Ford Island Photovoltaic (PV) System

Project Overview, Bldg. 54

Naval Facilities Engineering Command, Hawaii (NAVFAC Hawaii)

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Background/History

- ORIGINAL CONCEPT WAS DEVELOPMENT OF A RENEWABLE ENERGY PARK BY THE DOD/HECO PARTNERSHIP.
- STARTED AS 30-YR LEASE OF 34.5 ACRES IN WEST LOCH ADJACENT TO AN EXPLOSIVE ARC ZONE.
- LEASE WAS TO BE TO HECO AND HNEI IN EXCHANGE FOR FUEL COST CREDIT, POWER TO GO TO HECO GRID.
- ORIGINAL AGREEMENT CALLED FOR CONSIDERABLE SITE IMPROVEMENT (SECURITY FENCING, ROADS, GRADING, ETC).
- ORIGINAL PROJECT FOR ~ 100KW OF VARIOUS PV TECHNOLOGIES.
- FUNDING ($2.5M) AS PART OF CONGRESSIONAL PLUS UP SENT TO OFFICE OF NAVAL RESEARCH (ONR).

Project Redirection

- COMPLEXITYOF NEGOTIATION OF LAND LEASE ISSUES CAUSED RELOCATION TO FORD ISLAND BLDG. 54.
- COMMANDER NAVY REGION HAWAII ENDORSED NEW SITE IN EARLY 2004.
- SCOPE REVISED TO ~200KW, POWER TO GO TO NAVFAC HAWAII GRID ON FORD ISLAND.
- ONR AND NFESC GIVEN SPLIT FUNDS TO EXECUTE PROJECT.

Issues

- TYPE OF FUNDS WERE RDT&E WITH SPECIAL OBLIGATION RULES ATTACHED.
- BEFORE ONR COULD EXECUTE THE CONTRACT, FUNDS WERE FROZEN FOR COST OF WAR (CoW).
- ONR BELIEVED PROJECT EXECUTION THROUGH ONR WAS UNLIKELY.
- NAVFAC HAWAII ENERGY TEAM WAS ASKED IF THEY COULD AWARD A CONTRACT BY 30 SEP 04.
- CONTRACT AWARDED VIA FEDSOURCE 30 SEP 04.

System Purchased

- 308 KW WITH EXPECTED OUTPUT OF 500 MWH PER YEAR.
- COST $2,120,609.68:
  - $1,970,609 PV SYSTEM INCL PROGRAM MANAGEMENT
  - $ 150,000 RDT&E SUPPORT (HNEI)
- ANTICIPATED ENERGY COST SAVINGS $60K/YEAR @ $120/MWH.
- DEMAND SAVINGS 230 KW/MONTH.
- NO ENERGY STORAGE SYSTEMS.
- 1545 PANELS; 31,145 SF OF PV; SHARP 200 MODEL; 200W EACH PANEL.

Benefits To The Navy

- RENEWABLE ENERGY.
- REDUCES HARMFUL ENVIRONMENTAL POLLUTANTS (4,600 tons of CO_2; 16,000 lbs of NOx; 22,000 lbs of SOx; equivalent to planting 1300 acres of trees 4.5x size of the Region or not driving 11.5M miles).
- INCREASES INDEPENDENCE FROM OIL.
- INCREASES OUR POWER SURETY LEVEL.
- MOVES THE NAVY TOWARDS EPACT2005 ENERGY GOALS.

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PV SYSTEM DEDICATED, 13 OCT 05.