Navy Shore Energy Initiatives In Hawaii

Hawaii Energy Policy Forum
20 May 2011

NAVFAC HI Energy Office

2.5 MW Ford Island PV Runway concept
# ALIGNMENT OF NAVY & STATE ENERGY GOALS

- Energy Security  
  "Energy is Security!" – CNO, ADM Roughhead
- Independence from foreign oil
- Clean Energy Future (EE & RE)

## NAVY DIRECTIVES:

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<tbody>
<tr>
<td>Energy Reduction</td>
<td>30% by 2015 (18% in 2011)</td>
<td>30% by 2030</td>
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<td>50% by 2020</td>
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<tr>
<td>Renewable Energy</td>
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<td>40% by 2030</td>
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<td>50% by 2020</td>
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<td>Water Reduction</td>
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<td>26% by 2020</td>
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<td>Green House Gas Reduction (Scope 1 &amp; 2)</td>
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<td>28% by 2020</td>
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<td>Reduce Vehicle Petrol Use</td>
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<td>50% by 2015</td>
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## NAVY STRATEGIC ENERGY ALLIANCES IN HAWAII:

1. PACOM Energy Partnership Strategic Council (PEPSC)
2. UTILITIES – DOD HECO EXCOM, KIUC, BWS, - Grid Impact & Interconnection
3. LOCAL GOVT – State, County, City (GHG, Biofuels, Alt Transp, LFG, Wind, OTEC)
4. INDUSTRY - Current 40+ projects/contracts w/ Value of $60M+;
5. USDA, DOE, DLA…
FIRST STEP – ENERGY CONSERVATION
‘The best renewable energy is the energy we don’t waste.’

1 - Energy Awareness – Create a Conservation Culture
  • Top-level Leadership - Monthly Energy Conservation Board + Accountability!
  • Good Data & Monitoring ($11M Advanced Metering Initiative)
  • Pervasive Training – 4200 Audits, 1000 Building Monitor, news articles, training

2 – Energy Efficiency – Leverage Technology
  • Current 40+ projects valued at $60M+
  • Innovative Financing – EUL, ESPC, UESC, PPA, Local, Other

3 - Operational Efficiency – Maintain Mission Readiness

Meeting Conservation Goal

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<tr>
<th>MBTU/KSF</th>
<th>FY03 Baseline</th>
<th>Goal</th>
<th>Projected MBTU/KSF</th>
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ENERGY SAVING
ALTERNATIVE ENERGY TRANSPORTATION PLAN
NAVY GOAL: REDUCE PETROLEUM 50% by 2015

1. CONVERTED to 800 E-85 Vehicles - Completed
2. BUILD two E-85 Fuel Stations (Planned in one year) ; B-20 Station by FY12
3. CONVERT TO ELECTRIC VEHICLES (130 NEV Current ; 400 more by FY15
4. OTHER ALT. ENERGY VEHICLES (Hydrogen, Hybrids, Bicycles...)
5. SUPPORT BIO-FUEL INITIATIVES (USDA-Navy MOU; PACOM GIFTPAC, ONR, DARPA

Hickam Hydrogen refueling station
➢ POWERED BY RENEWABLE ENERGY (146KW PV & planned 50KW Wind turbines)
➢ UNIQUE PARTNERSHIPS:
   1. JOINT BASE PEARL HARBOR-HICKAM HOST
   2. AIR FORCE FUNDING- Air Force Advanced Power Technology Office (APTO)
   3. HAWAII STATE MANAGEMENT - Hawaii Center for Advanced Transportation Technologies (HCATT)
   4. ARMY SUPPORT - Tank, Automotive Research Development and Engineering Center (TARDEC)

Supporting the Fleet, Fighter, and Family in Hawaii
RENEWABLE ENERGY GOAL – 50% BY 2020

2.5 MW Navy PV Rooftop Systems (Largest PV Array in Hawaii)

5 MW OTEC Pilot Plant Study

50 MW Bio-fuel Power Plant Study

Cyber-Secure Smart Grid

Multi-MW FL PV Runway

5 MW OTEC Pilot Plant Study

Current Wave Energy Buoy
FORD ISLAND RUNWAY PV INITIATIVE
(Note – Under procurement)

INNOVATIVE:
- Revitalizes Historic Runway with ‘Green’ Energy Mission
- First ever JOINT Power Purchase – All Services engaged – Economy $cale
- Key Partners: All Services, Industry, HECO, HI Historic Partners
- Protected Appearance
QUESTIONS?