NAVY Shore Geospatial Energy Module (NSG EM)

Supporting: Commander, Navy Installations Command (CNIC)
Sandrine Schultz, CEM HQ Energy Program Manager
Comprises of

- 11 Regions – 70 Installations – 95,000 Facilities
- Utility Systems for Electricity, Steam, Water, Gas
- Renewable Generation
Enhancing Capabilities

Efficient Platforms
Example: LCAC, Amphibious Ships

Efficient Power Generation & Use
Example: On-Board Vehicle Power, ECU

Alternative Power Sources
Example: GREENS (Solar-Powered Battery)

Renewable and Sustainability
- New Construction / Major Renovations LEED Silver or Equivalent
- Integrated Technology Strategy: Watch-Partner-Lead

Energy Efficiency
- Recapitalize Existing Infrastructure with More Energy Efficient Systems
- Annual Energy Audits – Building Level Assessments of Opportunities
- Energy Security

Navy Culture and Behavior
- Increased Transparency at Individual, Command, and Function Levels
- Technology Enabled (Advanced Meters; SmartGrid Pilot)
- Link to Operations

Technological solutions in development will enhance capability
NAVY Shore Energy Program

- **Mission:**
  - Energy Security & Independence
  - Meet Legal Compliance
  - Cut Costs

- **CNIC Shore Energy Tool Suite:**
  - We must understand:
    - Base’s energy profile
    - Tenant energy profile and behaviors
    - Investments
    - Impact on consumption and costs…and energy security

Perfecting Business Processes
In response to Navy Shore Energy objectives, CNIC developed a Navy Shore Energy Management Tool Suite to assist stakeholders in identifying, optimizing and tracking energy opportunities and investments.

- **NSGEM-Map**: Map and visualize Navy-wide energy data.
- **Goals-Benchmark**: Identify energy efficiency opportunities.
- **eROI-Invest**: Develop opportunities into projects and evaluate viability.
- **SEIP-Forecast**: Verify current energy goal attainment and forecast investment.
Navy Shore Geospatial Energy Module (NSGEM) is an interactive web map that uses information from authoritative data systems to visualize monthly energy use **Navy-wide (aka: standardization)**.

Module Highlights:

- Utility bills and tenant energy consumption reports that increase accountability and influence behavior change.
- Utilizes Energy Benchmarking, the process of accounting and comparing buildings’ current energy performance with its energy baseline.
- Data Assessment Score (DAS) that indicate the completeness of data within authoritative sources and encourage user updates.
- Regional Energy Map Books (REMBs) that provide a report on energy consumption for the Region and Installation.
NAVIN GIS

Energy App
Dashboards: Actionable Information

Energy Consumption Reduction (%)

Year savings take affect (1 year after project is operational)

Baseline
Target

NSGEM Site Degree Days

CIRCUITS Installation/Site Consumption by Tenant

Data Assessment Score

Overall Score: 89
INFADS (% Facilities in INFADS): 97.8%
CIRCUITS (% Facilities in CIRCUITS UA): 80.2%
CIP (% Facilities with spatial data): 89.8%
Challenges

- **End Users:**
  - New Technology
  - New Capabilities
  - Interoperability of Enterprise Data
  - Not GIS users

- **Data:**
  - Inaccurate / Incomplete
  - Not Reported

- **How do we improve our data:**
  - Tell the story
  - Data Assessment Score
  - Data Improvement / Completeness Layer

- **How do we get non-GIS users to use GIS:**
  - Education and expertise
  - Show familiar information
  - Promote capabilities
  - Leverage what the user wants and needs
NSGEM Levels

NAVY AUTHORITATIVE DATA BECOMES ACTIONABLE INFORMATION TO APPLY TOWARD MEETING ENERGY GOALS

Stakeholders

NAVY LEVEL
- Headquarters
- Energy
- Managers
- Utility Managers
- Facility
- Managers

REGION LEVEL
- Regional Energy Commanders
- Regional Energy Program Managers

INSTALLATION LEVEL
- Installation Commanders
- Installation Energy Manager

FACILITY LEVEL
- Building Energy Managers
- Facility Managers
- Utility Managers
Navy & Region Lens
Installation Lens
Tenant Specific
Data Assessment Score

Data Validation and Verification: Increase Data Credibility and Identify Potential Savings
Gap analysis

Data Validation and Verification: Increase Data Credibility and Identify Potential Savings
Simplify data validation and correction
Description of Dashboard

1. Date Picker
2. Breadcrumb
3. Add/Remove Charts
4. Reporting
5. Legend
6. Chart Container
Reporting
Reporting for the Tenant

INFACS Manpower S&O Report
COMMANDER, NAVY INSTALLATIONS

Cumulative Energy Consumption

For the February 2015 billing period, your 18 facilities consumed 11,311 MBTU over a total of 386,1 MBT.
This cost you $386,551.99.

This is an 8.03% decrease from the same billing period last year.

Performance Forecast:
Annualized MBTU Usage

Compared to Other Tenants at NAVSUPPACT BETHESDA MD

Vs. Region WA

Vs. NAVY Enterprise
Way-Ahead

- Renewable Energy Goals (<10MW)
- Assist Renewable Energy Program Office
- Utility System Mapping
- Meter to Facility Relationship Network
- Live Data (the most challenging)
Conclusion

- Geospatial capabilities are changing the way that we do business:
  - Collaboration – Innovation – Communication – Performance

- NSGEM **standardizes processes** and provides actionable information that allows us to integrate and amplify the knowledge of our Energy program across the Navy:
  - Accountable – Quality – Excellence in Execution – Transparency
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