Federal Utility Partnership Working Group Meeting

October 25–26, 2011

Hosted by Philadelphia Gas Works
Philadelphia, PA

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 held in Philadelphia on October 25 and 26 was attended by 178 professionals from the following organizations:

- 46 utility officials
- 39 federal agency representatives
- 11 national laboratory representatives
- 82 representatives from energy-related organizations

The complete meeting participant list can be found in Appendix A and the meeting agenda in Appendix B. The meeting presentations can be found at http://www1.eere.energy.gov/femp/financing/uescs_fall11_agenda.html.

Day 1 – Tuesday, October 25, 2011

Welcome Remarks from the Host Utility
Maryanne Campbell, Director of Strategic Initiatives, Philadelphia Gas Works

Maryanne Campbell welcomed attendees to the meeting. She provided background information on Philadelphia Gas Works (PGW) as well as the progress the company has made on several energy efficiency initiatives and programs. PGW is the largest municipally owned natural gas utility in the United States. It was founded in 1836 and has 500,000 customers. PGW started investigating Utility Energy Service Contracts (UESCs) in 2007 and signed an areawide agreement with General Services Administration in 2009.

To view Ms. Campbell's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_campbell.pdf

Chairman's Corner
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 and delivered logistics-related meeting announcements. He recognized Bill Sandusky with Pacific Northwest National Laboratory for his long-term dedication to FUPWG. Mr. McAndrew also recognized Phyllis Stange with the U.S. Department of Veterans Affairs for the great success this agency has had in signing UESC agreements in FY 2011.

Washingtong Update
Dr. Timothy Unruh, Program Manager, FEMP, U.S. Department of Energy

Timothy Unruh provided an update on FEMP activities focusing on three areas:

- FEMP Government Goals and Status
- FEMP Update
- UESC Program Overview and Goals

Dr. Unruh outlined the FEMP goals to reduce the federal government's environmental footprint and provided the following status updates:

- Use Renewable *Electric* Energy
  - Goal: Use renewable electric energy equivalent to at least 5% of total electricity use; at least half of which must come from sources developed after January 1, 1999. Must be at least 7.5% in FY 2013 and thereafter.
  - Status: 5.2% overall
- Reduce Greenhouse Gas Emissions
  - Goal: Reduce government-wide greenhouse gas (GHG) emissions by 28% for Scope 1 & 2 emissions and 13% for Scope 3 emissions by 2020 (from 2008 levels).
  - Status: 6.4% for Scope 1 & 2; Scope 3 pending
- Reduce Energy Intensity
  - Goal: Reduce energy intensity (Btu/square foot) by 15% in FY 2010 compared to FY 2003; 30% reduction required by FY 2015.
  - Status: 15% reduction (only 10.7% without additional credits)
- Reduce Water Consumption Intensity
  - Goal: Reduce water consumption intensity (gal/sf) by 6% relative to 2007 baseline; 16% by the end of FY 2015; 26% by FY 2020.
  - Status: Government reduced water consumption intensity by 10.2% in FY 2010 compared to FY 2007.

Dr. Unruh provided a summary of current FEMP training efforts, which are based on the following mandatory federal drivers:

- Energy Independence and Security Act
- Energy Policy Act

- Executive Order 13514
- Office of Management and Budget Scorecards
- Federal Personnel Training Act of 2010

Dr. Unruh discussed ENABLE, which is a financing program for energy efficiency and water projects at smaller facilities that have been traditionally underserved. This program helps agencies meet federal mandates at their facilities. FEMP recently established The Technology Deployment Program, which helps agencies identify advanced and underutilized technologies, understand needs and barriers, and accelerate deployment while sharing lessons learned and incorporating institutional change.

Dr. Unruh then discussed the Utility program activities focusing on the following goals:

- Eliminate barriers to project implementation
- Provide direct technical assistance
- Build capacity
- Provide outreach and guidance documents
- Emphasize project and program reporting
- Provide training

Dr. Unruh discussed the significance of the August 2011 Office of Management and Budget memo, which encourages agencies to consider the responsible use of performance-based contracts that offer private-sector investment and consult with FEMP in order to take advantage of FEMP expertise. The memo also encourages agencies to report Energy Savings Performance Contracts (ESPCs) and UESCs to FEMP.

The presentation continued with a review of key UESC project data:

- Average annual project investment: $123 million
- Utilities engaging in UESC: approximately 40
- UESC utilities active in FUPWG: approximately 20

Dr. Unruh concluded his presentation with an invitation to attend the 2012 Spring FUPWG meeting scheduled for April 11–12 in Jekyll Island, GA. AGL Resources is hosting the spring meeting.

To view Dr. Unruh's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_unruh.pdf

Utility Discussion: 10 USC 2922a
Joe Sikes, Director for Facilities Energy and Privatization, U.S. Department of Defense (DOD), Office of the Secretary of Defense (OSD)
James M. Cannon, Office of the Assistant Secretary of the Navy (Energy)/Naval Facilities Engineering Command (NAVFAC) Headquarters (HQ), U.S. Department of the Navy

Joe Sikes serves as Director for Facilities Energy and Privatization in the Office of the Deputy Under Secretary of Defense for Installations and Environment. He is responsible for policy and

oversight of the department's facilities energy programs, privatization of utilities and housing, and competitive sourcing.

Mr. Sikes provided an overview of DOD Third-Party Financing Authorities including:

- Power Purchase Agreements (PPAs)
  - 10 years – FAR Part 41
  - Up to 30 years – 10 U.S.C. 2922a
- Enhanced Use Lease (EUL)
  - 5 years or longer with approval – 10 U.S.C. 2667
- Energy Savings Performance Contracts
  - Up to 25 years – 42 U.S.C. 8256/10 U.S.C. 2913
  - Utility Energy Service Contracts 10 years – 10 U.S.C. 2913 provides for obtaining the savings and benefits of a UESC, but does not contain any authority to contract beyond the 10-year limit provided generally for utility contracts under 40 U.S.C. 501(b)(1)(B)

Details of 10 U.S.C. 2922a were discussed. The Secretary of a military department may enter into contract for up to 30 years with approval from the Secretary of Defense for the provision and operation of energy production facilities on real property under the Secretary's jurisdiction or on private property including the purchase of energy produced from such facilities. The costs of contracts under this section for any year may be paid from annual appropriations for that year.

10 U.S.C. 2922a examples include Marine Corps Air Station Miramar and Naval Air Weapons Station China Lake.

James M. Cannon with the Office of the Assistant Secretary of the Navy (Energy)/Naval Facilities Engineering Command (NAVFAC) HQ continued the presentation by outlining success stories and lessons learned relating to 2922a. He stressed the importance of developing a "list of documents" with guidance and providing detailed and thorough documentation. Mr. Cannon shared the Department of the Navy 2922a Process Flow Map, which outlines the complex approval process and provided a list of documents that should be provided with 2922a. He confirmed that 2922a is still a work in progress.

To view Mr. Sikes' presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_sikes.pdf.

To view Mr. Cannon's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_cannon.pdf.

Edison Electric Institute (EEI) Update
Steve Kiesner, Director, National Customer Markets

Steve Kiesner with the Edison Electric Institute provided an overview of the changing electric utility landscape. The utility industry has embarked on a major investment cycle and the concerns about the environment have changed our power supply mix. The utility role for driving new technology

has become increasingly complicated with the current combination of low economic growth, flat electricity demand growth, deficit concerns, and sustained high unemployment.

Mr. Kiesner spoke on emerging infrastructure issues including transmission, distribution, and generation. Financial trends were discussed that focused on mergers and acquisition themes and trends. Prior mega mergers focused on increasing scale and scope of competitive generation operations, with a multi-regional focus. Recent merger announcements focus on creating a larger regional footprint for regulated utility operations.

Mr. Kiesner then discussed the climate policy in Washington, DC, reporting that no climate legislation is likely. The eye now is on the U.S. Environmental Protection Agency, which will start this year regulating GHGs under a Clear Air Act. We should also expect continued attention on new environmental regulations for coal generation, not only for carbon emissions, but also for hazardous air pollutants, coal ash disposal, and more stringent standards for cooling towers for both coal and nuclear facilities.

The presentation concluded with a discussion on the economics and making the investments work for customers.

To view Mr. Kiesner's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_kiesner.pdf.

UESC Case Study: The Philadelphia Navy Yard
Christopher Abbuehl , Constellation Energy
Maryanne Campbell, Philadelphia Gas Works
M. Richard Boyette , NAVFAC MIDLANT, Utilities & Energy Management
Beverly C. Wade, NAVFAC MIDLANT, Energy Management Division

Christopher Abbuehl with Constellation Energy began the presentation by providing some background information on his company and the Energy Service Company services that they provide. Constellation Energy is an integrated energy company and has implemented over 4,000 energy savings projects for large governmental, institutional, and private sector customers. They have worked with eight utilities with projects ranging from $35 M to $2 K.

Mr. Abbuehl provided some historical background on the Philadelphia Navy Yard and reviewed its current operations. He then presented the UESC project profile:

- Phase 1 Scope – Decentralization of central heating plant and install gas pipeline and separate heating systems for each building
- Building affected – 21 buildings covering 1.3 million sq/ft of heated space
- Project size - $15 million
- Timeline – Project award expected February 2012 with construction completion by October 2012

Project challenges and timelines were reviewed. Project benefits include a savings to the U.S. Navy of $2.2 million per year, infrastructure upgrades of $15 million, and reduced fuel consumption.

Next, Maryanne Campbell with Philadelphia Gas Works described the project from the utility perspective and talked about the PGW team involved with the project.

Then Bevery C. Wade with NAVFAC MIDLANT, Energy Management Division, and Richard Boyette with NAVFAC MIDLANT, Utilities & Energy Management, jointly presented additional details on the project and provided a detailed listing of Measurement and Verification resources and steps. Difficult issues in conjunction with this project include working in historic buildings, obtaining air permits, accommodating two bill payers, and having an extremely tight construction schedule. Financed energy project challenges were also discussed, including the inconsistencies between legislative mandates, legal interpretations, and FEMP guidelines with the NAVFAC UESC BMS process.

To view Mr. Abbuehl's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_abbuehl.pdf

To view Ms. Wade and Mr.Boyette's joint presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_wade.pdf

Technology Panel
Bill Valentine, Mid-Atlantic Regional Clean Energy Application Center
Clean Energy from Landfill Methane, Ft. Benning Project
Brad Hancock, Flex Energy
Peter Devlin , U.S. Department of Energy Fuel Cell Technologies Program

Bill Valentine is in the Architectural Engineering Department at Penn State University and is responsible for managing the Mid-Atlantic Clean Energy Applications Center (MACEAC) located at the Philadelphia Navy Yard. The MACEAC is a Department of Energy program tasked with promoting the use of combined heat and power (CHP), district energy, and waste head recovery throughout the Mid-Atlantic region. Mr. Valentine spoke about the U.S. Department of Energy's (DOE's) Clean Energy Application Centers and provided details on their services and capabilities which include providing unbiased information, targeted education and technical assistance.

Mr. Valentine provided details on CHP technology. CHP is not a single technology but a suite of technologies that can use a variety of fuels to generate electricity or power at the point of use. CHP technology can be deployed quickly, cost effectively, and with few geographic limitations.

Brad Hancock served 21 years in the U.S. Navy prior to joining FlexEnergy, Inc. He is currently managing the full spectrum of facilities engineering issues, including planning, programming, budgeting, and executing; long-range requirements; multimillion dollar construction projects; management of critical utility infrastructure; and administration of service contracts.

Mr. Hancock began his presentation with a company overview of FlexEnergy, Inc. He continued with an overview of FlexEnergy's breakthrough technology, which efficiently converts pollution and waste gases into electricity at a temperature high enough to destroy volatile organic compounds and CO, and low enough to not create NO. This process integrates mature gas turbine technologies with a proprietary thermal oxidizer that can handle low-, medium-, and high-grade fuel streams, which generate continuous, clean, distributed power, regardless of fuel source, methane content, or

application. FlexEnergy has overcome traditional challenges that face power generation technologies in a variety of applications.

FlexEnergy's technology has widespread application in various markets including digester gas, associated and natural gas, biogas, cogeneration, and tail gas.

Mr. Hancock concluded his presentation with an overview of the FP250 project at Fort Benning, GA.

Peter Devlin, Market Transformation Manager with DOE's Fuel Cell Technologies Program, reported that a variety of fuel cell applications including assured power, on-line critical power, renewable fuel, off-grid power, and indoor green power/cogeneration highlight positive market potential. Data Centers are a good fit for fuel cell energy streams. Fuel cells use an efficient electrochemical process to generate electricity and heat, with low or zero emissions, offering benefits in a wide range of applications. Analysis efforts are underway to provide information on potential costs and benefits of a variety of stationary fuel cell applications.

Mr. Devlin reviewed the federal and state policies promoting fuel cells and shared information on DOE's education and outreach programs, which include collaborations with universities, governments, and industry to help educate the public about H2 and fuel cells.

To view Mr. Valentine's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_valentine.pdf.

To view Mr. Hancock's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_hancock.pdf.

To view Mr. Devlin's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_devlin.pdf.

Day 2– Morning, Wednesday, October 26, 2011

UESC Case Study: NASA AmesResearch Center (ARC)
Roger Farzaneh, Principal Product Manager, Customer Energy Solutions, Pacific Gas & Electric Company
Harry Sim , CEO, Cypress Envirosystems

Roger Farzaneh is a Principal Product Manager with the Customer Energy Solutions group with Pacific Gas and Electric Company where he currently manages their UESC program for federal customers. Mr. Farzaneh began the case study with an overview of NASA's energy challenges which included:

- Compliance with federal mandates
- Very low electric cost
- Not eligible for electric incentives
- Aging mechanical and electrical infrastructure
- Many renewable projects not economically viable due to low electric cost

Mr. Farzaneh then outlined the UESC project goals:

- Identify economically viable projects that, when implemented, will help ARC achieve its energy efficiency goals
- Install a roof-mounted photovoltaic system on ARC's new net-zero administration building
- Replace inefficient boilers throughout the facility that do not meet South Bay Area Quality Management District standards (32 boilers)
- Expand and upgrade the existing Facility Management Control System and implement Retro-Commissioning strategies
- Procure maximum available utility incentives

The project Energy Conservation Measures were discussed as well as the project benefits and expected results which included a 15% reduction in annual energy and operational costs.

Harry Sim is the founder and CEO of Cypress Envirosystems. Mr. Sim's presentation focused on how NASA Ames saves energy and reduced project costs by over 80% with non-invasive retrofit technologies Seventy percent of buildings in North America still have pneumatic thermostats which waste energy, are expensive to retrofit, and are disruptive to occupants to maintain. The wireless pneumatic thermostat (WPT) retrofit is less expensive and leaves walls intact, which means that there is no asbestos disturbance. Installation of the WPT takes 20 minutes per thermostat with no impact on occupants. WPT enables the same energy and maintenance benefits as traditional DDC. Mr. Sim shared utility data from WPT projects and discussed how non-invasive retrofit technologies save energy and improve operations in many applications in various types of facilities including Architect of the Capitol, GSA, NASA, Social Security Administration, State of California, and U.S. Department of Veterans Affairs hospitals.

To view Mr. Farzaneh's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_farzaneh.pdf.

To view Mr. Sim's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_sim.pdf.

RAND Corporation: Making the Connection – Beneficial Collaboration between Army Installations and Energy Utility Companies
Beth Lachman, Senior Operations Research Analyst, RAND Corporation

Beth Lachman is a Senior Operations Research Analyst with over 20 years of experience at RAND, specializing in military installation, energy and environmental management, and geospatial technology analysis. Ms. Lachman discussed the motivation for conducting the RAND study and stated the objective, which was to develop recommendations for improving Army installation collaboration with utilities to reduce traditional energy usage.

The tasks of the RAND Study were to:

- Examine current collaboration
- Identify problems and barriers to collaboration

- Identify and assess options for improving collaboration
- Develop recommendations to improve installation and utility collaboration.

Ms. Lachman reviewed some examples of utility-installation collaboration projects, which included the Fort Knox and Fort Campbell UESCs. She then discussed some barriers to installations implementing UESCs and collaborating with utilities which included staff issues, renewable energy investment issues, and the fact that some utilities are not interested in participating. Recommendations to motivate more utilities to collaborate with army installations include promoting more direct outreach, provide more education, allow at least a 30-year payback in UESC, and speed the federal process when possible.

The report can be found at: http://www.rand.org/pubs/monographs/MG1126.html.

To view Ms. Lachman's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_lachman.pdf.

Agency Update: Army Energy Initiative Task Force
Kathy Ahsing, Director, Planning and Development, Army Energy Initiative Task Force

The Energy Initiative Task Force (EITF) was announced by the Army Secretary on August 10, 2011. EITF is a collaboration with the private sector to invest in cost-effective, large-scale renewable energy projects on Army installations. Ms. Ahsing outlined the goals of the task force which include:

- Power Army communities with renewable energy to secure the nation
- Increase Army's energy security
- Meet goal of 25% renewable energy by 2025 with additional 2.1 million MWh annually

The mission of the task force is to strengthen Army energy security and sustainability by developing a comprehensive capability and planning and executing a cost-effective portfolio of large-scale renewable energy projects by leveraging private sector financing. Ms. Ahsing reviewed the Army's enabling authorities and concluded the presentation with a review of the common goals shared by FUPWG and EITF. The EITF views the utility industry as a key stakeholder in planning and implementing sustainable and renewable energy strategies in support of Army communities.

To view Ms. Ahsing's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_ahsing.pdf.

FEMP Exterior Solid State Lighting (SSL) Project Update
Jeff McCullough, Senior Research Engineer, Pacific Northwest National Laboratory (PNNL)

Jeff McCullough is a Senior Research Engineer with DOE's PNNL. His main area of focus is in commercializing energy-efficient technologies, particularly lighting and heating, ventilation, and air conditioning systems. Mr. McCullough shared a graph that showed the energy savings potential of SSL. He stressed that this was a market in motion with a large number of new products and a significant learning curve for manufacturers and buyers. SSL is fundamentally different from conventional technologies. Unfamiliarity and lack of field data mean increased risk and there is a great deal of hype and misinformation.

Mr. McCullough discussed the value and challenges of solid-state lighting and reviewed DOE's SSL program strategy. He talked about the L-Prize contest, which was awarded to Philips Lighting in August 2011.

Current information on the SSL program, progress, and events can be found on www.ssl.energy.gov.

To view Mr. McCullough's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_mccullough.pdf.

DOD Energy Siting Clearinghouse at the Office of the Deputy Under Secretary of Defense (Installations & Environment)
David Belote, Director, Office of the Secretary of Defense (OSD) Siting Clearinghouse

Dave Belote is the Director of OSD's Siting Clearinghouse. Mr. Belote outlined DOD's Siting Clearinghouse Concept of Operations.

- A Single DOD Voice
  - Parallel multi-service review
  - Timely, repeatable, predictable process
  - Promote compatibility between renewable energy and military mission operations
  - Oversight and coordination of mitigation negotiation
  - Decisions based on empirical data and rigorous science
  - Outreach and early consultation with industry, local, state, and federal stakeholders
  - Not a replacement for Obstruction Evaluation/Airport Airspace Analysis, National Telecommunications and Information Administration or National Environmental Policy Act.
- Impact Analysis and Tools
  - Projects assessed by all DOD components across core missions.
  - Evaluation criteria
  - Mission Compatibility Awareness Tool
  - Operational Impact Assessment Tools
  - Preliminary Review: 30 days
  - Final Decision: DepSecDef

Mr. Belote reported early DOD siting clearinghouse success statistics including:

- **249**: Number of projects delayed due to DOD concerns prior to the passage of Section 358 in the FY2011National Defense Authorization Act.
- **229**: Number of projects the DOD Siting Clearinghouse and Components found that have minor/no impact on military missions
- **20**: Number of projects that may have adverse impacts on military missions and require additional analysis to determine if mitigation is possible
- **10**: Gigawatts of mission-compatible renewable energy electrical generation capacity (6,300 plus turbines, 30 solar projects)

Mr. Belote discussed the successful Travis Air Force Base Cooperative Research and Development Agreement project where the siting of turbines created tracking issues. A partnership is now in place to better address future siting issues.

To view Mr. Belote's presentation, visit:
http://www1.eere.energy.gov/femp/pdfs/fupwg_fall11_belote.pdf.

Day 2– Special Afternoon Session, Wednesday, October 26, 2011: Energy Lawyers and Contracting Officers Working Group

Contracting Officers Guidebook
Deb Beattie and Karen Thomas, National Renewable Energy Laboratory (NREL)
Ms. Beattie and Ms. Thomas with the National Renewable Energy Laboratory (NREL) provided a progress report on the new Contracting Officers Guidebook. The UESC contracting guide will include information, sample documents, and templates needed to implement a task order under the GSA Areawide. FEMP is developing this initial guide for DOE sites. Subsequent books will be developed for other agencies as requested.

The objectives of the UESC Contracting Officers Guidebook are to:

- Define UESC
- Provide the steps involved in developing a UESC
- Provide objectives, strategies, samples, and templates
- Provide best practices and lessons learned

The guidebook will provide samples for each UESC components, including statement of work, government cost estimate, sample documents, review strategy, templates, and best practices.

UESC Contracting and Legal Issues Discussion

Steve Kiesner, Edison Electric Institute
Steve Allenby, Steve Allenby & Associated

Steve Kiesner and Steve Allenby co-led this discussion on some of the current UESC contracting and legal issues. Much of the discussion focused on the issues relating to the U.S. Navy, including the 10-year term limit for UESCs. FEMP has participated in meetings with OSD to find a way around this limit. The leaders addressed many questions from the audience relating to these issues.

Federal On-Site Renewable Power Purchase Agreements

Tracy Logan , Department of Energy, Federal Energy Management Program
Chandra Shaw, National Renewable Energy Laboratory
Tracy Logan with DOE/FEMP and Chandra Shah with the National Renewable Energy Laboratory discussed several issues relating to Federal On-site Renewable Power Purchase Agreements. The presentation began with a summary of the Council on Environmental Quality/OMB August 2011 memo, which encourages agencies to use ESPCs and UESCs and requests agencies to report ESPCs

and UESCs to FEMP. FEMP is drafting papers on deployment issues. Please email suggested topic to Ms. Logan or Ms. Shaw. The presentation then focused on termination issues relating to these agreements including whether or not funding should be set aside for termination and what FAR clauses apply.

The presenters covered the key discussion points from the GovEnergy PPA workshop including:

- FAR Part 31 can be used to determine allowable costs.
- FAR 52.241-10 provides reimbursement for remaining facility costs.
- FAR 52.249-2 provides reimbursement for other allowable costs.
- FAR Part 49 discussed termination for convenience rights and responsibilities.

Appendix A

Federal Utility Partnership Working Group Meeting
October 25–26, 2011
Meeting Participants List

Utility	
Ed Anderson	FPL Energy Services
Gene Beck	Florida Power & Light
George Biandis	DTE Energy
Elise Blair	Philadelphia Gas Works
Jeffery Brown	Sandhills Utility Services, LLC
Steve Buchanan	OG&E Electric Services
Maryanne Campbell	Philadelphia Gas Works
Christopher Cavanagh	National Grid
Toby Chandler	AGL Energy Services
Bud Clark	American Electric Power
Phillip Consiglio	Southern California Edison
Scott Dever	Philadelphia Gas Works
Damon Downing	Washington Gas
John Dukes	Constellation Energy
David Dykes	Georgia Power/Southern Company
Roger Farzaneh	PG&E
Mary Galasso	Philadelphia Gas Works
Christopher Gillis	Pacific Gas & Electric Company
David Guebert	San Diego Gas and Electric
Vicenta Guerin	Con Edison Co. of NY
Brian Hashimoto	Johnson Controls, Inc.
Joe Holton	Canoochee EMC
Dan Hooks	Canoochee EMC
John Jackson	Progress Energy
Kevin Johnson	Vectren - ESG
Stan Knobbe	Southern California
Gary Kolp	American Water
Art Kwerneland	Xcel Energy
Stephanie Manzo	Philadelphia Gas Works
Joe Maranto	Constellation NewEnergy
Dennis Maschinot	TECO Peoples Gas
Gordon Maynard	Southern California Gas Company
Kieran McGovern	Philadelphia Gas Works
Jo Ann Muniz	PGW

Fran Munizza	Philadelphia Gas Works
John Murray	Philadelphia Gas Works
Patricia Nardone	Georgia Power
Jane Parks	AGL Resources
Keith Polmanteer	Southern California Gas Co.
Veronica Porter	Gulf Power
Joe Smith	Philadelphia Gas Works
Ralph Terrell	TECO Peoples Gas
Oahn Tran	Washington Gas Light Company
Dan Tunnicliff	Southern California Edison
Dean Yobs	FPL Energy Services
Sherif Youssef	Philadelphia Gas Works

Federal Agency	
Richard Boyette	NAVFAC Midlant Utilities
Linda Collins	U.S. General Services Administration
Anne Crawley	US Dept of Energy, FEMP
Doug Culbreth	DOE contractor
Vickie Davis	USAF
Pete Devlin	Fuel Cell Technologies Program, U.S. Department of Energy
James Faust	Federal Reserve Bank of Philadelphia
Paul Hahn	Defense Logistics Agency-Energy
Thomas Hattery	DOE-FEMP
Shawn Herrera	U.S. Department of Energy
David Jacobson	Department of Veterans Affairs
Andrea Kincaid	DLA Energy
Karin King	DOE Livermore Site Office
Linda Koman	U.S. General Services Administration
Stephan Lewis	General Services Administration
Tracy Logan	US DOE FEMP
David McAndrew	FEMP
Gary Meredith	Ft Knox KY
Robert Mohler	Letterkenny Army Depot
Ava Morgan	DHS
Lawrence Michael Norton	USACE, Huntsville Engineering & Support Center
Cynthia Obermeyer	DLA Energy
Jack Olski	45 CES/CEAO
Susan Pentz	Dept. of Veterans Affairs
James Richards	USAF
Colina Rivetts	National Park Service
Agnes Schaefer	RAND Corporation

Kristine Sedey	USPS
David Shinn	Air Combat Command
Margaret Simmons	US Army Corps of Engineers
Randall Smidt	US Army
Donald Snider	GSA
Kathryn Sommerkamp	US Army Corps of Engineers
Wendy Spegal	USACE
Phyllis Stange	Dept of Veterans Affairs
Rae Sullivan	Federal Prison Industries/ UNICOR
Wayne Thalasinos	NASA
Frederick Thompson	NRO
Beverly Wade	NAVFAC Midlant Utilities

National Laboratory	
Deb Beattie	National Renewable Energy Laboratory
Stephen Butterworth	Pacific Northwest National Laboratory
John Christensen	NREL Consultant
Phil Coleman	Lawrence Berkeley National Laboratory
Doug Dixon	Pacific Northwest National Laboratory
Julia Kelley	Oak Ridge National Laboratory
Jeff McCullough	Pacific Northwest National Laboratory
Bill Sandusky	Pacific Northwest National Laboratory
Chandra Shah	National Renewable Energy Laboratory
Karen Thomas	National Renewable Energy Laboratory
Mike Warwick	Pacific Northwest National Laboratory

Energy Related	
Christopher Abbuehl	Constellation Energy
Steve Allenby	Allenby Associates, LLC
Michael James	SunPower
Mark Begeny	WhiteHawk Capital, LLC
Sterling Bowen	Southern Energy Management
Steve Boyle	Pepco Energy Services
Robert Boyajieff	Noresco
Charlie Brewer	McLean Engineering
Dave Buemi	Suniva, Inc.
Dennis Burke	Dominion Federal Corporation
Norm Campbell	NORESCO
Jason Cartozian	Conedison Solutions
Edward Cipro	TD Equipment Finance

Patrick Clark	McKinstry
Susan Courtney	Energetics
Aly Dean	Energetics
Kevin DeGroat	Antares Group, Inc.
Cliff DenDekker	Encelium
Regina Durga	Siemens
Richard Eppley	G Energy Funding, LLC
Stuart Erhardt	AECOM
Peter Flynn	Bostonia Partners LLC
Brook Ford	Encelium Technologies
Scott Foster	Hannon Armstrong
Alison Gangl	Schneider Electric
Steve Ganzer	SEE Solutions, LLC
Norbert Garbisch	PNC Equipment Finance
Karen Gierhart	Banc of America Public Capital Corp
Laura Girard	Burns & McDonnell
Bruce Gross	Dominion Federal Corporation
Glenn Hahn	Spirax Sarco
Mark Hamilton	Federal Business Group
Brad Hancock	FlexEnergy
Barbara Hathaway	BetaLED
Emily Heppen	Energetics
George Imel	PowerSecure Inc.
Brian Jacks	Emacx Inc.
Jay Johnson	Chevron Energy Solutions Company
Rich Kaelin	Federal Business Group
Tim Kehrli	Lutron Electronics
Tommy Kellogg	PowerSecure
Steve Kiesner	Edison Electric Institute
Sean Knowles	McLean Engineering
Beth Lachman	RAND
Jon Lewis	Honeywell
Carl Lundstrom	Eaton Energy Solutions, Inc.
Sandy MacMurtrie	Johnson Controls
John Martin	Pepco Energy Services
Mike Mason	DC Solutions, LLC
Dave McNeil	Hannah Solar Government Services
Josh Mersfelder	HANNON ARMSTRONG
Terrance Murrell	PNC Equipment Finance
Ken Nathanson	CONEDISON SOLUTIONS
John Pardekooper	Siemens Industry Inc.

Chris Pimentel	H2O Applied Technologies
James Plourde	Schneider Electric
John Poerstel	Encelium Technologies
Jacqueline Powell	General Dynamics Information Technology
Frank Pucciano	Sabot 6
Jeff Puffer	Honeywell
David Roberts	Cypress Envirosystems
Natasha Shah	Siemens
Matt Rush	Chevron
David Shutler	US2 Inc.
Hope Sidman	H2O Applied Technologies
Harry Sim	Cypress Envirosystems
Robert Somers II	2rw Consultants, Inc.
Joe Spata	Federal Business Group
Richard Stoicsitz	Federal Business Group
Jeff Stott	Avid Energy
King Tang	The McKinstry Company
Ed Thibodo	Silver Wolf Consulting
Art Thompson	Siemens
Bill Valentine	Penn State
Kevin Vaughn	Schneider Electric
Michael Webb	Lockheed Martin
Robert Welch	Ameresco
Francis Wheeler	Water Savers, LLC
Chris Wheeler	Powersmiths Intenational Corp
Steven Williams	Green Campus Partners, LLC
Walter Winans	Siemens
Billy Wise	Eaton

Appendix B

Federal Utility Partnership Working Group Meeting
October 25–26, 2011
Agenda

Day 1
Philadelphia Gas Works Welcome
Chairman's Corner
Washington Update
Utility Discussion: 10 USC 2922a
EEI Update
UESC Case Study: The Navy Yard
Technology Panel:

- CHP Technologies
- Clean Energy from Landfill Methane
- Fuel Cell Technologies

Day 2
UESC Case Study: NASA Ames Research Center
RAND Corporation Study: Making the Connection: Beneficial Collaboration between Army Installations and Energy Utility Companies
Agency Update: Army Energy Initiative Task Force
FEMP Exterior SSL Project Update
DOD Energy Siting Clearinghouse at Office of the Deputy Undersecretary of Defense (Installations and Environment) – David Belote, OSD