Sandia National Laboratories

Energy, Climate & Infrastructure Security

The Infrastructure Security program area works to develop and apply technologies/analytical approaches to secure the nation's critical infrastructure against natural or malicious disruption.

Vision

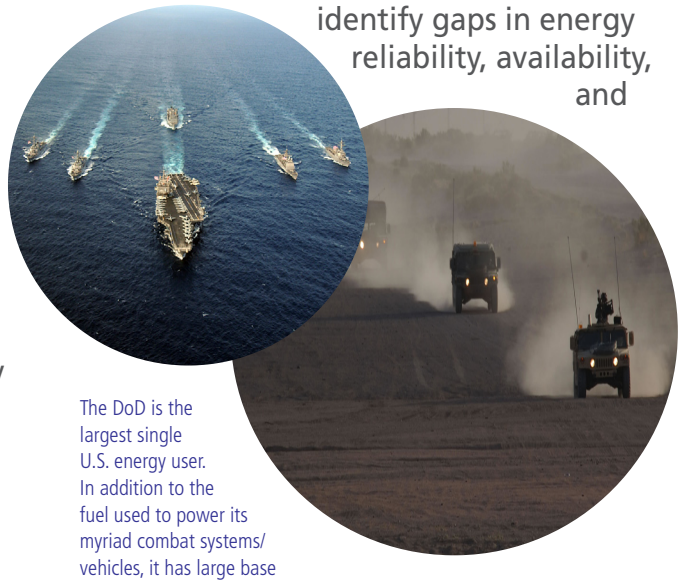
To enhance the nation's security and prosperity through sustainable, transformative approaches to our most challenging energy, climate, and infrastructure problems.

Goal: Develop and use energy security systems analysis/ assessment tools and a sustainable implementation business model to meet DoD/ DOE/DHS defined energy security objectives.

The nation's security is compromised by the fact that a large majority of the energy we consume comes from foreign sources. Our security is placed in jeopardy by foreign competition for the energy resources and international instabilities and conflicts.

DoD Energy Assurance seeks to develop and apply tools to conduct comprehensive vulnerability assessments of critical missions at military installations. The conceptual designs will eventually demonstrate the ability of the base to support critical off-base infrastructure such as first responders, hospitals, etc. as an element of the community disaster-response options.

The military with its disciplined, structured prototyping and acquisition processes provides an excellent forum in which to demonstrate concepts to the more diverse civilian community. In addition, interlinking military installations within a region will be an option for improved national energy interdependence and security. The tools allow us to understand the interdependencies within an installation and to identify gaps in energy reliability, availability, and



The DoD is the largest single U.S. energy user. In addition to the fuel used to power its myriad combat systems/ vehicles, it has large base facilities throughout the continental U.S. and spread across the globe.

U.S. DEPARTMENT OF ENERGY

security. The utility and benefit of energy management against a physical and cyber threat will be explored. Use of alternative energy sources or supply will be considered with the goal of making the installation independent from external supply.

This assessment-tool development effort will use current installation assessment experiences (18 military installations) and integrate with national critical infrastructure simulations to go from national to regional to local energy infrastructure interdependencies and then to greater understanding of affect on critical missions at military bases. The nation has complex interdependencies and a heavy reliance on private industry. The tool will also assist in the development of conceptual designs that will provide decision makers a risk vs cost basis for selecting the optimal solution for a given design basis threat.

By instituting energy security policies and implementing renewable energy generation/use, the military can reduce our national dependence on foreign energy supplies and prototype/prove systems that can then be marketed to commercial and residential consumers.

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