

Energy Planning in the Pacific Territories



IGIA Meeting

Scott Haase

March 1, 2011

Background

- Initial energy assessment report in 2006
 - Recommended that the insular areas develop comprehensive plans to use renewable resources
- OIA, in partnership with the Department of Energy, implementing two initiatives
 - Energy Development in Island Nations (EDIN) pilot project in the U.S. Virgin Islands
 - A partnership with NREL in the Pacific for energy options analysis and strategic plan support



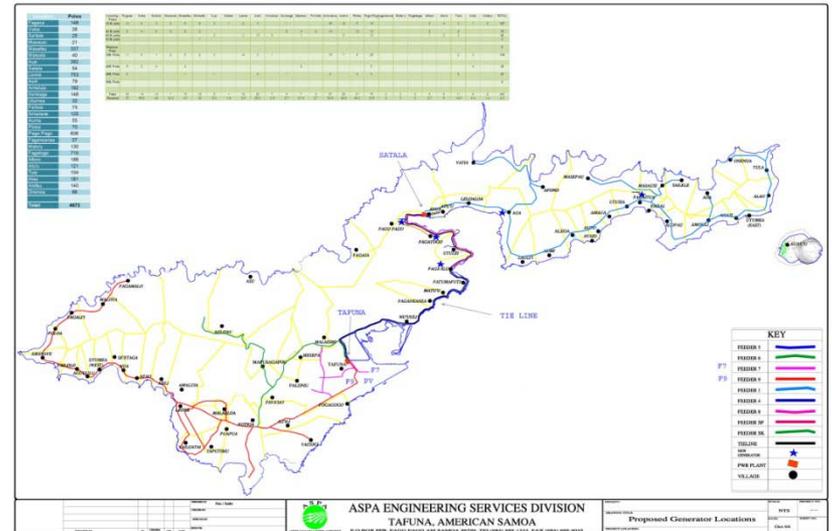
2010 Activities

- Meeting at NREL for Pacific Territories (March 2010)
 - Governors, utility leaders, university/college presidents, other key leaders meet with DOE, DoD, DOI and NREL experts
- Interagency agreement with DOE/NREL (July 2010)
- Executive Orders issued by each territorial governor establishing Energy Steering Committees (Aug 2010)
 - Committees are meeting monthly, developing baselines, forming subcommittees, coordinating programs
- NREL technical assessment teams visited each territory (Fall 2010)



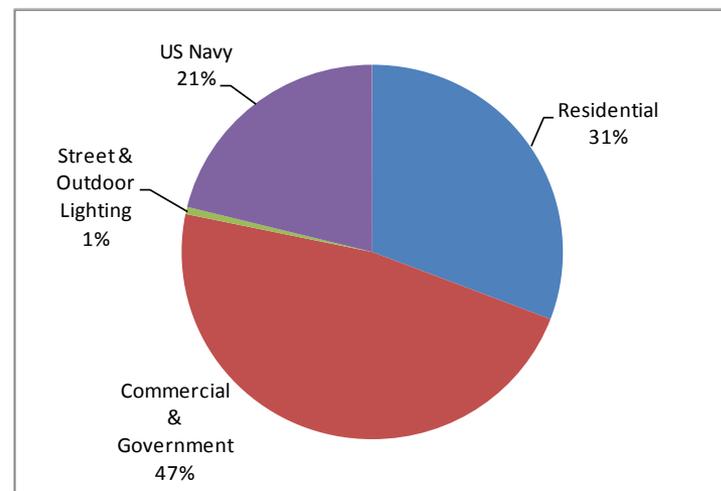
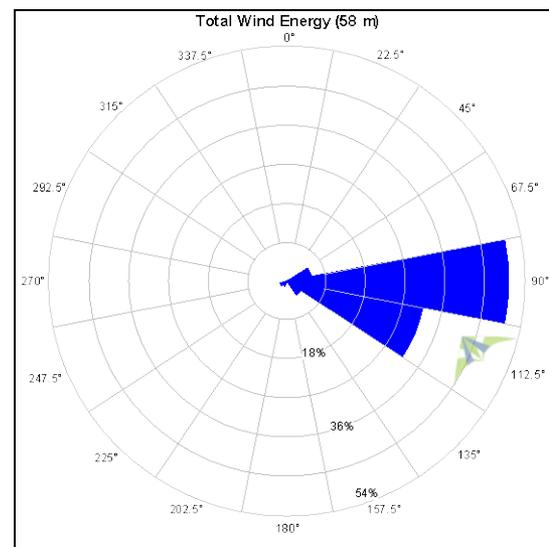
Technical Assessment Trips

- 4-5 person teams with interdisciplinary expertise
 - Wind, solar, biomass, biofuels, waste to energy, geothermal
 - Energy efficiency and building technologies
 - Utility operations, transmission and distribution systems
 - Renewable technology integration into diesel power systems
 - Financing and public policy
- Several staff have been to the territories multiple times



Assessment Reports

- Provides summary of best options for further development, establishes baselines, next steps
- Guam report is in draft, undergoing review
 - Will be presented to Energy Steering Committee March 15, 2011
 - Finalized in early to mid April
- Reports for American Samoa and CNMI are being developed now



Draft Strategic Plans

- After Assessment Reports, NREL will work to develop Draft Strategic Plan for each territory
- Provided to energy steering committees for prioritizing implementation plans and next steps
- Committees must issue the Final Plan
- Will be a living document
- Additional funding and support from DOI, DOE and others is TBD



Sample Analysis – Guam Waste to Energy Options

Total Waste (tons/year)	120,000
Estimated non combustibles (%)	15%
Combustible waste (tons/year)	102,000
Capacity Factor	85%
Tons/operating day	329
Net power - low efficiency (MW)	7.0
Net power - high efficiency (MW)	10.5
Capital Cost	\$120 Million
Estimated Cost of Energy	20 cents/kWh
Tip fee needed	\$0/ton



- WTE offers 24x7 source of local power
- Institutional challenges in Guam include present legislation prohibiting waste to energy plants to be developed
- New landfill requires tip fees to pay bonds
- Equivalent energy to 17 MW of wind or 27 MW of solar

Contact

Scott Haase

Senior Engineer, NREL

On detail to U.S. Department of Interior, Office of the
Secretary

202-208-5865 (DC)

303-275-3057 (Colorado)

scott_haase@ios.doi.gov

scott.haase@nrel.gov