece to this puzzle matters and this group's collaboration will influence our communities for the better.

DOE/FEMP Welcome and Announcements
David McAndrew, Chair of the Federal Utility Partnership Working Group, FEMP, U.S. Department of Energy

David McAndrew, FEMP's Project Lead for UESCs and state energy efficiency incentive programs, welcomed the attendees to the meeting, delivered logistics-related announcements, and thanked Kathy

Robb and AGL Resources/Virginia Natural Gas for hosting the meeting. Mr. McAndrew announced that there were approximately 100 attendees joining the meeting via webinar and welcomed these participants to the meeting. Members of the FUPWG Steering Committee were recognized for their efforts in planning the event. Mr. McAndrew announced that continuing education units were being offered to FUPWG attendees and outlined the process for receiving CEUs.

Mr. McAndrew provided an update on some of FEMP's key FY 2014 projects including the new rebate and incentive initiative and webinar for utilities. He also reminded everyone that the UESC Guide is now posted on the FEMP website, and agencies are finding it very helpful in streamlining the UESC process, and announced that the UESC ENABLE tool is ready for projects.

Future training dates were reviewed. There was an Advanced UESC Workshop prior to FUPWG, and the next workshop is scheduled for August in Charlotte, NC. UESC webinars are scheduled for May 21 and June 24. Participants were encouraged to contact FEMP if they are interested in hosting a FUPWG Seminar and reminded them that agency-specific UESC training is available.

Mr. McAndrew asked utilities interested in hosting a Federal/Utility Strategic Partnership meeting to contact him, and also reminded the attendees that FEMP provides project support for every step of the project and agencies are encouraged to contact FEMP if they need project assistance.

The 2014 Fall FUPWG Seminar will be hosted by Florida Power & Light in Cape Canaveral, FL. Dates are November 5-6. Attendees were encouraged to provide session ideas on their evaluation form.

To view Mr. McAndrew's presentation, visit
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_femp_welcome.pdf .

Washington Update
Timothy D. Unruh, Program Manager, FEMP, U.S. Department of Energy

Mr. Unruh began his presentation by reviewing FEMP's mission statement. He then presented an update on the Presidential Memorandum of 12/2/11 and outlined some key FEMP deliverable dates:

- April 5, 2014 – Recommendations on renewable energy credits (RECs) to the Council on Environmental Quality (CEQ)
- June 5, 2014 – Update Renewables Guidance
- June 5, 2014 – Metering Guidance
- June 5, 2015 – Update Benchmarking Guidance
- Also working on Green Button Pilot Strategy with GSA

Agencies identified projects (in the pipeline or awarded) with an estimated investment value of $2.689 billion as of April 15, 2013. A total of 139 projects have been awarded with an investment value of $1.446 billion. President Obama announced recently that federal agencies will further expand their use of performance-based contracts through 2016 to upgrade the energy efficiency of Federal buildings at no cost to taxpayers.

Mr. Unruh discussed the White House Capital Solar Challenge, which directs federal agencies, military installations, and federally subsidized complexes to identify opportunities to deploy solar technologies at federal locations across the National Capital Region. This is an excellent solar project opportunity due to the currently high prices of solar renewable-energy certificates (SRECs). FEMP will provide technical and procurement assistance to reduce agency administrative requirements. CEQ is providing leadership and high-level support to this effort. The goal is to have agencies release an RFP this year. Interested agencies should contact Danny Gore at FEMP.

FEMP has launched eProject Builder, which creates a mold for project standardization and streamlines data collection and reporting processes within and across federal, state, and local markets. This program is currently focusing on ESPC but will incorporate UESC data collection in the near future.

The ENABLE tool can be used for ESPC and UESC projects. The UESC ENABLE IGA (investment grade audit) tool performs a comprehensive IGA designed for use by an energy services company (ESCO). The tool standardizes the energy and cost savings calculation methodology for targeted energy conservation measures (ECMs), and produces an IGA summary report of energy and cost savings by ECM and equipment types throughout the project.

Mr. Unruh discussed the Data Centers Energy Efficiency Challenge and outlined the program goals. A soft launch of the effort is scheduled for the near future.

Mr. Unruh concluded his presentation by confirming that UESCs are as important as ESPCs and thanking FUPWG for helping FEMP reach its goals.

To view Mr. Unruh's presentation, visit
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_washington_update.pdf .

GSA Update
Mark Ewing, Director – Energy Division, General Services Administration

Federal buildings consume $6.5 billion in utilities each year. GSA plays a large role in this business through its energy procurements, alternative financing mechanisms, regulatory intervention, and performance benchmarking. Internally, GSA currently spends $400 million for energy in buildings where it directly pays the bill. Through aggressive energy strategies, GSA has reduced energy consumption by 23.54% compared to 2003. This equates to a $58 million reduction in GSA's energy bills. Additional savings in utility expenses result from securing lower prices through competitions and by mitigating rate increases sought by utilities before state energy commissions. Continuing to reduce consumption 3% annually, meeting renewable targets, and negotiating a volatile energy commodity market will be challenging.

At the very least, GSA should strategically accelerate its momentum in three key areas:

Strategic Sourcing
GSA energy contracts comprise $3.1 billion in government-wide expenditures. GSA aggregates loads, segments markets and strategically sources energy management services so that federal customers don't have to staff redundant programs. Additionally, GSA utility contracts offer an option to the ESPC program. Since 1992 federal agencies recorded $1 billion in investments across 651 projects using our unique Utility Energy Service Contract authority. GSA monitors all 50 state commissions for new utility tariff applications. When we see something significant, GSA or our agency partners intervene legally. There are currently 98 GSA Public Utility Contracts covering approximately 110 operating companies. GSA is currently working with 10 companies to get new areawides in place.

Validating Performance
GSA is unique among federal agencies in its ability to centrally monitor energy cost and consumption wherever it pays a bill. The Energy Usage Analysis System (EUAS) tracks each utility bill Finance pays, inputs weather data by zip code, and normalizes for measured gross square footage. The system then benchmarks performance at all levels of the portfolio. Additionally, GSA's national advanced metering system tracks 91% of electricity consumption in real time across the owned inventory. Remote surveillance by GSA staff will ensure that the energy management capabilities inherent in advanced metering are used by contractors as stipulated in the new O&M specification. While these systems have reached their practical investment limit in terms of portfolio coverage, expansion of this capability has limitless potential under a Green Button structure.

Liberating Data
Effective energy management requires assessing efficiency levels of major end use building loads.

The export of this data for forensic analysis, corrective recommendations, and verification of stipulated results is an essential strategy for achieving our goals in the face of resource limitations. By liberating our data in this manner, GSA gains access to virtual assessment tools which, by default, offer a business model which is cheaper, faster and requires less staff resources. Obstacles that must be overcome include constraints to exporting live data across the GSA internet firewall, and to allowing control signals into our Building Automation Systems from Smart Grid programs.

Mr. Ewing discussed President Obama's Climate Action Plan and shared information on GSA's efforts relating to the Green Button Pilot Overview.

To view Mr. Ewing's presentation, visit
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_gsa_update.pdf .

Combined Heat and Power
Mike Ellis, Director, AGL Energy Services
Pam Maines, PEPCO Energy Services
Isaac Panzarella, Director of the U.S. DOE Southeast CHP Technical Assistance Partnership (CHP TAP)

Mike Ellis provided an overview of combined heat and power (CHP). The American Council for an Energy-Efficient Economy says that "CHP is the most efficient way of generating power available today." Over two-thirds of the fuel used to generate power in the U.S. is lost as heat. Natural gas is the dominant fuel for existing CHP and is abundant, affordable, and American.

The regulatory drivers for CHP include EISA 2007, EPAct 2005, E.O. 13424, E.O. 13514, and Executive Order of August 2012: Accelerating Investment in Industrial Energy Efficiency.

Mr. Ellis discussed the benefits of CHP to federal facilities which include:

- Power resilience
- Electric grid security
- Reduced energy costs
- Stability of energy costs
- Energy efficiency and reduced greenhouse gases

Ms. Maines talked about CHP project development and typical CHP application. CHP uses fuel to first generate power and then captures the resulting heat for use as heating, cooling, or both. She then discussed two PEPCO CHP projects — National Institutes of Health and DC Water BioGas CHP. DC Water is currently upgrading its facilities to replace the majority of lime stabilization with anaerobic digestion to treat sludge and reduce odors. The process requires the use of steam for the anaerobic digesters, and this steam will be provided by the CHP facility being constructed by Pepco Energy Services. This contract was signed in February 2012 and construction is scheduled to be completed in 2015.

Mr. Panzarella discussed some of the key activities of the DOE CHP Technical Assistance Partnerships, which include market opportunity analysis, education and outreach and providing technical assistance to end-users and stakeholders to help them consider CHP. He discussed how achieving the goal of 40GW of new CHP by 2020 outlined in the President's Executive Order 13624 would increase CHP capacity in the United States by 50 percent in less than a decade and save energy users $10 billion a year compared to current energy use. Achieving this goal would also result in $40 to $80 billion in new capital investment in manufacturing and other U.S. facilities over the next decade. He also discussed CHP as it relates to critical infrastructure resiliency, which is a key principle of disaster preparedness. CHP, if properly configured, offers the opportunity to improve critical infrastructure resiliency by maintaining operation despite a devastating event.

To view Mr. Ellis' presentation, visit:
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_chp.pdf .

To view Ms. Maines' presentation, visit:
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_chp2.pdf .
To view Mr. Panzarella's presentation, visit:
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_chp3_doe_ta.pdf .

Case Study: Luke AFB Solar Project Challenges and Lessons Learned
Karen White, Staff Attorney, USAF Utility Law Field Support Center

Karen White provided an overview of the Luke AFB 15 MW Solar Array project. FAR Part 41 was used for this project and the Utility Law Field Support Center Rates and Renewables Team negotiated a solar service agreement with Arizona Public Service (APS). This was a special contract under the existing contract which added in the solar service agreement. The initial concept was to provide an easement to the utility because leases are considered a liability to the utility. The team negotiated a rate for renewable electricity with APS which included a fixed "solar rate" for the life of the array. The utility would build, own, and operate the PV array. Luke would use 100% of production 99% of time and the array output would feed directly into APS side of grid.

Ms. White then discussed the unforeseen site conditions that were discovered. The site was a known archeological location and surface artifacts were discovered during the 2004 land purchase. Exploratory trenching at the site revealed that the significance of the site was much greater than initially estimated. The site turned out to be the oldest discovery in the western United States in years, with a number of pit houses and fire pits that are 5,000 years old according to carbon dating.

The Air Force spent $6 to $8 million to mitigate for archeological artifacts, which took around two years. During the mitigation period the economic conditions changed for APS and the fixed solar price increased to exceed the expected brown power rate. This became a problem because the Air Force doesn't pay a premium for renewables.

APS presented a solution to the problem, offering to lease the land and pay rent instead of using the Air Force easement. The team moved forward with this plan. The project would still have some renewable goal value for the Air Force relating to 10 USC 2911.

Ms. White discussed the lessons learn. The reason that the project remained viable was because of the strong partnership with the utility from the beginning. Key stakeholders were at the table from the start. When the artifacts were discovered, team communication had already been established. The utility archeologist played a key role in the mitigation process. The team remained flexible and worked together to come up with a new plan for this project.

To view Ms. White's presentation please visit
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_lukeafb_lessons_learned.pdf .

Using Data to Achieve Anticipated Savings
Commander Matt McCann, Office of the Secretary of Defense (Moderator)
Karen Curran, General Services Administration
David Gilligan, NAVFAC Atlantic

Commander McCann announced that this was the one-year anniversary of DOD's new metering policy. This policy shifted the focus of metering to ensure that the data from the meter gets to someone who can use the data. DOD budgets were shrinking when this new policy was developed. Commander McCann proposed that DOD develop partnerships with utilities in hopes that some of the costs and responsibilities of the new meters could be shared. He formed a committee to develop a pilot to demonstrate how this type of partnership would work. The original intent of this session was to discuss this pilot, but the project is currently stalled due to complications relating to DOD's enterprise plan.

Karen Curran discussed GSA's Advanced Metering Plan and its current priorities. There are 196 facilities included in this plan. She outlined the uses of the metering data which include:

- Energy billing and procurement
- Optimize/review performance
- Verify project performance
- Promote energy awareness
- Demand response programs

She stressed the fact that advanced meters alone do not save energy/water. Agencies must have engagement and time to review the data and act. Demonstrating the possibilities and the associated cost savings will get others engaged.

Ms. Curren then outlined how metering can improve a building's operation and efficiency:

- Identifying anomalies in usage patterns
- Verification of project performance
- Start-up and shut-down schedules not matching what should be
- Overtime utility usage
- Baseloading info – comparison to similar sites
- Observing during load curtailment events
- Watch impact on consumption by adjusting schedules
- Leak detection
- Advanced: Modelling/ power quality analysis

She then highlighted how GSA is actually using the data:

- Engaging and partnering with O&M staff and energy teams to review daily trends and question what data reveals.
- Using report subscription capability.
- Making models to validate suspicions.
- Re-tuning – Proper analysis of utility and interval meter data can result in the identification of significant energy savings opportunities and possibly improve overall building operations.

David Gillikin shared information on the Navy Meter Data Management Plan for facility level metering. The goals of the plan are the following:

- Capture minimum 60% and goal 85% of facility electric consumption
- Capture minimum 60% and goal 75% (Navy) / 85% (USMC) natural gas consumption
- Capture 100% pier-side vessel consumption (Navy)
- Identify individual facility steam usage and ship usage when pier-side (Navy); steam plant production (USMC)
- Identify individual facility water usage and system losses for all water-intensive facilities
- Enable meter data to be automatically transferred to CIRCUITS MDM module (Navy) and MDM system (USMC)

The Navy uses strategic data and tactical data to achieve anticipated savings.

Strategic Data Use – Defense Utility Energy Reporting System (DUERS)

- Formulate energy policy
- Management reports for senior Defense managers
- Measure energy conservation achievements
- Progress toward energy goals and targets
- Provide DoD energy data to Congress, DOE, others
- Identify energy usage and consumption trends
- Energy data for local, regional, and global analysis

- Annual Energy Management Report (AEMR) – put out by OSD annually. Good review of DOD goals and performance.

Tactical Data Use

- Developed monthly reporting of ship pier-side consumption to address the challenge of metering ships
- Energy project development – Goals: 4.5 facility ECM workflow and capabilities
- CIRCUITS utility billing/reporting
- Leak reductions/ops efficiency
- HVAC/DDC optimization

To view the presentations from this session, visit
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_gsa_advanced_metering.pdf and
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_navfac.pdf .

FUPWG Luncheon
Rear Admiral Douglas G. Morton – Commander, Naval Facilities Engineering Command, Atlantic

Rear Admiral Morton talked about this area of Virginia, highlighting that Norfolk has the largest naval presence in the world. The job of the Navy is to put U.S. military might present in a forward spot. He explained that his job is to make sure that he doesn't spend too much of the money that doesn't need to be spent. Every penny spent for Navy facilities is a penny that can't be spent on weapons systems. The Navy influences world affairs so that sailors and marines don't have to get into harm's way on the ground.

Rear Admiral Morton discussed the Naval Facilities Engineering Command (NAVFAC) and provided insight into their business and how they behave. There are 100 sites that need to be covered. He talked about the challenges involved with competing energy projects. The Navy has funding for 113 projects in 2014. Assistant Secretary McGinn requested that facilities do more financed projects. The challenge is the complexity and length of time that these projects take – typically twenty months. The Navy is looking for ways to fast track this process but the due diligence has to be done. The Secretary of the Navy has set some remarkable energy goals, which is making everyone think differently. These goals include renewables. More information regarding these goals will be announced in the next couple of weeks.

M&V in UESCs
Leila Comer, Engineering Manager, AGL Resources
Randy Smidt, Staff Engineer – Energy and Utilities Branch, Army
Bob Somers, President, 2rs Consultants, Inc.
Karen Thomas, National Renewable Energy Laboratory

Leila Comer began the session by discussing how to validate savings on UESC contracts. She discussed the savings variables relating to each energy conservation measure and how they impact savings. She then discussed factors related to the customer's situation that can impact energy savings including personnel, reporting requirements, savings ownership, metering infrastructure, operations and maintenance, and savings validation.

Ms. Comer outlined some performance assurance strategies recommended by FEMP:

- Start-up performance verification (based on measured data)
- Performance verification at end of warranty period (based on measured data)
- Operations and maintenance training
- Continuing training
- Periodic inspections and verification of appropriate O&M performance
- Performance discrepancy resolution
- Ongoing metering and continuous commissioning for complex projects

M&V is one of these performance assurance strategies and provides the following:

- Recourse on ESPC contracts (guaranteed savings)
- Data to report energy efficiency status / track project ROI
- Information that can be leveraged to optimize/correct systems

M&V does not include:

- Corrective actions in case of non-performance
- A remedy for unrealized savings due to changes in weather, rates, operation, etc.
- System optimization over time

Ms. Comer outlined the components of an effective Performance Assurance Plan:

- Customized to agency requirements and nature of ECMs implemented (savings certainty)
- Leverage existing metering and controls infrastructure to develop cost-effective plan
- Incorporate site/staff requirements and future plans for facility
- Short- and long-term strategies
- Tools to track energy savings (compliance)

Karen Thomas outlined the federal requirements related to commissioning and audit components. EISA Section 432 addresses commissioning and audit components. DOE's audit standard is rigorous, but flexible enough to ensure that viable energy-savings projects are identified and to allow engineers to conclude that viable projects do exist.

Ms. Thomas outlined the key components of a Performance Assurance Plan:

1. Include performance assurance requirements in each contract.
    - Strategy for measuring and presenting baseline assumptions and operating hours, design consumption; as-installed consumption and operating hours for each ECM.
    - Demonstrate performance at installation, upon seasonal changes, at completion of one year of service, and prior to the end of the warranty period.
    - Develop O&M procedures that meet manufacturer's suggested O&M, agency protocol, and efficiency targets.
    - Establish responsible party (agency or utility) for all activities included in the performance assurance plan.
2. Compare performance measurements to manufacturer's specs and design intent.
    - Measure the performance criteria and verify performance of each ECM when installation is complete (i.e., kWh per fixture, kW per ton).
    - Measure the performance criteria and verify the performance at the end of the warranty period.
3. Assure effective O&M.
    - Complete ECM-specific O&M.
    - Perform continuous commissioning for complex and energy-significant ECMs.
    - Inspect ECM O&M effectiveness periodically.
    - Review and adjust the O&M plan.
4. Provide performance-focused O&M training that meets manufacturer's recommendations.
    - Provide ECM-specific in-person training and include video training.
5. Review and resolve performance discrepancies.

Ms. Thomas concluded her presentation by providing an ECM performance checklist, which should be incorporated into performance assurance plans.

1. Document intention for the measure (design intent or basis of design)
2. Confirm correct number, type, and location of measures
3. Confirm correct interconnection with building systems and controls
4. Confirm operational sequence (startup, shutdown) or multiple modes of operation
5. Document tests to confirm improvement in efficiency
6. Confirm complete training of staff

7. Confirm on-site user's manual

Randy Smidt presented a case study on the For Rucker project. The contract value was $16.6 million with a total project lifetime savings of $25.6 million. The work scope consisted of nine ECMs and the contract was awarded in September 2013. There was a collaborative approach between the utility and Fort Rucker to determine risks and responsibilities. Mr. Smidt outlined the performance verification (M&V) requirements and the O&M / re-commissioning activities for the project. Performance verification services provided by the utility included baseline development, post-construction as-built savings adjustment, and term performance verification.

Bob Somers discussed the nuances relating to engineering and the importance of looking at the goals and objectives of the project to help develop the Performance Assurance Plan. Need to look at more than just the dollar savings, and it is important to understand what the message is and who the audience is.

Mr. Somers concluded the presentation by sharing three things that are important when developing a Performance Assurance Plan:

- Put your M&V efforts into the parameters that matter – the ones that can make or break a project.
- Focus staff's attention on the cash flow of the energy savings.
- Beware of unintended consequences in your message. More complex M&V equates to more risk.

To review the presentations from this session, visit
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_performance_assurance_mv.pdf and
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_ft_rucker.pdf .
http://energy.gov/sites/prod/files/2015/03/f20/fupwg_may2014_uesc_mv.pdf

UESC Best Practices
Karen Thomas, NREL (moderator)
Karen White, Staff Attorney, USAF Utility Law Field Support Center
Richard Turk, Value Analysis
Cyndi Vallina, Senior Analyst, Office of Management and Budget
Patricia Nardone, Energy Services Manager, Southern Company

Rebates and Incentives
Karen White discussed how DoD handles financial incentives and outlined the statutory authority.

- 10 USC 2913 (b): "The Secretary of Defense shall permit and encourage each military department, Defense Agency…to participate in programs conducted by any *gas or electric utility* for the management of energy demand or for energy conservation." (emphasis added)
- 10 USC 2912 (c): "Financial incentives received from *gas or electric utilities* under section 2913 of this title shall be credited to an appropriation designated by the Secretary of Defense. Amounts so credited shall be merged with the appropriation to which credited and shall be available for the same purposes and the same period as the appropriation with which merged." (emphasis added)
- DoD FMR chapter 12, paragraph 120302 provides that "financial incentives received from gas or electric utilities under 10 USC 2913 shall be credited to the installation's Operations and Maintenance (O&M) account and shall be available for the same purposes and the same period as the O&M appropriation."
- These funds are not limited in use or "fenced" for energy conservation projects—they become part of the installation O&M funding and expire at the end of the fiscal year.

If you have the ability to schedule when rebates and incentives are to be paid, you should work with the utility to receive the payment as close to the beginning of the fiscal year as possible since the funds must be used for O&M within the fiscal year when they are received.

OMB Scoring Requirements

Cyndi Vallina began her presentation with some history related to scoring. The 1991 Budget Enforcement Act provided for more transparency and accountability into what the government was spending. In 1998 a memo was signed that provided a waiver for ESPCs relating to scoring. At that time, UESCs were not having any issues so OMB decided to take the language related to UESCs out in order to get the memo signed. In 2011 the President's Performing Contracting Challenge was issued which called for $2 billion in performance contracting by the end of 2013. There was a question as to whether UESCs could also receive the waiver relating to scoring. New guidance was developed that stated that UESCs can receive the same budget scoring treatment as ESPCs as long as the UESC requires:

- Energy savings performance assurances or guarantees of the savings to be generated by improvements, which must cover the full cost of the federal investment for the improvements.
- Measurement and verification (M&V) of savings through commissioning and retrocommissioning.
- Competition or an alternatives analysis as part of the selection process prior to entering into a UESC.

The September 2012 memo also addresses renewable generation for these projects. This memo states that in order for agencies to take advantage of the scoring waiver, the agency must retain the title at the end of the contract.

Subcontractor Selection

Patricia Nardone discussed the two main approaches to subcontractor selection:

- Utility brings ESCO partner to the table.
- Utility acts as a general contractor and selects/manages primary or multiple subcontractors.

The typical drivers in utility subcontracting approaches are:

- Breadth and depth of UESC experience
- Technical expertise
- Number of resources
- Availability of and ability to spend budget dollars at risk
- Risk profile & appetite for risk – financial (audit fees, price/margin stability, payment), external community (relationship and reputation) and legal (contractual obligations, subcontractor performance, environmental)
- Program motivation – customer satisfaction vs financial gain

Ms. Nardone outlined some key considerations that are important to know up front:

- Competitive selection requirements
- Small or minority subcontracting goals
- Special security or clearance requirements
- Volume of work expected to be performed
- Customer and/or Contracting Officer level of involvement in selection
- What the government wants or needs for their permanent files
- Whether or not bonds will be required

Ms. Nardone discussed the differences in the processes involved in hiring a full service ESCO and hiring subs directly and the pros and cons of each. Hiring a full service ESCO is typically done prior to initial project development. It must begin with a competitive selection process. It is important to clearly define the division of responsibilities including payment or non-payment of initial audit fees.

If a utility hires a full service ESCO, the utility should always be at the table. It is important to review, be involved, and understand the project. Look closely at elements of ESCO pricing such as project management, engineering, and overheads and profit, and review the documents for completeness. Regardless of the subcontracting method that is used, the utility is still responsible for the work contractually, and the handling will affect the relationship and reputation with the federal customer.

To review the presentations from this session visit
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_uesc_bestpractices.pdf,
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_omb_guidance.pdf, and
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_uesc_bestpractices2.pdf .

Large Scale Energy Storage
Phill Consiglio, Southern California Edison

Some technologies provide only short-term energy storage while others can provide very long-term storage, such as power to gas using hydrogen and the storage of heat or cold between opposing seasons in deep aquifers or bedrock. Mr. Consiglio provided several examples of both long and short-term energy storage. He talked about the evolution of the battery and described the technology behind the new flow battery. A flow battery is an easily rechargeable system that stores its electrolyte—the material that provides energy—as a liquid in external tanks. Unlike typical batteries that are packaged as fixed cells or modules, a flow battery allows the battery's power (the rate of electricity flow) to be decoupled from the battery's capacity (the total amount of energy held). As a result, users are free to tune the battery's specifications to their specific needs. These batteries are still in the development stage.

Mr. Consiglio talked about compressed air storage, which stores potential energy from moving molecules. There are many applications for compressed air storage but it is not very efficient.

Mr. Consiglio shared a video on a new large-scale energy storage technology. Advanced rail energy storage stores potential energy in the form of a heavy train. It is a lot like pumped storage but without water. http://www.aresnorthamerica.com/santa-barbara-energy-storage-resources .

Mr. Consiglio shared information on NEC's acquisition of A123 Systems, LLC. NEC will become the world's leading supplier of lithium-ion grid energy storage systems. He also talked about SolarCity's battery technology advancements through their partnership with Tesla. He concluded the presentation with a summary of the current landscape for energy storage.

To review Mr. Consiglio's presentation visit:
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_energy_storage.pdf .

Net Energy Metering
Phill Consiglio, Southern California Edison
Chandra Shaw, National Renewable Energy Laboratory

Chandra Shaw began the presentation by providing a definition of net energy metering. For electric customers who generate their own electricity, net metering allows for the flow of electricity both to and from the customer – typically through a single, bi-directional meter. When a customer's generation exceeds the customer's use, electricity from the customer flows back to the grid, offsetting electricity consumed by the customer at a different time during the same billing cycle. In effect, the customer uses excess generation to offset electricity that the customer otherwise would have to purchase at the utility's full retail rate. Net metering is required by law in most U.S. states, but state policies vary widely.

She then discussed some net metering considerations including eligibility, REC ownership, the treatment of net excess generation, additional fees, aggregate capacity limit, and contractual requirements, and stressed the importance of carefully researching net metering rules.

Ms. Shah explained how to access net metering information on the Database of State Incentives for Renewables & Efficiency (DSIRE) and shared some examples of some state net metering programs.

Phill Consiglio focused on the societal impact of net metering and why we only have 5% of our load net metered. Rate principles must include making sure that rates reflect the true cost of service. Under most

Net Energy Metering (NEM) Tariffs, customers receive the full retail rate credit for the power they generate. The NEM credit includes not only generation charges but also all delivery charges which are made up of transmission & distribution grid system operations, maintenance & upgrades, and a variety of fixed costs that do not decrease when the customer is generating. As a result, NEM customers are being over-compensated for the power they generate. SCE estimates that the 2012 NEM over-compensation was about $90 million, which are costs that were shifted to non-solar customers. There is a fairness issue: customers that cannot afford solar are paying for the ones that can.

Mr. Consiglio then discussed the recent case where the Arizona Corporation Commission (ACC) imposed a net metering charge based on a request from Arizona Public Service Co (APS). APS said the new charge was needed to defray the cost of the solar customer's access to the electricity grid.

To review the presentations from this session visit
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_net_metering.pdf and
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_nem.pdf .

New Gas Technologies
Eric Burgess, Energy Solutions Center

Mr. Burgess began his presentation by discussing the following types of heating systems:

- Forced Air Systems – The most common heating system that uses a natural gas burner to heat air. Cool air is drawn into the system and moved into a heat exchanger where it is warmed by the gas burner and then circulated by a blower or fan through ductwork to the space being heated.
- Heat Pump Systems – Instead of warming the air by direct application of heat, a heat pump moves heat from the air, water, or ground and transfers it to areas of cooler air. A heat pump works like an air conditioner in reverse and uses a refrigerant gas or fluid that runs through pipes between two sets of coils.
- Infrared Heaters – Very energy efficient and having either a glowing panel or tube distribution system that warms people and surfaces in its direct path.

Mr. Burgess then discussed some of the newer gas heating technologies.

- High Efficiency Rooftop Units – Conventional gas-fired rooftop heaters have efficiency ratings between 78 and 82 percent. Condensing natural gas rooftop units provide comfort and efficiency (89-97%) and offer fast morning warm-up and response times with lower operating and maintenance costs.
- Make-Up Air Systems – Cost-effective way to provide fresh tempered air to "make up" air leaving the building.
- Unit Heaters – High-efficiency unit heaters have efficiency ratings up to 93% as opposed to standard heaters with 78-80%.
- Gas Heat Pumps – Offers a wide range of cooling and heating capacities and temperatures with capacities from 5 to 300 tons. Absorption and engine-drive units are available.

Mr. Burgess then discussed some of the new technologies relating to natural gas water heaters. Features of high-efficiency storage water heaters include up to 99% efficiency and 399,000 – 2,000,000 Btu input. Tankless water heaters have no storage tank and heat water on demand with no standby losses from a tank. Hybrid water heaters have a solar water heater with a natural gas-fired back-up heat exchanger and provide approximately half of the water heating from solar. Booster water heaters are designed to heat rinse water for better cleaning and sanitizing of dishes.
Natural gas cooling options including absorption chillers, heat pumps, engine-driven chillers, and steam-turbine-driven chillers were discussed.

Mr. Burgess then discussed combined heat and power equipment options including reciprocating engines, microturbines, turbines, and fuel cells.

Mr. Burgess concluded the presentation with a discussion of some of the facts and benefits relating to natural gas vehicles. Natural gas costs range from $1.50 to $2.00 less than its per gasoline gallon equivalent, and natural gas vehicles meet the strictest emission standards.

To review the presentations from this session visit
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_new_gas_technologies.pdf .

NREL's New Auditing Tool
Lars Lisell, National Renewable Energy Laboratory

Simuwatt™ Energy Auditor is an innovative cloud-based, tablet and desktop software solution that reduces the time and cost of providing high-quality commercial building energy audits while preserving the data to facilitate reporting, portfolio-wide tracking, and reuse. Simuwatt™ Energy Auditor provides standardized data collection interfaces, an integrated community-driven library of energy conservation data, and enterprise collaboration tools to organize and create analysis-ready outputs for a variety of auditing approaches. Energy Auditor is a joint development between NREL and the simuwatt™ software team. DOE FEMP provided the funding for NREL to develop this tool.

Mr. Lisell discussed the benefits of using simuwatt:

- Streamlined high-quality commercial energy audits
- Consistent, standardized and reusable data format
- Extensive library of building components (currently ~35,000 components available)
- Reduces the cost of energy audits by 35 to 75%
- Addresses EISA 2007 audit requirements
- Access data from the cloud/integrate with other apps

Mr. Lisell then described the features of the tool and how it works. The process starts with mobile data collection which is then mapped to create an energy model. DOE funded the OpenStudio modeling platform, which allows calibration/analysis to begin immediately following data collection activities. The Building Component Library (BCL) is a web repository of components with specifications that populate energy model inputs that can be accessed via an API. This is currently available at bvl.nrel.gov. Data from the simuwatt server can be queried to produce the audit report and other utility data summaries.

Mr. Lisell concluded his presentation with reviewing some demonstration results and sharing information on some of the models. More information can be found at www.simuwatt.com and visit http://simuwatt.com/rd100.html to see a video of the tool in use.

To review Mr. Lisell's presentation visit
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_nrel_simuwatt.pdf .

DOE Building Technologies Office Overview
Richard Karney, DOE Office of Energy Efficiency & Renewable Energy

Mr. Karney provided an overview of DOE's Building Technologies Office. Out of our nation's total energy supply, homes and buildings eat up a whopping 40%. Cutting this consumption calls for cutting-edge energy-efficient solutions. We know – and the White House knows – that building energy efficiency saves families money and makes businesses more competitive. Part of the President's Climate Action Plan goal to double energy productivity is based on the two tactics of (1) using appliance standards to help avoid 3B

metric tons of CO_2 from standards, and (2) achieving 20% energy savings in a variety of building types. This aligns with the Building Technologies Office's goal to develop and promote the adoption of technologies and practices that, when fully deployed, would reduce building-related energy use by 50% from the 2010 Annual Energy Outlook baseline.

Mr. Karney talked about the four programs within the Building Technologies Office. and their missions, as follows:

- **Emerging Technologies mission:** Accelerates the research, development, and commercialization of emerging high-impact building technologies that are generally five years or less to market-ready.
- **Residential Building Integration mission:** Accelerates energy performance improvements in existing and new residential buildings—while ensuring affordability, safety, durability, and renewable energy readiness—by developing, demonstrating, and deploying a suite of cost-effective technologies, tools, and solutions.
- **Commercial Building Integration mission:** Accelerates energy performance improvements in existing and new commercial buildings by developing, demonstrating, and deploying a suite of cost-effective technologies, tools, and solutions.
- **Lock In Savings With Codes & Standards. Standards and Codes mission:** Provides cost-effective energy savings through national appliance and equipment standards; and develops cost-effective building energy code language with evolving adoption and compliance strategies.

Mr. Karney concluded his presentation with a discussion on the five-year program plans and how the impact of the programs will be evaluated and assessed.

To review Mr. Karney's presentation visit
http://energy.gov/sites/prod/files/2014/05/f15/fupwg_may2014_bto.pdf .

ENERGY LAWYERS AND CONTRACTING OFFICERS WORKING GROUP
Facilitators: Linda Collins, GSA, and Julia Kelley, Oak Ridge National Laboratory

Armed Services Board of Contract Appeals (ASBCA) Ruling on the Sale of Renewable Energy Credits (RECS) from Government-Owned Projects
Linda Collins, General Services Administration
Richard Butterworth, Senior Assistant General Counsel, General Services Administration
Kay Sommerkamp, Army Corps of Engineers

Kay Sommerkamp began the presentation with a summary of the Honeywell case.

- This Armed Services Board of Contracting Appeals case in August 2013 involved an ESPC project at Fort Dix, New Jersey. Under New Jersey law the Renewable Energy Credits (RECs) were issued to qualified generators of renewable energy and the law allows for severance of the green qualities of the RECs. This delivery order was under the DOE Super ESPC contract and the contract stated that the solar RECs would be government owned, which was undisputed in the litigation.
- One of the ECMs under the ESPC was a solar array. The ESCO was going to measure the savings from the solar array in terms of (1) the value of the displaced energy use and (2) the value of the solar RECs. The contract had assumptions regarding these values over the years. The contract also said that the contractor could sell the RECs back to the government at cost minus 10%.
- All was going well until Fort Dix became a joint base and there was a new contracting staff handling this project. At that time questions were raised as to whether the contracting officer had the authority to give away government property and dispose of it in this way and how this relates to the Miscellaneous Receipts Statute, which states that collected money should go to the U.S. Treasury, not the project.

- The contracting staff made a decision that this task order was in violation of the Property Disposition Statute and the Miscellaneous Receipts Statute and offered to lease the facility and land to the contractor and purchase the power, which would turn the agreement into a PPA. Honeywell was not in favor of doing this and appealed to the ASBCA.
- The government took the position before the board that these provisions were void because they were illegal.
- Honeywell claimed that the government had breeched its contract because it had failed to inspect and accept the solar array which was just sitting there and they never made payments on the contract.
- ASBCA looked at a couple of things including the fact that a contract has to be executed by an agent with actual authority.. They also looked at whether the solar RECs could be considered a savings under the ESPC statute and determined that this they were not.
- The government won and the board said that Honeywell might be entitled to payment under a reformed contract.

Ms. Sommerkamp then discussed the Army's policy regarding RECs:

- This policy indicates that the Army will meet its energy goals through project RECs or replacement RECs.
- REC swapping is allowed by the developers but not by the Army.
- DoD has a verbal policy that it will not go out and purchase RECs to meet energy goals.
- RECs generated at DoD facilities with appropriations will not be sold or transferred.

Ms. Sommerkamp and Richard Butterworth then addressed and discussed some related questions that were submitted in advance of the presentation.

Linda Collins then led a discussion on using exhibits in conjunction with areawide contracts.

Appendix A
2014 Winter FUPWG Seminar – Final Attendee List

Christopher	Abbuehl	Constellation
Steven	Allenby	Allenby Associates, LLC
Ed	Anderson	FPL
Dan E.	Arvizu	National Renewable Energy Laboratory
John	Avina	Abraxas Energy Consulting, LLC
Farhad	Banisadr	Los Alamos National Laboratory
Anneliesa	Barta	Versar, Inc.
David	Base	Chevron
Gene	Beck	FPL
Barbara	Bird	NORESCO
Andrew	Bond	Siemens Industries, Inc.
Sam	Booth	NREL
Steve	Bossart	National Energy Technology Laboratory
Sterling	Bowen	PowerSecure
Melanie	Braddock	U.S. Army Corps of Engineers, Huntsville Center
Michele	Brady	Chevron Energy Solutions
Charlie	Brewer	McLean Engineering Company, Inc.
Sean	Brownson	Department of Defense
David	Brueck	Hannah Solar Government Services
Scott	Burke	NIST
Dennis	Burke	Dominion Federal Corporation
Kari	Burman	NREL
Nathan	Butler	SunEdison
Stephen	Butterworth	Pacific Northwest National Laboratory
Chris	Calamita	US DOE
Lincoln	Capstick	Department of Veterans Affairs (VA)
Beth	Chacon	Xcel Energy
Toby	Chandler	AGL Energy Services
Donald	Chung	NREL
Bud	Clark	American Electric Power
Alex	Colby	US Air Force
Nancy	Coleal	USAF Civil Engineer Center
Linda	Collins	U.S. General Services Administration
Phillip	Consiglio	Southern California Edison
Christopher	Cook	CCI Alliance.com
Dave	Corbus	NREL
Susan	Courtney	Energetics, Inc.
Ken	Cowan	NRG Energy Inc.
Matt	Croshal	URS Corp
Doug	Dahle	NREL
Jerome	Davis	Public Service Company of Colorado
Martin	Davis	Philips
Jerry	De Boer	AEP Energy
John	Dierkes	Schneider Electric
Doug	Dixon	Pacific Northwest National Laboratory
E. W.	Dovel	Harris Lighting
John	Dukes	Constellation NewEnergy Inc.
Toni	Egan	TD Equipment Finance
Bill	Eisele	SCE&G

Michael	Ellis	AGL Resources
Tim	Ellis	Western Area Power Administration
Lisa	Estlow	Chevron Energy Solutions
Aaron	Fielder	Booz Allen Hamilton
Marilyn	Fine	Noresco
Richard (Mike)	Fleming	San Diego Gas & Electric
Peter	Flynn	Bostonia
Susan	Force	DOI/NPS
Scott	Foster	FS
Scott	Foster	Hannon Armstrong Sustainable Infrastructure
Steve	Ganzer	SEE Solutions, LLC
Patricia	Gardner Young	NRG Energy
John	Garnett	PG&E
Bobi	Garrett	National Renewable Energy Laboratory
Lara	Gast	Department of Veterns Affairs
Jessica	Georgescu	Siemens
Karen	Gierhart	Banc of America Public Capital Corp
Chris	Gillis	Pacific Gas & Electric Co.
Bathsheba	Gilmore-Turnage	Southland Energy/Southland Industries
Julieta	Giraldez	NREL
Eric	Goelzer	AGEISS, Inc.
Timothy	Greenwood	Department of Defense
Vicenta	Guerin	con edison
Timothy	Haas	Department of Defense
Glenn	Hahn	SPIRAX SARCO
Bryan	Hannegan	National Renewable Energy Lab
Tom	Harris	National Renewable Energy Laboratory
John	Hickey	Jacobs
Michella	Hill	Dept of Energy
Mark	Hillman	FPL
JP	Hoffman	Siemens
Jim	Holton	Georgia Power / Southern Company
Joe	Holton	Canoochee EMC
Chris	Hood	Gulf Power
Dave	Hopkins	540 Energy Group
Dave	Howe	Retired US Air Force
Michael	Huber	Bonneville Power Administration
Carl	Hurst	Philips
George	Imel	PowerSecure
Darcy	Immerman	AECOM
Marc	Jeanson	AECOM
Adeitra	Jimmison	Dept. of Veteran Affairs
Kevin	Johnson	Vectren - Energy Systems Group
Catherine	Johnson	Department of Veterns Affairs
Robert	Johnson	Hannon Armstrong
Jay	Johnson	Chevron Energy Solutions
Jack	Kavanagh	Utility Systems Solutions, Inc.
Grant	Keath	Ameresco, Inc.
Julia	Kelley	Oak Ridge National Laboratory
Steve	Kiesner	Edison Electric Institute
Frank	Kinder	Colorado Springs Utilties

Linda	Koman	General Services Administration
Pamela	Komer	Veterans Health Administration
Art	Kwerneland	Xcel Energy
Wayne	Latham	Dept of Energy
Jon	Lewis	Honeywell
Eric	Llewellyn	San Diego Gas & Electric
Tracy	Logan	DOE FEMP
Robert	Loop	Marine Corps Support Facility Blount Island
Jesse	Maestas	Schneider Electric
Mark	Mahoney	Army
Kazi	Mamun	Eaton Corporation
Randy	Manion	Western Area Power Administration
Paul	Matthews	Dominion Virginia Power
John	McAllister	Eaton Energy Solutions
David	McAndrew	FEMP
Matthew	McCann	Office of Secretary of Defense
James	Mccarty	Philips
Maryanne	McGowan	Duke Energy
Spencer	Mead	SCITOR
Jack	Menninger	Siemens
Josh	Mersfelder	Hannon Armstrong Sustainable Infrastructure
Scott	Michaelson	Dayton Power & Light
Bradley	Miller	Bonneville Power Administration
Chris	Mills	Energy Systems Group
Annika	Moman	AECOM
Jonathan	Mool	H2O Applied Technologies
King	Moon	NORESCO
Daryl	Moore	540 Energy Group
Maggie	Morris	TD Equipment Finance
Andrew	Morton	Johnson Controls
Kevin	Moyers	Scitor
Christina	Mudd	Exeter Associates
Kim	Mueller	Dominion
Steve	Mullen	Western Area Power Administration
Patricia	Nardone	Georgia Power
Gary	Nemmers	Department of Defense
Jeff	Niesz	Pepco Energy Services
Karma	Nilsson	CPS Energy
Michael	Norton	US Army Corps of Engineers, Huntsville Engineering Center
Eric	Nyenhuis	AECOM
Alice	Oberhausen	Alice Oberhausen Consulting
Kelly	O'Neill	Versar, Inc.
Ken	Ormsbee	Chevron
Justin	O'Rourke	Veterans Health Administration
Matthew	Patterson	Naval Facilities Engineering Command, Hawaii
Plate	Peggy	Western Area Power Administration
Charlie	Pickett	US2
Joe	Pierzina	SDG&E
Gerry	Place	Johnson Controls, Inc.
Shanti	Pless	National Renewable Energy Laboratory (NREL)
Keith	Polmanteer	Southern California Gas Company
David	Powell	NAVFAC
David	Powers	FAA

Joseph	Price	Ameresco
Mike	Pries	Federal Reserve Bank
Ray	Prosise	Spirax Sarco
Scott	Provinse	SunEdison
Kamisha	Quates	Southern Company
Baron	Rabe	SMITH/Associates
Craig	Raddatz	United Financial of Illinois
Anthony	Raimondo	Southwest Gas Corporation
Teri	Rainville-Scott	Baltimore Gas & Electric
Smidt	Randall	US Army
Kaila	Raybuck	Energetics Incorporated
Richard	Butterworth	General Services Administration
Lizette	Richardson	National Park Service - WASO Denver
David	Roberts	Cypress Envirosystems
Robi	Robichaud	National Renewable Energy Laboratory
Gerald	Robinson	Lawrence Berkeley National Laboratory
Dave	Robinson	Honeywell
Adrian	Rodriguez	El Paso Electric Company
Valentino	Rosas	Veterans Health Administration
Doug	Rothgeb	General Service Administration
Matthew	Rush	Chevron
Tommy	Sailors	Marine Corps Support Facility
Chris	Saiz	PG&E
Elton	Saxton	OG&E
Schuyler	Schell	DOE/EERE/FEMP
Jonathan	Schmidt	Department of Defense
Scott	Seigel	Siemens
Chandra	Shah	NREL
John	Shea	The Arcanum Group
Derek	Shockley	Xcel Energy
Matthew	Short	Southland Energy
David	Shutler	Utility Systems Solutions, Inc.
Christopher	Silkie	Cardno TEC, Inc.
Margaret	Simmons	US Army Corps of Engineers
Marty	Skolnick	Siemens Industry, Inc
Brant	Small	Lutron Electronics
James	Smith	PowerSecure, Inc.
Robert	Somers II	2rw Consultants, Inc.
Anthony	Spera	Con Edison Solutions
Emily	Stoddart	Department of Energy
Chuck	Strand	Enervault Corporation
Martha	Symko-Davies	National Renewable Energy Lab
Ralph	Tatum	Dominion
Michael	Taylor	American Electric Power
Ralph	Terrell	TECO Peoples Gas
Wayne	Thalasinos	NASA
Edward	Thibodo	Silver Wolf Consulting
Karen	Thomas	NREL
Carrie	Thomas	Energy Systems Group
Nello	Tortora	Soutland Energy
Oanh	Tran	Energy Systems Group
Johan	Ulloa	Constellation
Brendon	Van Campen	Lutron Electronics
Deb	Vasquez	NREL

Kevin	Vaughn	Schneider Electric
Dan	Vesey	Schneider Electric
Michelle	Ward	Pacific Gas and Electric Company
Mike	Warwick	Pacific Northwest Lab
William	Waugaman	NORAD & USNORTHCOM
Robert	Welch	Energy Crafters
Robert	Westby	NREL
Francis	Wheeler	Water Savers, LLC.
Chris	Wheeler	Powersmiths Corporation
Karen	White	USAF
Kelsey	Williams	Westar Energy
Reginald	Williams	Veterans Health Administration
L. Daryl	Williams	Tennessee Valley Authority
Brigitte	Wilson	Chevron Energy Solutions
Scott	Wolf	DOE FEMP/NW tech
Richard	Woo	Powersmiths International Corp

Appendix B
2014 Spring FUPWG Agenda

Federal Utility Partnership Working Group Seminar
May 7-8, 2014
Virginia Beach, VA

Hosted by:
Virginia Natural Gas

Monday, May 5

9:00 am – 4:30 pm	**Advanced UESC Workshop**

Tuesday, May 6

9:00 am – 4:00 pm	**Advanced UESC Workshop**
1:00 pm – 4:00 pm	**Tour of Joint Expeditionary Base Little Creek – Ft. Story**
5:00 pm – 6:30 pm	**FUPWG Steering Committee Meeting (4:15 – Utility Webinar Feedback Session)**

Wednesday, May 7

7:45 am	**Registration and Continental Breakfast**
8:30 am	**Welcome** – Donald Knight, Virginia Natural Gas
8:45 am	**DOE/FEMP Welcome and Announcements** – David McAndrew, DOE FEMP
8:55 am	**Washington Update** – Tim Unruh, DOE FEMP Program Manager
9:20 am	**GSA Update** – Mark Ewing, General Services Administration
9:40 am	**Combined Heat and Power** ▪ Mike Ellis, AGL Resources (Moderator) ▪ Pam Maines, PEPCO Energy Services ▪ Isaac Panzarella, US DOE Southeast CHP Technical Assistance Partnership
10:30 am	**Networking Break**
11:00 am	**Case Study: Luke AFB Solar Project Challenges and Lessons Learned** – Karen White, Air Force
11:40 am	**Using Data to Achieve Anticipated Savings** ▪ Matt McCann, Office of the Secretary of Defense (Moderator) ▪ Karen Curran, General Services Administration ▪ David Gillikin, NAVFAC Atlantic
12:30 pm	**Lunch –** Rear Admiral Douglas G. Morton – Commander, Naval Facilities Engineering Command, Atlantic
1:30 pm	**M&V in UESCs** ▪ Leila Comer, AGL Resources, Energy Services (Moderator) ▪ Randy Smidt, Army ▪ Bob Somers, 2rw Consultants, Inc. ▪ Karen Thomas, National Renewable Energy Laboratory
2:15 pm	**UESC Best Practices – Rebates and Incentives, OMB Scoring Requirements** ▪ Karen Thomas – National Renewable Energy Laboratory (Moderator) ▪ Karen White – Air Force
2:45 pm	**Networking Break**
3:15 pm	**UESC Best Practices – Utility Subcontracting Methodologies** ▪ Patricia Nardone, Southern Company ▪ Cyndi Vallina, Office of Management and Budget
3:50 pm	**Large Scale Energy Storage** - Phill Consiglio, Southern California Edison

4:30 pm	**Wrap-up** – David McAndrew, DOE FEMP
6:00 – 7:30pm	**Networking Event**

Thursday, May 8

7:45 am	**Continental Breakfast**
8:30 am	**Announcements** – David McAndrew, DOE FEMP
8:35 am	**Net Energy Metering** ▪ Phill Consiglio, Southern California Edison ▪ Chandra Shah, National Renewable Energy Laboratory
9:15 am	**New Gas Technologies** – Eric Burgis, Energy Solutions Center
10:00 am	**Networking Break**
10:30 am	**NREL's New Auditing Tool** – Lars Lisell, National Renewable Energy Laboratory
11:15 am	**DOE Building Technologies Office Overview** – Richard Karney, DOE Office of Energy Efficiency & Renewable Energy
11:55 am	**Evaluations and Wrap-up** – David McAndrew, DOE FEMP
Noon	**Lunch On Your Own**

Special Session: Thursday, May 8
Energy Lawyers and Contracting Officers Working Group

Facilitators: Linda Collins, GSA and Julia Kelley, ORNL

1:00 pm	**Announcements and Introductions -** Linda Collins (GSA) and Julia Kelley (ORNL), FEMP Utility Team
1:05 – 2:00pm	**ASBCA Ruling on the Sale of RECS for Government-owned Projects** ▪ Linda Collins, GSA (Moderator) ▪ Richard Butterworth, GSA ▪ Kay Sommerkamp, Army Corps of Engineers
2:00 - 2:30pm	**How to Arrange for Utility Services (if time allows)** ▪ Julia Kelley, FEMP Utility Team (Moderator) ▪ Linda Collins, GSA ▪ Bill Eisele, South Carolina Gas & Electric (invited)
2:30 pm	**Adjourn**

2014 Fall FUPWG Seminar

November 5-6, 2014
Cape Canaveral, Florida

Hosted by:

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