NAVY Shore Geospatial Energy Module (NSG EM)

Supporting: Commander, Navy Installations Command (CNIC)
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NAVY Shore Enterprise

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
Energy Project Tool Suite

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.
Dashboards: Actionable Information

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

[Graph showing energy consumption reduction from baseline to target from 2008 to 2020]
Challenges

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

Data:
- Inaccurate / Incomplete
- Not Reported

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

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

Overall Score

Region Reporting Facility Count

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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
Contact Info

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