

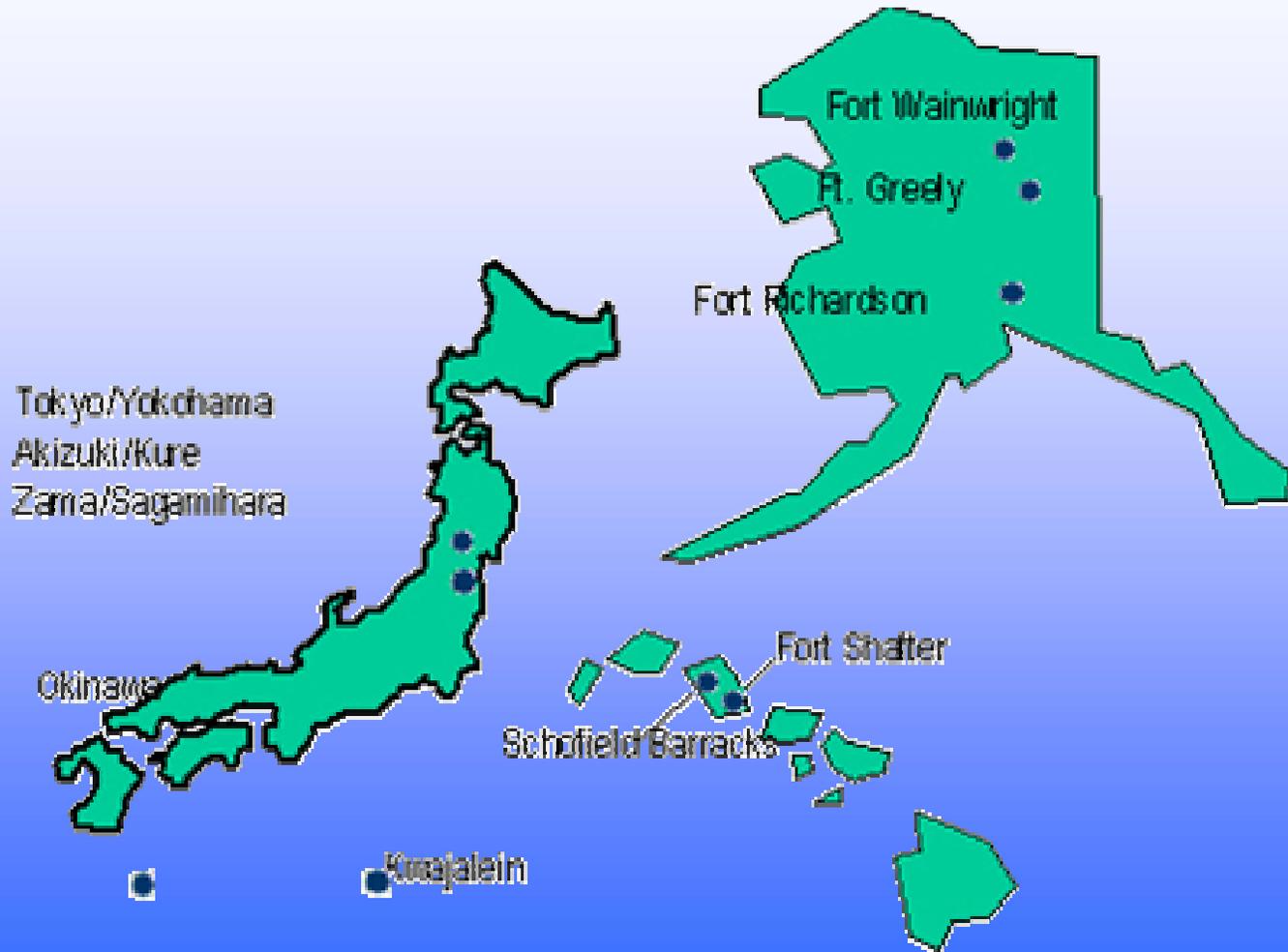


U.S. ARMY

Pacific Region (PARO)



PARO Area of Responsibility





Energy Program



- ❖ **GOAL:** Successful reduction in energy consumption
- ❖ **STRATEGY:** Reduce energy consumption without jeopardizing mission capabilities or reducing quality of life



Recent Accomplishments



Solar Water Heating





Recent Accomplishments



Solar Water Heating

- ❖ Installed 650 solar water heating systems
- ❖ Nation's largest residential solar water heating project
- ❖ Army saved approximately \$250K annually in electricity costs
- ❖ Reduced the Utility Company's electric system by half megawatt



Recent Accomplishments



Central Cooling for 8 Barracks

- ❖ Partnership with local Utility Co. in a Basic Ordering Agreement (BOA)
- ❖ Construction of 600 ton centrifugal chiller, cooling tower, condenser pump, chill water pump and piping replacement
- ❖ Saved 140,000 Btu with a DSM rebate from local Utility Co \$120K annually
- ❖ Extremely quiet



Recent Accomplishments



Solar Outdoor Lighting

- ❖ Installed 92 Solar Outdoor Lighting units (Schofield and Ft Shafter)
- ❖ Saved a total of 109 Kw electricity per year
- ❖ Avoidance of pollution effects from fossil fuel (200 barrels of crude oil or 53 tons of coal per year)





Recent Accomplishments



Cogeneration

- ❖ Also known as “combined heat and power” – is the generation of both electrical and thermal power from the same energy source.
- ❖ Convert fuel (natural gas, diesel, etc.) into electricity and hot water
- ❖ By harnessing the excess heat, cogeneration can supply not only electricity, but also thermal energy for applications such as domestic hot water, steam, heating and air conditioning.



Recent Accomplishments



Cogeneration

- ❖ ESPC Project - Multi-story barracks, Ft Shafter
- ❖ Provide power, cooling and water heating.
- ❖ 200kW cogeneration units, 55 nominal tons of absorption cooling, 30 tons of electric chilling, and 500,000 BTU of domestic water heating.





Recent Accomplishments



Cogeneration

- ❖ Total Energy Saved: Approximately 3,200 MMbtu annually.
- ❖ Total Cost Saved: Approximately \$22,000 annually.
- ❖ Government avoided all capital costs, including \$91,000 investment of 80-ton chilled water plant and \$24,000 for boilers and engineering.
- ❖ Avoided maintenance cost per year of approximately \$5,000 per year.
- ❖ The plant is approximately 89% efficient, verses and average 30% utility efficiency



Challenges



- ❖ Inclement weather and quality of life result in high energy usage
- ❖ Geographic areas with increasing fuel costs
- ❖ Meeting strict State Historical Preservation requirements
- ❖ Funding



Energy Program



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