

Charting a Course to Energy Independence

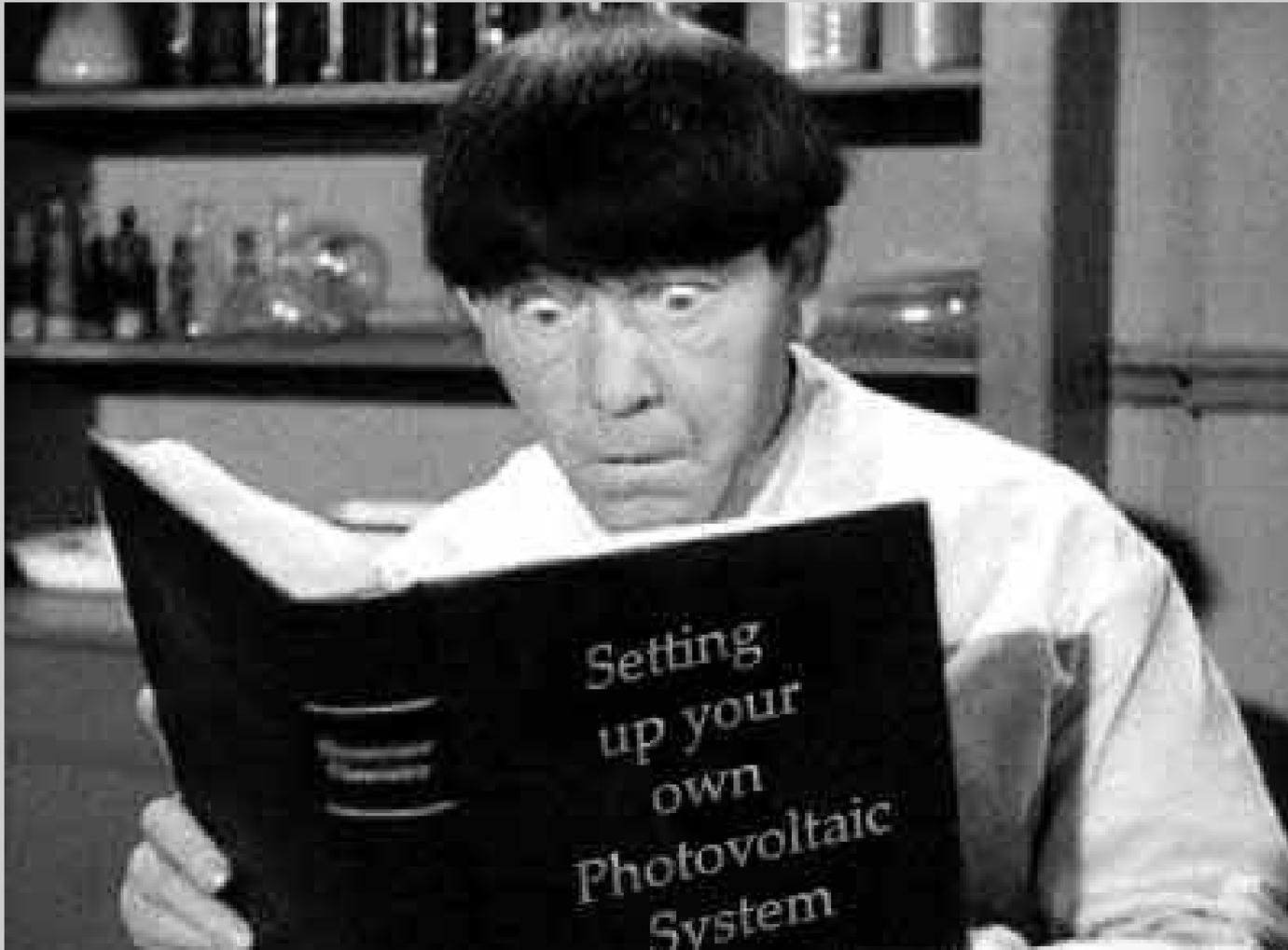
Providence, RI
August 9-12, 2009

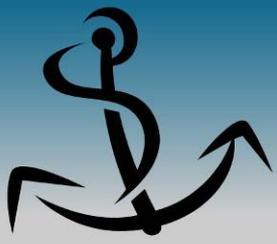
Renewable Energy Headlines
Department of Defense





The Old Approach to Renewable Energy





Renewable Energy Triangle

ENERGY SECURITY

•Ensuring operational requirements are met 24/7

Wind Power



Landfill Gas



Waste to Energy Plant



•Reduce reliance on foreign oil

ECONOMICS

•Energy must not exceed current cost

Geothermal Plant



ENVIRONMENTAL SUSTAINABILITY

•Energy must be obtained sustainably

OTEC Plant



Rooftop Photovoltaics



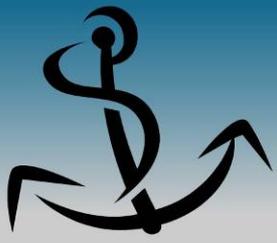


Air Force

Massachusetts Military Reservation

- The AFCEE IRP cleanup program uses eight pump and treat systems to remediate 15-16 million gallons of contaminated water per day
- 1.5 MW wind turbine
- Payback in 6-8 yrs
- Another 17 turbines possible at MMR – State/MMR project





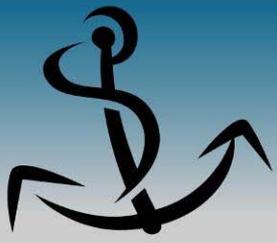
Army Initiatives

- Installing two 1.5 MW wind turbines at Kwajalein in FY 2011
- Installing PV and wind turbines at Fort Irwin via EUL
- Geothermal Projects
 - Hawthorne Army Depot, NV
 - Fort Bliss, TX
 - Sierra Army Depot, NV

Geothermal Resources



- Temperature Above 194°F
- Temperature Below 194°F
- Geopressured Resources



Geothermal



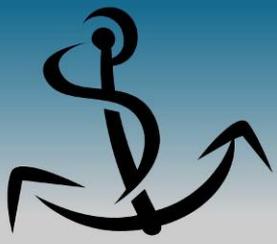
NAVY I Power Plant

Drilling Rig

COSO Facilities

- Four power plants – 2 Navy & 2 BLM
- Nine turbine-generator sets
- 270 MW Max net output
- Two transmission lines
- 166 wells & >200,000 lineal feet of pipe

- World Class Geothermal Resource
- First power from Coso Field in 1987
- Enough power to supply electricity to 180,000 homes
- DOD Lead Agency for Technology Transfer and development
- Awarded NAS Fallon NV
 - Plant Sized at 30 MW
- Assisting Army at Hawthorne, NV
- Exploring NAF El Centro, MCAGCC
Twenty-Nine Palms, MCAS Yuma

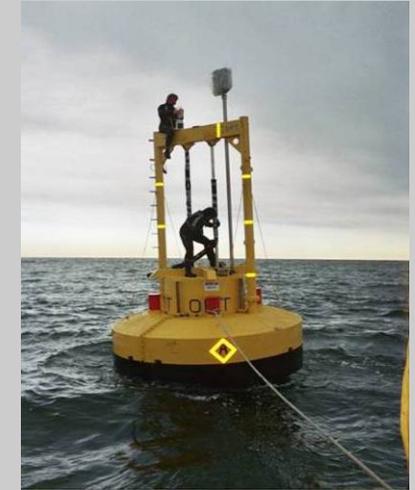


Ocean Energy

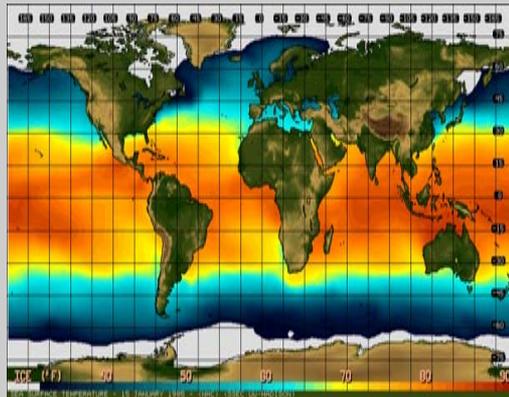
Conduct site assessment, prepare design, obtain permitting for kinetic hydropower installation in Puget Sound area



Develop and test 3rd generation wave energy MCB Hawaii test site



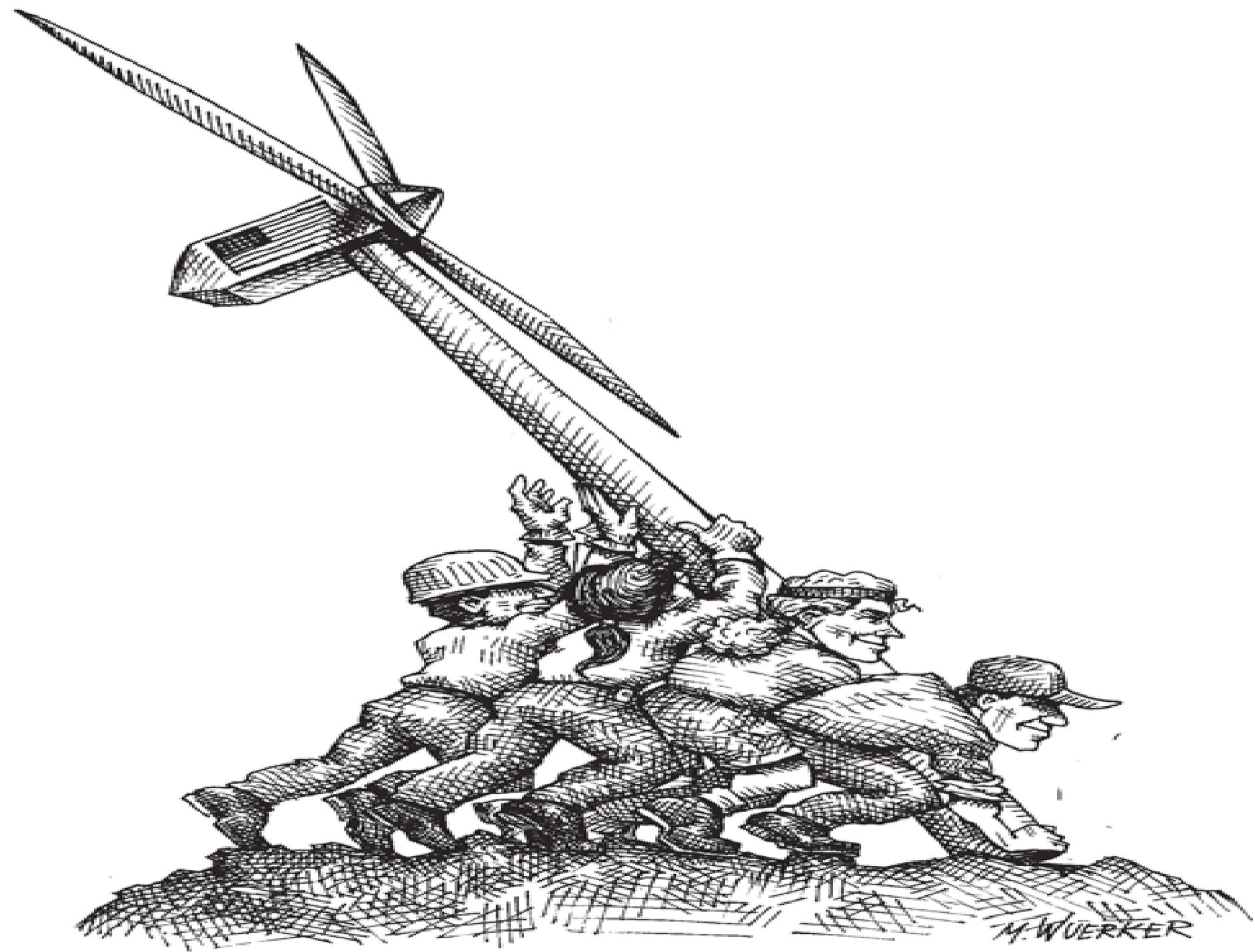
Ocean Thermal Energy Conversion (OTEC) is ideal for island locations. Can get power and water.



Evaluate future feasibility of H2 and/or synthetic fuel production afloat









Questions ???



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