Energy Management
Peterson AFB, Colorado

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Overview:

- Previous process
- Improved Process
- Asset Accountability
- Business Table Development
- Map Products
The Air Force Space Command Energy Program team developed a focused energy strategy that saved 1.48 billion Btu in FY 2013. The program’s energy roadmap focuses the entire command on a number of education and outreach “pulse points” for its 85 bases, geographically separated units, and other locations worldwide. The plan includes the following initiatives: implementing an energy strategic communication plan, reducing energy use at the top two energy-intensive geographically separated units, deploying high-efficiency exterior lighting command-wide, examining energy-intensive mission activities, reducing fleet fuel consumption, developing and deploying energy management systems at each installation, emphasizing energy management in facility design, and making the program headquarters building a model for energy management. As of FY 2013, the comprehensive energy and water conservation efforts driven by the Air Force Space Command Energy team, coupled with the efforts of each installation in the Command, led to a 29% reduction in facility energy intensity and a 46% reduction in water intensity from their respective baseline years.
Previous Process:

Consisted of:

- Manually gathering readings from field onto a sheet of paper
- Inputting reading into Excel Spreadsheet
- Sending spreadsheet to Energy Manager
- Energy Manager then placed data into his Reimbursable Billing Spreadsheet
Initial Process Improvement:

- Utility shop collected meter assets with GPS and collects meter reads/info monthly. (Date, meter type, current reading)
- Data is electronically transferred to GIS System
- Unique Energy Business Table is created and exported for Energy Manager’s use
- Provides spatial visibility of Energy data
  
  For example:
  
  - Energy usage per building (monthly/annually)
  - Comparison of energy use month to month
  - Reimbursable amounts billed per building
  - Provide web enabled energy program accessibility
GIS Asset Accountability:

Geo-referenced floor plan

Spatial discrepancy

Additional Assets

Spatial discrepancy
GIS Asset Accountability:

- All meters will be assigned unique IDPK numbers
- When meters need maintenance or replacing, map will show exact location of meter.
- Meter types can also be easily distinguished
- Population of additional meter asset attributes through Energy Management & Control Systems
Comparison:

Previous Process
- Only gathers meter usage information
- Requires data input multiple times
- No spatial asset accountability

Improved Process
- Gathers spatial data and meter usage.
- Only requires data input one time
- Allows for asset accountability
- Able to use meter locations to verify/match-up where utility lines enter/exit buildings
- Allows for Map Product production
Business Table:

Reimbursable Billing Spreadsheet

GIS Attribute Table
**Map products:**

<table>
<thead>
<tr>
<th>BILLING</th>
<th>CODE</th>
<th>USER</th>
<th>BILL_TYPE</th>
<th>G-AREA</th>
<th>S-AREA</th>
<th>G-RENT</th>
<th>S-RENT</th>
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<tbody>
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**Billable Units**
Map products:

### Rate Types

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<th>CUSTOMER</th>
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<th>ULC</th>
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<th>TO</th>
<th>NATURAL GA</th>
<th>FF</th>
<th>WATER</th>
<th>TO</th>
<th>SEWER</th>
<th>FF</th>
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### Total Energy Costs

- Rate Types
- Total Energy Costs
Map products:

Peterson Air Force Base
Electric Energy Usage

Monthly Comparison
- Previous Reading
- Current Reading

Current Usage Per Building
- Low to High

Legend
- Buildings
- Roads
- Installation Boundary