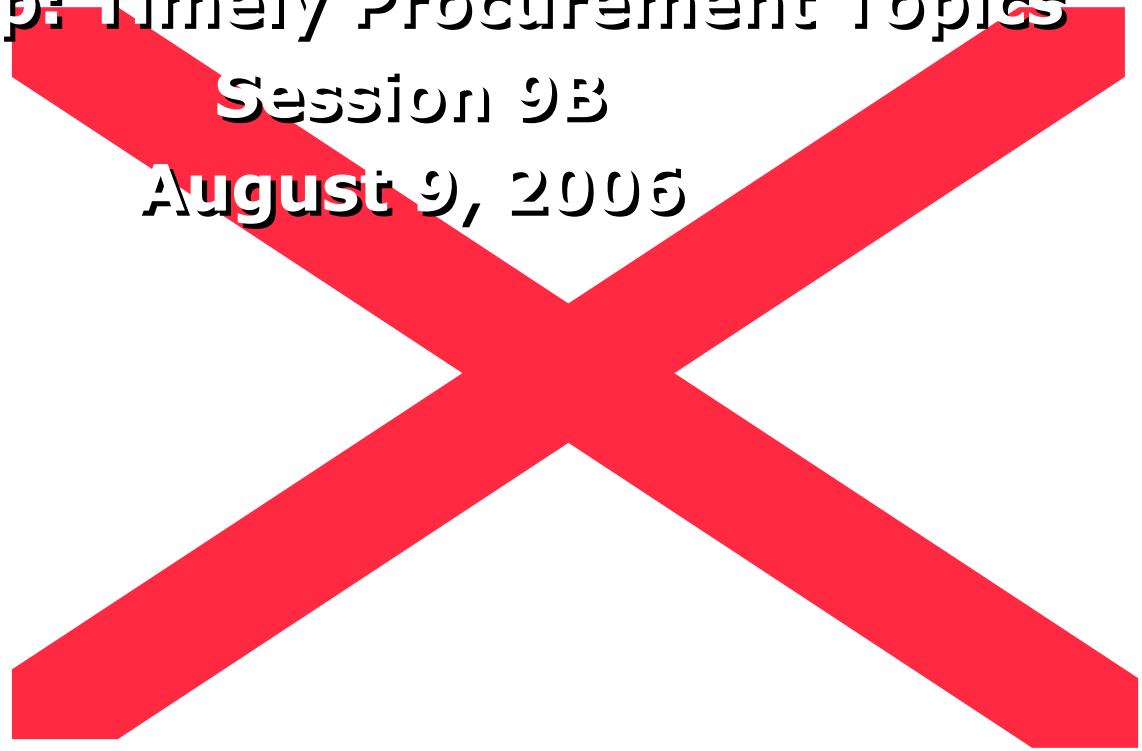
New Agency Initiatives

Pit Stop: Timely Procurement Topics

Session 9B

August 9, 2006



GSA

Energy Center of Expertise

New GSA Initiatives

Implementing EPACT 05 Requirements

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What's New at GSA

- Agency Developments -Alternative Financing
  - _ Response to GAO Audit
- Regional Targets _ to meet reduction goals
- Advance Metering Effort
  - _ The GSA advanced metering system will be integrated with GSA's existing tracking program.
  - _ Deployment will occur over several years, with completion occurring in FY 2012.

GAO ESPC Audit Impact

- GAO Audit GAO-05-340 recommendations
  - Collect and use ESPC-related data more effectively
  - Use appropriate expertise when agencies undertake an ESPC.
  - Require agency audit office to conduct audits of ESPC projects
  - Strengthen ESPC contracting centers of expertise
  - Strengthen competition including the IDIQ recompete
  - Collect agency ESPC information more extensively (DOE)

_ http://www.gao.gov/highlights/d05340high.pdf

GAO Audit - GSA Specific Recommendations

1. GSA compile info on key contract terms such as interest rates and mark-ups for energy-efficiency equipment for each ESPC and as a key part of best practices, make info accessible to agency officials in negotiating subsequent ESPCs.
2. GSA ensure that the agency officials responsible for ESPC decision-making use appropriate expertise when they undertake and ESPC. Cost in acquiring this expertise should be considered in deciding whether to use an ESPC.
3. GSA require inspectors general or other audit offices to conduct audits of ESPC projects to ensure the projects are achieving their expected results.

GSA Action Plan _ Recommendation 1

- Prepare memo for signature of AC, Office of Applied Science (OAS) requiring that all GSA Regional Offices input ESPC contract-specific data into energy project database
- Prepare memo for signature of Director, ECOE reminding Regional Energy Coordinators to periodically review entries in project database with respect to various contract terms. Also encourage using contracting, financial & asset expertise when developing projects.

GSA Action Plan _ Recommendation 2

- Prepare memo for signature of AC, Office of Applied Science requiring the use of DOE Project Facilitators when entering into ESPC. Also recommending centralizing expertise on ESPCs in the Regions.

GSA Action Plan _ Recommendation 3

- Submit a random sample of ESPCs for review by DOE FEMP or ESPC expert (such as a Project Facilitator).
- Review results of audit and recommend changes.

Alternative Financing _ GSA Actions

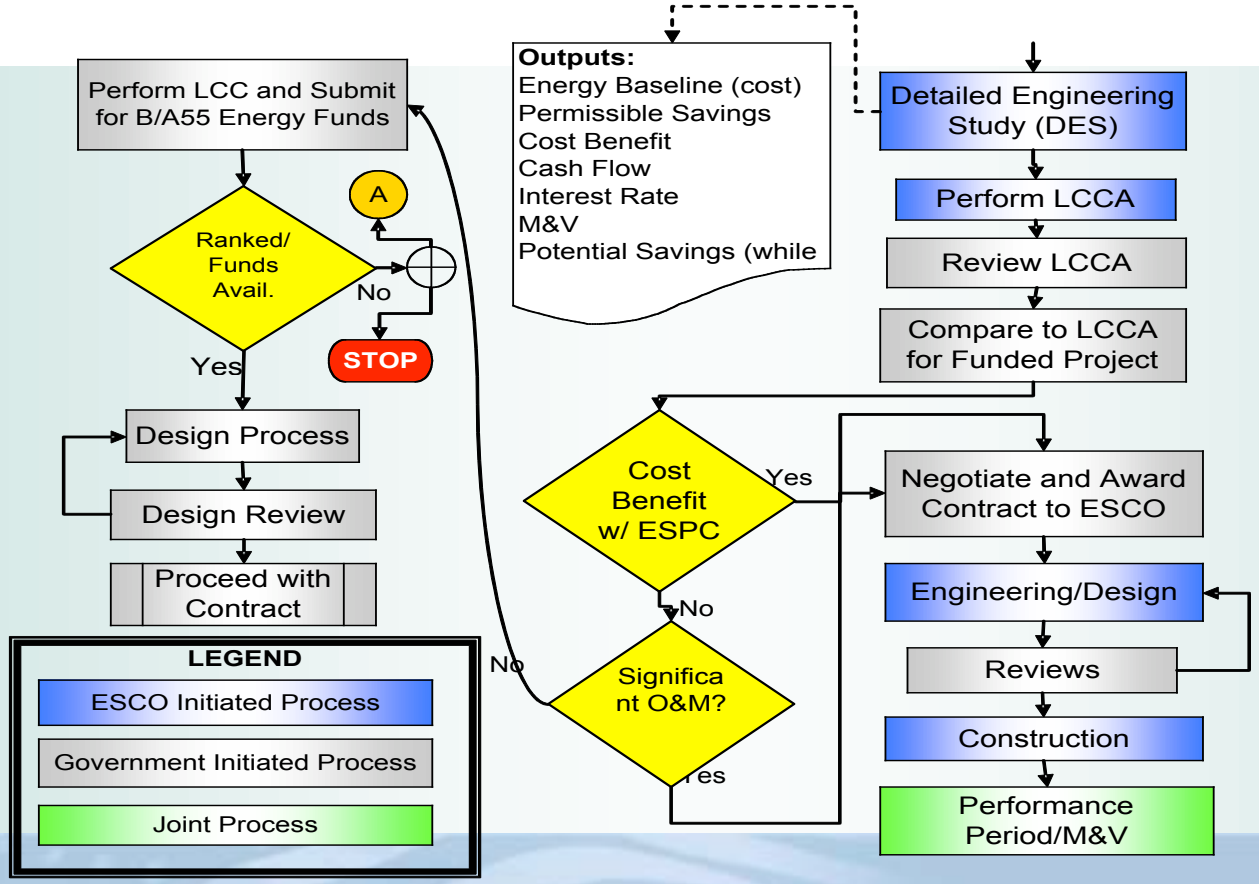
- Memo #1- Appropriate Use of ESPCs
  - Issued November 29, 2005
  - GSA established a process for determining if and when an ESPC constitutes a good business decision to secure energy conservation work
  - Business Case Analysis must be completed before entering into any new ESPC
  - Developed a Decision Flowchart to be followed

Initial Step by Step _ Flowchart

- Establish whether a viable energy survey/audit has been completed for facility
- If one exists _ project should proceed as a funded project
- If not _ region may request a free survey from an ESCO and proceed as an ESPC project
- Depending on findings the Region may decide to stop the project after review of the audit.
- If project seems like good value, Region may sign a NOI letter, committing the Government to reimburse the ESCO for costs incurred in the DES should govt not proceed.

Next Level _ Step by Step

- As part of DES, Region should request that ESCO prepare a LCCA in order to calculate present value of project plus related costs. Again, study period must not exceed 25 years plus 2 yrs for planning.
  (Typically hasn't been occurring in past ESPCs)
- Before proceeding with ESPC process, Region must prepare estimate of cost to accomplish work as a funded project and perform a LCCA for the funded project. For example, if an ESPC project is being considered, a LCCA for a fully funded project must be prepared, with appropriate time frames for the process and in-service date.
- The LCCA for direct funding should be compared to the LCCA for the ESPC case. The lower resulting present value should generally determine the method of contracting selected. Note in comparing LCCAs, the costs for savings "lost" prior to energy project in-service date should be accounted for.


Perform LCC and Submit for B/A55 Energy Funds
A
Ranked/ Funds Avail.
No
STOP
Yes
Design Process
Design Review
Proceed with Contract
LEGEND
ESCO Initiated Process
Government Initiated Process
Joint Process
Outputs:
Energy Baseline (cost)
Permissible Savings
Cost Benefit
Cash Flow
Interest Rate
M&V
Potential Savings (while
Cost Benefit w/ ESPC
Yes
No
Significa nt O&M?
No
Yes
Detailed Engineering Study (DES)
Perform LCCA
Review LCCA
Compare to LCCA for Funded Project
Negotiate and Award Contract to ESCO
Engineering/Design
Reviews
Construction
Performance Period/M&V

More ….

- In event that substantial cost savings are attributable to O&M improvements, and these savings are not otherwise attainable through the appropriated funding approach, a reasonable justification to continue the project as an ESPC can be used as basis to proceed. Note these savings must be real and documented.
- This framework cannot consider every possibility that exists; therefore Regions should document external factors that are applied in the decision process.

Alternative Financing _ GSA Actions

- Memo #2 _Appropriate Review of Documentation and Expertise Acquired
  - ESPC contract data required to be inputted into Integrated Project Database (internal GSA database) and should be periodically reviewed for information accuracy
    - _ Used for compilation of data and tracking of savings
    - _ Key part of best practices to be shared within the agency
  - GSA ESPC contracts must use DOE Project Facilitators
  - Designated Regional Energy Coordinators as Regional ESPC experts
  - Issued June 16, 2006

Alternative Financing _ GSA Actions

- GSA selected 3 SuperESPC contracts currently in repayment status
- Requested DOE review the annual M&V Reports for the 3 contracts
- Will review findings and make appropriate recommendations

GSA Discussions/ Issues

- How do we reach the next level of energy reduction?
  - Can we wrap in advanced metering into an ESPC?
  - Can Retro commissioning be accomplished through an ESPC?

GSA's Advance Metering Plan

- GSA's Plan is intended to serve as the General Services Administration's Agency Metering Plan as required by Section 103 of the Energy Policy Act of 2005 (42 USC 8253(e)(3)).

System Capabilities

- System provides individual users quick access to customized screens, delivering up-to-the-minute data consistent with their needs.
- System will utilize the existing wide area network (WAN) infrastructure to transmit data from field devices to the server(s).
- Data storage and warehousing will be handled by the National Capital Region's IT staff under an agreement with GSA's Energy Center of Expertise.

Communications Requirements

- ION EEM operates on historic data only, as opposed to real-time data.
- Data is typically time stamped in 15 minute intervals. The "front end" is provided by ION Enterprise. This system allows the presentation of real-time and historic data.
- A software module loads data from the ION Enterprise database into the ION EEM database for analysis in ION EEM.
- In order to get data into the system, meters will need to satisfy specific communications protocol and media.

Funding Strategy

- Field devices will be funded on a prioritized schedule; using funds approved for metering in GSA's annual budget based on the 2005 Advanced Metering Strategic Assessment Plan Initiative.
- GSA has received $6 million in FY07 as a result of this request and will continue to request additional funds each budget cycle until the plan is adequately funded.
- Priority funding for regional hardware purchases and connection to the agency wide software program will occur based four factors:
  - (1) total annual cost of electricity (most recent 12-month period);
  - (2) annual electricity use per GSF;
  - (3) annual electricity consumption;
  - (4) demand response program is available either from the grid operator or local utility.

Data Integration

- *Historic Data for ION Meters*
  - ION meters feature on-board logging. This means that data is stored in a circular memory block in the meter. New data replaces the oldest data, so that one always has the most recent data stored on the meter e.g. the last 30 days. The effect of this is that any temporary loss of communications will not mean a loss of data in the ION Enterprise and ION EEM systems. As long as the communications downtime is not longer than the depth setting of the data recorder, data will not be lost.
- *Historic Data for 3rd Party Meters*
  - Although 3rd party meters might have similar on-board logging capability, ION Enterprise and ION EEM do not support the reading of these historic data logs. Data from 3rd Party meters must be logged using a software module of ION Enterprise, using a protocol other than ION protocol e.g. Modbus RTU. This means that in order to log data, continuous communications is required.
- *Historic Data from other sources*
  - Historic data can be loaded into the ION EEM database from e-mail, .xml and flat file formats. This means that historic data can also be sourced from 3rd party databases, ftp sites etc. A software module receives and transforms the data and loads it into the ION EEM database.

Tactical Process for integrating new meters to the ION EEM system

- GSA Regional Energy Coordinators have been instructed to contact Schneider Electric with the following details of proposed meters they intend to purchase:
  - Manufacturer and model of the device
  - Choice of communications medium (Ethernet or serial RS485, etc)
  - If technically feasible, Schneider will provide a quote to perform the integration as follows:
  - Communication between the meters and ION Enterprise will be configured and tested.
  - ION Enterprise will be configured to read selected historic and/or real-time parameters.
  - If logging is required at the ION Enterprise level, it will be configured.
  - The source hierarchy in ION EEM will be updated to include the new sources (meters)
  - ION EEM will be configured to import data from ION Enterprise or from other source (flat file) as required.

What is ION EEM?

- Innovative web-based software that answers the energy information needs of organizations that want to make better energy decisions
- Designed to support real-time monitoring within a data warehousing architecture

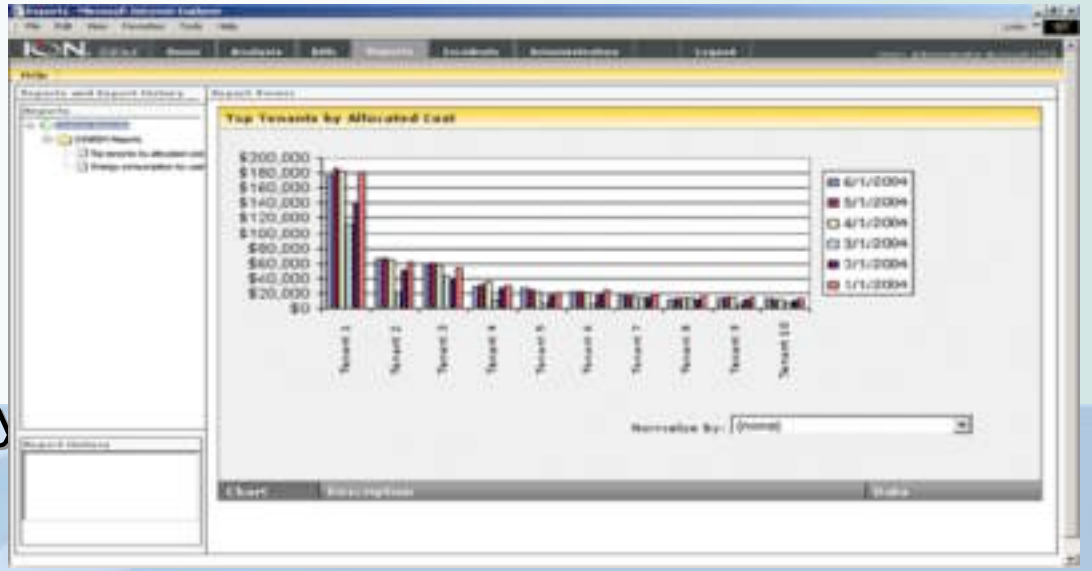
- Suitable for virtually any type of business: institutional, office and retail buildings, universities, industrial and research facilities, health centers, and utilities
- Offers a unique ability to provide a fully integrated look at all levels of your business

Key Benefits of ION EEM

- Translate real-time and historical data into actionable information
- Proactively reduce energy-related business risks
- Control energy costs
- Unite energy management and business strategies
- Gather, cleanses and integrate info from disparate systems
- Easily add capabilities as you need them

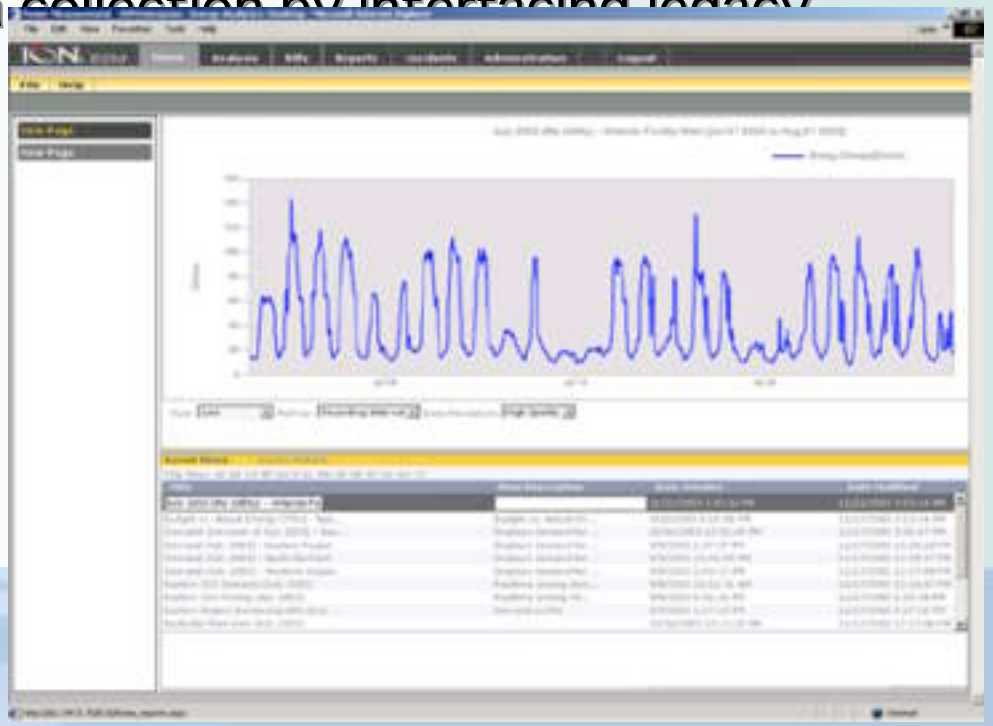
Application - Energy Cost Analysis

- Monitor and evaluate energy consumption and costs
- View data in whatever format best suits your needs
- Normalize energy usage data for variables such as weather and square footage
- Use easy drill-down analysis functions to present increasing levels of detail
- Process system data to prepare budgets for individual departments or processes, track budget projections with actuals, and use historical data to identify production, usage and cost trends

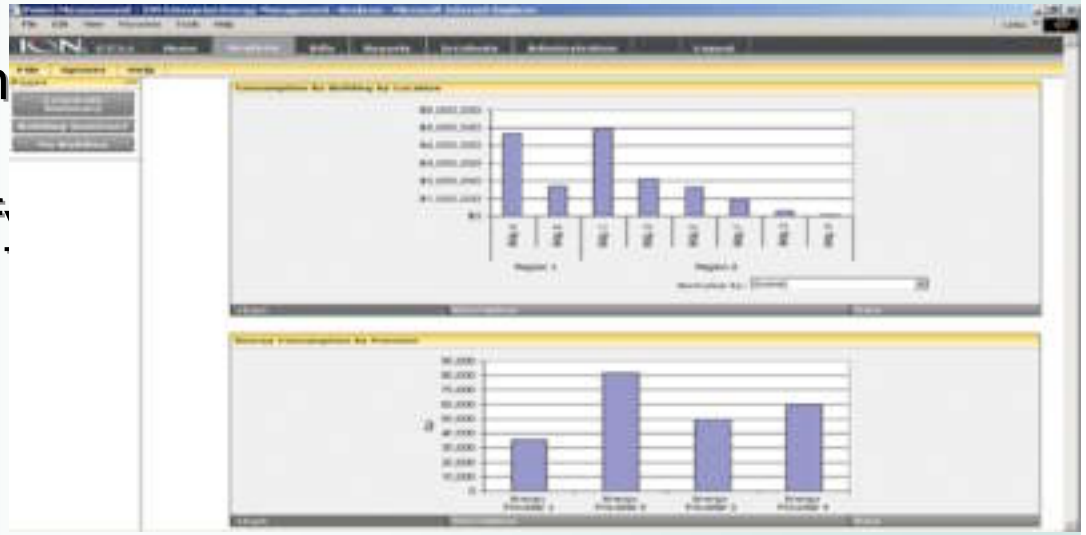


Application - Energy Cost Control

- Implement a comprehensive demand control scheme, with automatic load shedding, peak shaving, base loading and on-site generation
- Maximize ROI and simplify data collection by interfacing legacy systems with ION EEM
- Reduce business risks with information and analyses that can be used to produce cost and risk reduction strategies
- Create reports that can be distributed in paper, email or HTML format



Application - Benchmarking, Base-lining and Forecasting



- Benchmark facility condition
- Carry out comparisons between locations to identify best practices
- Create baselines to track conditions within a single facility
- Compare results over time to measure the effectiveness of retrofits, upgrades, etc.
- Use normalization routines to remove independent variables to ensure accuracy
- Model future results, then alter variables to gauge dependencies and see possible outcomes of different scenarios

Application - Real-time Monitoring

- Determine the condition of all your energy assets in real time
- Use instant data access to correlate ongoing activities with logged trends to help you better fulfill core needs
- Configure schedule- or event-driven alerts on any combination of trends, events or costs to ensure quick and efficient response to any condition

Regional Energy Targets

- For better accountability _ GSA has established a performance measure for energy reduction mandates.
- This measure was then broken down into Region specific targets that they are responsible for achieving in order for GSA to be successful in meeting the mandates.

Regional Energy Targets

- Progress reports generated mthly with presentations to upper management on progress quarterly.
  - Gives program great visibility
  - Real incentive for each Region to make sure they deliver on their reduction responsibility to ensure agencywide success
  - Hopeful that the challenging BTU/GSF targets that continue based on EPACT05 , will affect the energy performance of capital program.

Conclusion

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