

USAF Model Energy Base Initiative

F. Paul Carnley, PE
Capital Program Manager
HQ AFCESA



Phoenix, AZ

August 3-6, 2008

Program Overview



- Vision
- AFFEC Role
- Barksdale AFB, LA
- McGuire AFB, NJ
- US Air Force Academy
- Future Initiatives



GovEnergy
www.govenergy.gov

MEBI Vision



- Test drive the strategic approach
- Develop scalable energy solutions
- Energize cultural change at base level
- Promote successes across AF installations worldwide

AF Strategic Plan



2015 GOALS

- Reduce Cost by 20% by 2020
- Reduce Energy Intensity by 3% Per Annum
- Reduce Water Use by 2% Per Annum
- Increase Renewables at Annual Targets (3%, 5%, 7.5%, 25%)
- Reduce Ground Fuel Use by 2% Per Annum
- Increase Alternative Fuel Use by 10% Per Annum

Governance

Improve Current Infrastructure

- Envelope
- HVAC / controls
- Plumbing
- Water Systems
- Central Plants
- Interior Lighting
- Distribution
- RWP
- Right size fleet
- Low speed vehicles

Improve Future Infrastructure

- Plan / Program
- Develop better designs
- Implement better designs
- Commission
- Increase use of alternative-fuel, hybrid tech vehicles

Expand Renewables

- Develop
 - Solar
 - Wind
 - Geothermal
 - Biomass
- Purchase Renewable Energy Credits
- Explore hydrogen tech

Manage Costs

- Plan
- Negotiate/ Litigate
- Educate
- Operate & Maintain

- Plan**
- 5 Yr Project Plan
- Program**
- Effective Resourcing
- Budget**
- Balanced Investment

- Decision Mgt**
- Effective Data
 - Performance Measurement

- Awareness**
- Strategic Comm
 - Awards/Incentives
 - Education and Trng

Asset Management

Optimize assets >>> performance, risk and cost >>> enterprise-wide

Culture Change

See the waste >>> Acknowledge the waste >>> Eliminate the waste

AFFEC Role



- Air Force Facility Energy Center (AFFEC)
- Provide Guidance for MEB's
- Assist MEB's with project identification and programming
- Advocate for MEB specific funding
- Conduct regular visits with MAJCOM's for focused effort

Energy Conservation Opportunities



- HVAC Efficiency Improvements
- Decentralize Central Heat Plants
- Green Roof
- EMCS/Controls Improvements
- Electrical Efficiency Improvements
- Water Conservation
- Whole Building Energy Improvements
- Ground Source Heat Pumps
- Demolition/Consolidation
- Recommissioning
- Paint Hangar Recirculation
- Infrared Heating – Hangars and Warehouses
- Renewable Energy

Barksdale AFB, LA



- Working with Energy Managers to define programs
- Accomplishments –
 - Five projects totaling \$2082K; EMCS/Lighting Upgrades
 - Received \$4K for CFL replacement of incandescents
 - Received \$200K for on-site REM
 - Executed \$176K for advanced meter installation
 - Received \$100K for Energy Project Designs
- Planned Initiatives –
 - 21 projects totaling ~\$7M; HVAC/EMCS Systems Upgrades/Gas Meters/Lighting
 - Projects to compliment Strategic Pillars/MEB vision
 - Partnering under Energy POM for GSHP Projects

McGuire AFB, NJ



- Working with Energy Managers to define programs
- Accomplishments –
 - Executed \$4K for CFL replacement of incandescents FY07
 - Executed \$176K for advanced meter installation
 - Executed \$655K ECIP for EMCS
 - Installed \$50K building envelope improvements
- Planned Initiatives –
 - Projects to compliment Strategic Pillars/MEB vision
 - ESPC under development; Decentralization, EMCS, Lighting Improvements & Chiller Plant Upgrades
 - HVAC/EMCS, Lighting, GSHP's, Renewables - \$6M
 - Partnering under Energy POM for GSHP Projects

Air Force Academy



- Academy recently named as new MEB
- Chosen for Educational & Cultural Linkage
- Academy Develops AF Future Leaders
- Institutionalizes Cultural Change
- Goal – First Net Zero Installation!

Future Initiatives



- Program and Project Development is Critical
- Funding is Paramount in Order to Execute
- Advertise Successes AF Wide
- Scale Successes for Larger and Smaller Bases



For More Information

- Would you like to know more about this session?
- Gerald Doddington, PE
- HQ AFCESA/CEK
- 139 Barnes Drive, Tyndall AFB, FL 32403
- Gerald.doddington@tyndall.af.mil

Don't forget to fill out and drop off your session evaluations!