

Scope and Method of Renewable Energy Assessment Outcomes and Deliverables

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The Services have formed a Renewable Energy Working Group under the lead of the Air Force and including membership from the Navy, Army, Marines, and the Department of Energy's Pacific Northwest National Laboratory, National Renewable Energy Laboratory, Sandia National Laboratories, and the Idaho National Engineering and Environmental Laboratory. This Working Group will perform the study as required by the Congress. Some of the outcomes and deliverables will include:

1. **Analysis of On-Base Potential** – The Services will conduct an initial technical resource and preliminary financial evaluation of bases with the greatest potential for renewable energy development, including assessing whether the potential has credibility with industry, and whether specific proposals are acceptable to the installations consistent with their mission.
 - The Air Force will lead an assessment of potential on-base wind resource development. The Navy will lead an assessment of potential on-base solar and geothermal resource development.
 - Wind and solar will include site-specific assessments, while geothermal prospects will be assessed using updated research. Wind specific site assessments are anticipated to take a minimum of twelve months after installation of anemometers to collect necessary wind data.
 - A business case analysis will be conducted for each site with high resource development potential that is consistent with mission. Each business case analysis will be based on financial feasibility studies, including evaluation of on-and off-site renewable resource options and costs, with a going-forward recommendation justified by project results.
 - Results will include an assessment of commercial potential, recommended technologies or development strategies, and an assessment of the optimum timing for development, and options to proceed with industry.
 - The expected deliverable of this internal, phased base screening process will be a prioritized list of continental United States (CONUS) and Hawaii bases that are amenable to on-site renewable energy development or power purchase agreements.
 - Some assessments will likely result in early demonstration projects.
2. **Renewable Energy Purchasing and Development Roadmap**– The Services will develop a roadmap and next steps action plan of how Department of Defense (DoD) can most cost-effectively purchase renewable energy and allow on-base renewable energy development for high potential bases
 - These will be drawn from internal DoD and other government expertise, consultations with private industry and experiences of other large landowners and customers in renewable energy development. It will include a methodical “program” approach to purchasing and

using renewable energy that attracts industry-funded development, and provides a standardized process and schedule / timeline.

- **On-Base Roadmap** -- For high resource potential bases, where development is economical and practical or necessary to mission, it will identify in broad terms, obstacles, costs and benefits, and make specific recommendations to surmount obstacles. It will also include a step-by-step action plan (part of an “Industry Outreach and Action Plan”) to attract industry development and department approval, with a timeline for implementation.
- For bases with high development potential, it will include an in-depth financial and DoD positioning analysis, including a base-specific financial assessment to provide a baseline for negotiating royalty and other agreements with private developers. It will include “comparables” paid in equivalent resource markets and a starting position for royalty returns, if possible. This document will be for internal use only.
- **Off-Base Roadmap** -- For bases with little economic resource potential, it will recommend the most cost-effective way for installations to purchase renewable energy, associated costs and propose a next-steps action plan, including a plan to engage industry.

3. **Regional Electricity and Renewable Energy Reliability Analysis** - The Services will evaluate reliability and viability of renewable energy supplies.

- **Evaluate Renewable Energy as a Supply and Price Hedge** -- As a discrete task, each renewable energy resource will be evaluated as to whether use of this resource *can protect an installation against grid strain and market price volatility, increase energy security, and enhance regional reliability* (e.g. hydro unavailability). The assessment will provide recommendations on how DoD and the Services can best position themselves, including best candidate installations, vis a vis these risks using on-and near-site renewable energy.
- **Comparative Technology Analysis** -- An evaluation will include which renewable energy are viable short and long-term options in view of the pace of other technologies, anticipated prices and costs (e.g. fuel cells). The evaluation will recommend factors and unknowns to monitor, with anticipated timelines.
- **Industry Reliability Assessment and Projections** – An evaluation will include whether the renewable energy industries and which ones in particular are capable of reliably providing electricity to DoD (solvency, volume capability, backlog, etc. issues.). The evaluation will consider whether there is sufficient competition in these industries and recommend what DoD actions might help the industry become more reliable for DoD (include in the industry outreach plan.). The Services will coordinate with Defense Logistics Agency on possible development of a “Prime Vendor” contract for renewable energy products and services.

- **Legal and Regulatory Changes** – An evaluation will be made of needed specific changes necessary to overcome barriers in federal and state laws and regulations and barriers in any internal DoD policies which could reduce costs of renewable energy premiums and facilitate purchase and on-base renewable energy development. The evaluation will include a feasibility analysis of whether and how these changes could be made and provide recommendations on how to address them.