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Silicon Valley Leveraging Government Resources

From Chaos, Unprecedented Opportunity

The logo for K&L GATES, featuring the company name in white, uppercase letters on a solid orange rectangular background.

K&L GATES



San Jose

Policy & Politics

Department of Defense - Energy

Steven A. McCain, Colonel, USAF (Ret.)

K&L Gates LLP Government Affairs

Politics

November 8, 2016 elections

- House remained Republican 234-191
- Senate remained Republican 52-48
- President Elect - Trump

Lame Duck Congress

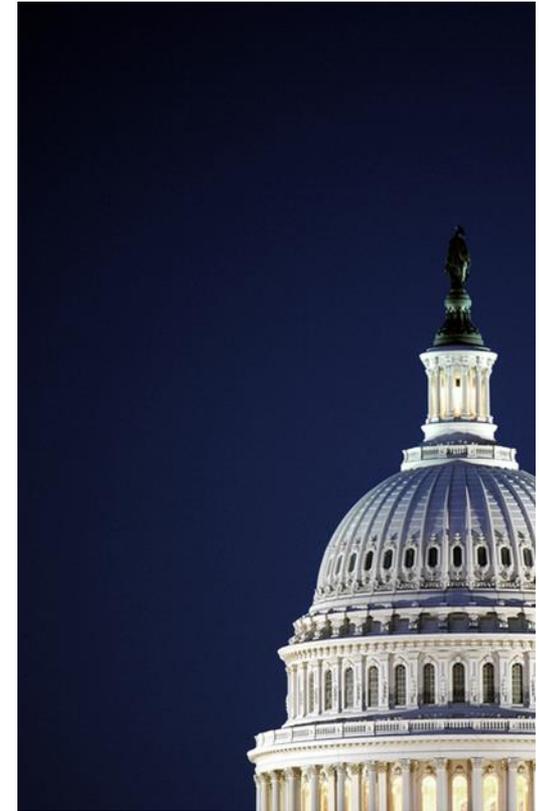
- Energy, trade, and tax packages unlikely
- Leadership elections and Committee assignments
- Federal funding beyond December 9th CR
- National Defense Authorization Act
- Water Resources Development Act and Flint aid

Budget realities will impact policy-making

- Another continuing resolution to March 2017
- Omnibus appropriations
- Sequestration – new budget agreement needed
- Raise the Debt Ceiling

Administration

- Passage of additional regulations
- Transition Teams



Congressional Landscape

Senate

Appropriations

- Chairman Cochran (R-MS) expected to stay
- Ranking Member Leahy (D-VT) (Sen. Mikulski (D-MD) retired)
 - **Defense Chairman Cochran, Ranking Durbin (D-IL)**

Commerce, Science, and Transportation

- Chairman Thune (R-SD) expected to stay
- Ranking Member Nelson (D-FL) expected to stay

Energy and Natural Resources

- Chairman Murkowski (R-AK) expected to stay
- Ranking Member Cantwell (D-WA) expected to stay

Armed Services Committee

- Chairman McCain (R-AZ)
- Ranking Member Reed (D-RI)

Congressional Landscape

House of Representatives

Appropriations

- Chairman Rogers (R-KY) is term limited. Rep. Frelinghuysen (R-NJ) replaces
- Ranking Member Nita Lowey expected to stay
- **Defense Appropriations:** Chair Granger; Ranking Visclosky

Energy and Commerce

- Chairman Upton (R-MI) is term limited. Reps. Shimkus (R-IL), Walden (R-OR), and Barton (R-TX) are running. Rep. Shimkus is seen as slight favorite
- Ranking Member Pallone expected to stay

Armed Services Committee

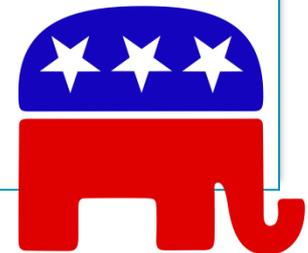
- Chairman Thornberry (R-TX)
- Ranking Member Adam Smith (D-WA)

Transportation and Infrastructure

- Chairman Shuster (R-PA) expected to stay
- Ranking Member DeFazio (D-OR) expected to stay

Impact of 2016 Presidential Election on Energy & Environmental Issues

- Refuse to move forward on policies to implement the Paris COP 21 climate agreement.
- Roll back EPA climate regulations such as the Clean Power Plan intended to reduce greenhouse emissions from carbon energy sources such as coal.
- Roll back other EPA clean air rules such as ozone PM rule, methane, cross state air rule, regional haze, and the endangerment finding for commercial aircraft.
- Roll back the Waters of the U.S. (WOTUS) rule, which would expand clean water regulation to cover more “navigable” waters.
- Roll back additional rules to regulate coal such as the coal ash rule.
- Phase out tax credits for renewable energy – especially wind and perhaps for solar.
- Limit/repeal the Renewable Fuel Standard and other incentives for ethanol.
- Resume funding to license the Yucca Mountain Nuclear Waste Repository.
- Fend off efforts to regulate fracking at the federal level (let states regulate).
- Approve the Keystone XL Pipeline.
- Expedite/streamline permitting for LNG export terminals.
- Approve permitting for proposed marine terminal for export of coal.





President-Elect Trump Energy Plan



Trump Priorities

- Bolstering coal industry a strong focus of the campaign
 - End the moratorium on coal leasing
 - Focus on clean coal technologies
- Find a way out of the Clean Power Plan, methane rules, and various other Obama-era regulations
- Boost approvals for drilling on public lands
- Could push for expedited LNG export facility approval
- Less focus on renewables
 - Skeptical of economics of solar
 - Critical of wind turbines for killing birds
 - Unlikely to push for another extension of installation tax credits
- Develop a comprehensive national energy strategy

Potential Trump Cabinet

Secretary of Defense

- Senator Talent or General Mattis
- Hadley, Gen Flynn, Woolsey

Secretary of Energy

- Continental Resources CEO Harold Hamm
- Cong Kevin Kramer (North Dakota)
- Venture capitalist Robert Grady, former H.W. Bush White House

Environmental Protection Agency

- Texas Commission on Environmental Quality Chairwoman Kathleen Hartnett White
- Oklahoma Attorney General Scott Pruitt

Secretary of the Interior

- Lucas Oil co-founder Forrest Lucas
- Former Governor Sarah Palin

Note: Venture capitalist Peter Thiel will join President-Elect Donald Trump's transition team, a move that solidifies the Facebook Inc. board member's power and could help Silicon Valley have a say in the next administration.

A large field of solar panels under a clear blue sky. The panels are arranged in neat rows and are tilted towards the sun. The sky is a deep, clear blue with a few wispy clouds. The overall scene is bright and sunny, suggesting a clear day.

Department of Defense - Energy

Department of Defense (DoD) is the largest consumer of energy in the federal government

- DoD spends \$10 to \$15 billion on energy depending on oil prices, and including power at more than 500 military installations throughout the world.
- DoD is the largest industrial consumer of oil in the world, using 125 million barrels of oil in FY 2010. DoD projects that energy costs will increase significantly and it will spend over \$100 billion over the next decade on fuel and electricity alone. Renewable energy and efficiency improvements can increase warfighter capability and cut operational and military base energy costs.
- The department spends \$4 billion a year on installation energy, Dorothy Robyn, former deputy undersecretary of defense for installations and environment, testified at a hearing of the House Armed Services Committee on planned energy investments.
- DOD operates more than 300,000 buildings, which have an environmental footprint six times greater than the General Services Administration and three times larger than Walmart.
- To reduce its energy demand and costs, DOD sought \$1.1 billion in funding in fiscal year 2013 for energy efficiency retrofits of buildings.
- DoD also made commitments outside of the budget to enter into more than \$1 billion worth of energy savings contracts.

Energy Security = National Security

- DOD biggest Federal user of energy and power
- Overall defense budget growing
- DOD is a Technology-centric agency
 - Third offset strategy
 - Asymmetric Advantage for Warfighter
- New opportunities for energy innovators
 - Lighter, smaller, more powerful equipment and systems
- Existing energy organization and programs promote new technology
- Energy security, reliability, and cost savings needed
- Congress can help DOD become an early adopter

DOD Energy Goals

Office of the Secretary of Defense	<ul style="list-style-type: none"> • DoD has pledged to draw 25% of its energy from renewable sources by 2025 • Energy Intensity of Facilities Reduced 30% by FY 2015 from FY 2003, and 25% by FY 2025 from FY 2015 • Potable Water Consumption by Facilities Reduced 36% by FY 2025
Air Force	<ul style="list-style-type: none"> • Aircraft engine programs • 1 GW of renewables • Installation Waste to Energy • Hypersonic flight and Directed Energy Weapons
Army	<ul style="list-style-type: none"> • Smart Grids • Energy and Water Metering • Lighter more powerful batteries • GHG per Mile Non-Tactical Fleet Reduced 30% by FY 2025
Navy/Marine Corps	<ul style="list-style-type: none"> • By 2020 produce 50% of shore based energy requirements from alternative sources • 1 GW of Renewables by 2016....achieved earlier this year • Ship and engine efficiency and Alternative Fuels • Marine and Hydrokinetic Energy centers

2016 – DOD Operational Energy Strategy

Objectives	Goals	Targets	OPRs
Increase Future Capability	Institutionalize Energy Supportability Analyses in Capability Development	<ul style="list-style-type: none"> By end of FY 2016, ensure all acquisition programs that use operational energy and are designated as Joint Requirements Oversight Council (JROC) Interest Items by the Joint Staff have an ESA-informed eKPP. By the end of FY 2018, ensure ESAs are used in all acquisition programs that use operational energy and were established in FY 2016 and later. 	<ul style="list-style-type: none"> Joint Staff Services
	Improve Combat Effectiveness and Supportability	<ul style="list-style-type: none"> By end of FY 2018, increase energy supportability, as measured against current capabilities, in 100% of all new acquisition programs. 	<ul style="list-style-type: none"> Services Joint Staff
Identify and Reduce Risks	Identify and Mitigate Energy Related Risks in Deliberate Planning	<ul style="list-style-type: none"> By end of FY 2017, review OE risks in campaign and contingency plans as part of established DoD review cycles. By the end of FY 2018, mitigate or accept 100% of identified OE risks. 	<ul style="list-style-type: none"> Joint Staff Services CCMDs OSD
	Improve Energy Supportability of Concepts of Operation	<ul style="list-style-type: none"> By end of FY 2016, identify CONOPS with OE implications. By end of FY 2017, assess energy supportability and OE vulnerabilities of all identified CONOPS. By end of FY 2017, include OE constraints and limitations analyses in all Title 10 wargames. 	<ul style="list-style-type: none"> OSD Joint Staff Services
	Diversify Energy Supplies to Reduce Risk	<ul style="list-style-type: none"> By end of FY 2016, review Department's capability to test and certify drop-in alternative fuels in pace with emerging technologies. By end of FY 2016, assess opportunities and risks related to expanded use of commercial petroleum products and infrastructure. By end of FY 2017, identify opportunities for harvesting energy from the surrounding environment in CCMD operations. 	<ul style="list-style-type: none"> OSD CCMDs Services DLA
Enhance Current Mission Effectiveness	Upgrade Current Equipment to Improve Energy Use	<ul style="list-style-type: none"> By end of FY 2016, establish a recurring assessment of opportunities to increase the energy supportability of current equipment with extensive remaining service lives. 	<ul style="list-style-type: none"> OSD Services
	Improve Energy Behavior	<ul style="list-style-type: none"> By end of FY 2016, assess improvements needed in energy information systems to increase supply chain visibility. By end of FY 2018, measure OE consumption by type of equipment. By end of FY 2018, include OE principles in required PME courses on strategy, logistics, and campaigning, as well as in general military training within the DoD. 	<ul style="list-style-type: none"> Services Joint Staff DLA

Table 1: Targets for the 2016 Operational Energy Strategy

DoD Energy Organizations

- Office of the Secretary of Defense for Operational Energy Plans and Programs
- Air Force-Office of Energy Assurance develops, implements and oversees an integrated facility energy portfolio, including privately-financed, large-scale renewable and alternative energy projects as well as direct Air Force investments.
- Army Office of Energy Initiatives
- Deputy Assistant Secretary of the Navy (Energy) office
- Marine Corps Expeditionary Energy Office
- DARPA – developing new materials for energy transduction
- DPA Title III and ManTech – manufacturing of new technologies

DOD works closely with DOE, USDA, DOI, EPA on projects and programs

DoD Energy Programs

Senior Pentagon Leaders seek to harness near-term technologies for the benefit of ongoing operations while casting a longer-term developmental strategic view firmly grounded in the need to produce, store, maintain and transport energy; the strategy is aimed at lowering long-term energy costs in light of global developments but also identify tactical and operational advantages from energy-efficient technologies.

- **PPP:** geothermal, solar, and just announced wind, biomass next.
- **Operational Energy Capabilities Improvement Fund (OECIF):** initiated four multi-year programs in FY13 to improve the energy performance of forces in the field.
- **Rapid Innovation Fund:** collaborative vehicle for small businesses to provide the department with innovative technologies that can be rapidly inserted into acquisition programs that meet specific defense needs.
- **Military Service R&D Programs:** still many opportunities
- **SBIR and STTR:** small business innovation grants.
- **Defense Production Act Title III:** biofuels, solar panels, and energy storage.

DOD contracts

- **Energy Savings Performance Contracts (ESPC)** – Implementation and financing of energy efficiency projects out of energy cost savings via ESCO's
- **Utility Energy Service Contracts (UESC)** – Service contract with utility provider Projects with 10-year simple payback are acceptable projects – renewable projects can go longer
- **Enhanced Use Lease (EUL)** – Use of non-excess DoD land exchanged for “In kind” SRM projects (5 up to 25 years)
- **Power Purchase Agreement (PPA)** – Energy projects constructed on installations at no-cost in exchange for long term agreements to purchase renewable energy Up to 30 years
- **GSA area-wide contract** - Use existing installation contracts; 10-year term with renew option
- **Utilities Privatization** - 50 year lease

DOD Power and Energy -- Gaps and Opportunities

- Integrated power and thermal management capable of handling increasing energy and power density needs across multiple systems and power ranges
- Integrated, intelligent power distribution and management
- Architectures, interfaces, and standards for reconfigurable power systems (energy networks / microgrids)
- More capable, higher power/temperature/efficiency power devices and components (e.g., wide bandgap electronics for continuous & pulse power)
- Improved energy storage, harvesting, and recovery systems

Additional capabilities being considered

- Power for UxV and loitering/reconfigurable munitions capabilities
- Wireless power transfer
- Platform-based, high repetition rate, very dense power and energy for next generation capabilities
- Power for Warfighter wearable augmentation
- Unlimited mission endurance without energy resupply requirements

Industrial Control Systems and IoT cybersecurity – critical to ALL

DOD Energy Projects

Air Force

March 2016 - The Forward Operating Base of the Future project at the Basic Expeditionary Airmen Skills Training facility at JBSA-Lackland, Texas, is "open for business," Secretary of the Air Force Deborah Lee James announced this month. The FOB of the Future project uses alternative energy sources, energy storage technologies, and secure smart grid technology to demonstrate how the Air Force may reduce its reliance on diesel fuel at forward operating bases across all our bases."

Army

August 2016 - 50 megawatt (MW) multi-fuel renewable energy project in collaboration with Hawaiian Electric Company (Schofield Barracks, Hawaii). The project is anticipated to be operational by Spring 2018 and will run on a mixture of biofuels and conventional fuels. Situated approximately 900 feet above sea level and away from possible coastal effects of storm surges, this project will provide "black start" capability and deliver greater emergency preparedness capabilities, enhance the resilience of the Oahu electrical grid, and provide Schofield Barracks, Field Station Kunia, and Wheeler Army Air Field with secure and reliable renewable energy generation.

Navy/Marine Corps

October 2016 – Asst. Secretary of the Navy for Energy, Installations and Environment Dennis V. McGinn announced that the Navy and Marine Corps will lease 205 new electric vehicles for use at California installations. It is the largest integration of electric vehicles in the federal government. He also announced that solar energy projects will be installed at Naval Air Station Lemoore, Naval Weapons Station Seal Beach and at Naval Base Ventura County. The Lemoore project is the largest photovoltaic facility on Department of Defense land, while the Seal Beach and Ventura County projects will include battery storage.

DOD Energy Funding...

Laws, Executive Orders, Policies drive agency requirements and subsequent investments

- Other Transactional Authority
- Venture Capital
- Tax Credits
- Federal Loan Guarantees
- Federal Grants including SBIR and STTR, RIF
- Congressionally Directed Funding...
 - Programmatic...“plus-ups”
- Legislative authorizations
- Government “buy-in”, Program of Record

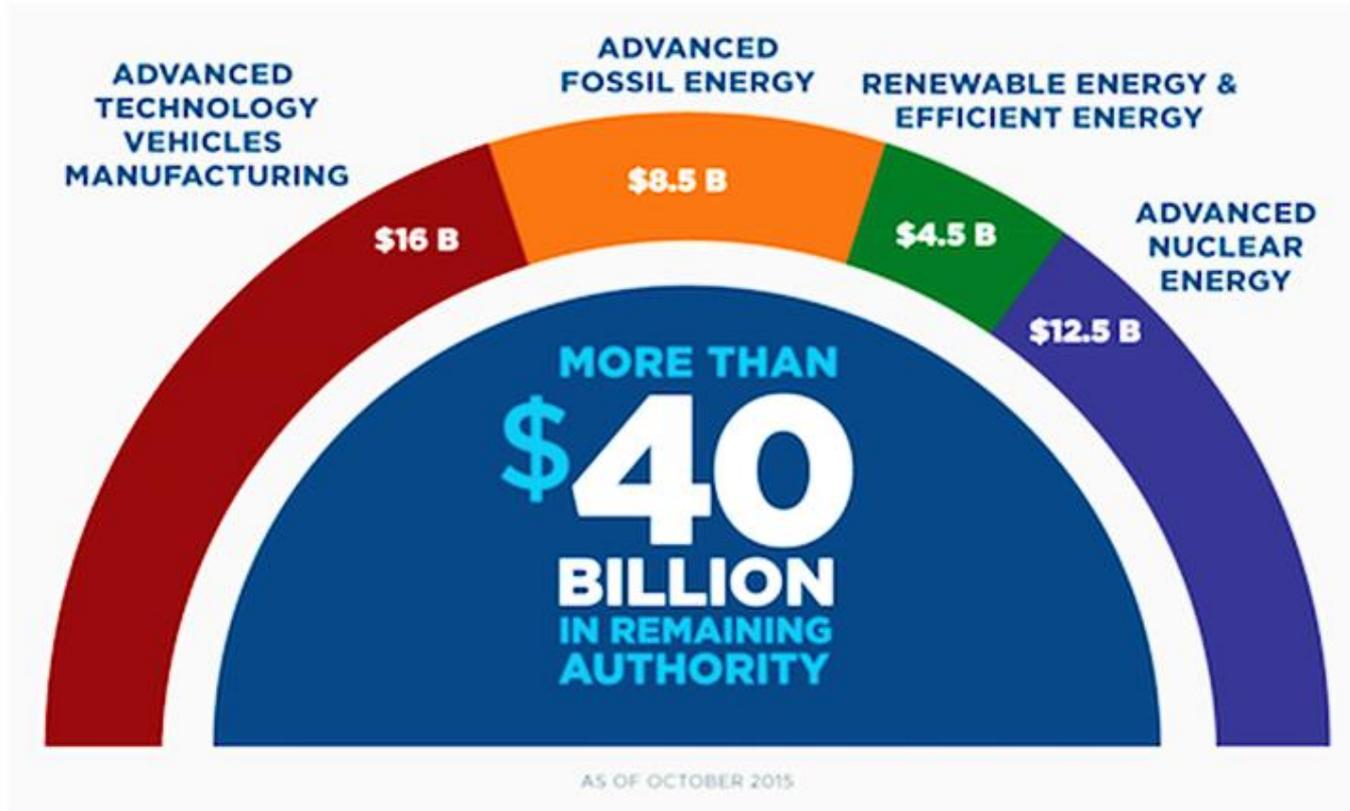
Develop a compelling case for funding

- (Economic impact, policy and politics...know your consumer!)
- Make the right case to the right people

DOE Loan Guarantee Solicitations

* NEXT TITLE XVII PART I APPLICATION DEADLINE IS JANUARY 18, 2017 *

* SEE FULL [SOLICITATION CALENDAR HERE](#) *



Defense Energy Legislation



Fiscal Year 2017 Defense Bills

Defense Appropriations stalled earlier this year due to disagreement on OCO funding and BCA discretionary spending

- Senate version of the bill (S 3000) adheres to the budget caps agreed to last year
- House bill (HR 5293) uses \$18 billion in OCO funds
- Senate Minority Leader Harry Reid, D-Nev., said any attempt by Republicans to raise defense spending should be matched by an increase in nondefense spending.

- Expect Congress to pass a continuing resolution (CR) likely thru March 2017 to avert a government shutdown.
- The CR will add to budget uncertainty for DOD and my cause further delay in project and funding decisions...
- Defense appropriations bill will likely be included in Omnibus Bill passed early next year.

National Defense Authorization Act conferencing actions are on-going and expect agreement could be reached by the House and Senate in early December.

Senate Armed Services Committee

2017 NDAA Language

Energy resiliency metrics

(DOD) should [assign a value to energy resiliency and mission assurance for its installations](#). The committee believes that having appropriate energy resiliency and mission assurance metrics could enable DOD and installation commanders to document the value of energy security to better inform infrastructure investment decisions. The committee is concerned that the Department and the military services may not currently or consistently evaluate the impact of energy disruptions and outages on its facilities and installations. For example, current methods by which utility disruptions and outages are tracked and evaluated by DOD may not account for costs associated with loss of mission capability. The committee is also concerned that energy resiliency and mission assurance evaluations and planning may vary within each military service as well as across DOD. Additionally, a consistent valuation methodology could encourage industry to develop new business models and third party financing mechanisms to help DOD achieve greater energy resiliency and mission assurance on its installations.

Accordingly, the committee directs the Secretary of Defense to report to the congressional defense committees no later than March 30, 2017 with [established metrics to evaluate the costs, risks, and benefits associated with energy resiliency and mission assurance against energy supply disruptions on military facilities and installations](#). The metrics should take into account financial and operational costs and risks associated with sustained losses of power resulting from natural or man-made disasters or attacks that impact military installations.

Senate Armed Services Committee

2017 NDAA Language

Subtitle B--Real Property And Facilities Administration

- Authority to carry out military construction projects for energy resiliency and security projects not previously authorized (sec. 2811).
- The committee **recommends a provision that would amend section 2914 of title 10, United States Code, by placing a higher funding priority on energy resiliency and security**, in addition to conservation, within the energy conservation investment program.
- The committee is concerned that the Department of Defense (DOD) is not adequately addressing national security threats and **costs of electricity grid outages** and failures as part of the electricity procurement process. The result is a DOD electricity procurement policy which favors the lowest-cost form of energy, but does not include costs associated with energy resiliency capabilities, or the value of electricity to achieve mission assurance in the calculation for purchasing energy.
- The committee recognizes the value of energy conservation and payback periods. However, the committee believes that DOD and the military services' ability to accomplish their missions through enhanced energy resiliency and security, ultimately should have a higher priority above conservation.
- The committee believes the Department should place **greater emphasis on energy resiliency projects to critical mission operations** that can withstand threats from cyber, climate, and physical attacks through improved systems in energy generation, transmission, and distribution.
- Additionally, the committee believes the Department should pursue life-cycle cost-effective energy resiliency solutions that **provide mission assurance and prioritize critical energy loads** of the installation beyond standby generators with potential solutions, including but not limited to cyber security, redundancy, micro-grids, distributed energy resources, islanded power plants, site security, demand response, renewable energy, diversified fuel sources, advanced metering, event detection, sensors, predictive analytics, automatic transfer switching, black-start capabilities, and electromagnetic pulse protection.

HASC Report: Energy Issues

Alternatively Financed Energy Projects: directs the Comptroller General of the United States to review the extent to which the Department of Defense is effectively leveraging appropriations to repay developers for alternatively financed energy savings, efficiency, or generating capacity projects.

Expeditionary Power Management Systems: fielding of energy-related technologies aimed at extending range and endurance, increasing flexibility, resilience, and force protection, while enhancing mobility.

Small Modular Reactors: address the economic feasibility of siting SMRs on commercial electric grid and supplying power to military installations with peak power demands of 40 MW or greater.

Marine and Hydrokinetic Technology: commends the U.S. Navy's exploration of ocean renewable energy, including marine and hydrokinetic energy systems, and notes the value of investing in alternative energy research with potential operational and fiscal benefits...full-scale device testing.

Procurement of Alternative Fuels: fully burdened cost of such fuels must be cost-competitive with conventional fuels.

Assessment of Hardening Technologies for Microgrids: how to integrate technologies to harden against electromagnetic pulse (EMP) from high altitude nuclear burst or space weather.

Concept of Operations for Military Environmental Control Units: possible use of enclosed-sized ECU units and systems for equipment cooling for FOBs.

Facility Industrial Control Systems: higher connectivity of these systems brings an increased threat from, and vulnerability to, cyberattacks.

HASC Report: Energy Issues

Energy Assurance for Department of Defense:

Important to have the ability to recover from utility disruptions that impact mission assurance on its installations. In a globally linked battlespace, a disruption to the electrical supply at an installation in the United States can impact core military and national defense missions involving power projection, defense of the homeland, or operations that are forward deployed.....encourages the Department to leverage and integrate existing authorities to ensure installations have resilient, available, reliable, and continuous power during disruptions to the electrical supply. Such actions and investments should prioritize facilities supporting mission critical functions.

Integration of Installation Energy Authorities:

DOD has a variety of statutory authorities that can be used to fulfill the Department's installation energy needs, including authorities ranging from third-party financing to capital investment using appropriated dollars. Committee is concerned that the initiatives being pursued by the Department are not fully integrated and encourages the Department to interpret and integrate its existing authorities to support a holistic approach, focusing on projects and initiatives that integrate efficiencies, generation, storage, and infrastructure modernization at military installations.

Defense Energy Authorities

10 U.S. Code § 2688 - Utility systems: conveyance authority

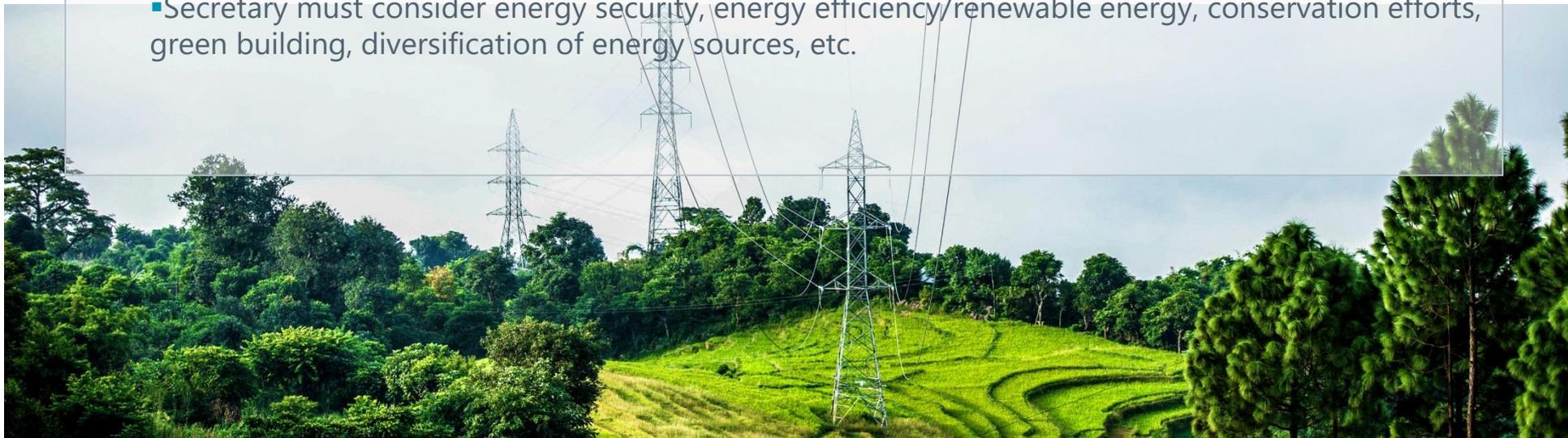
- Secretary of military department can convey utility system to municipal, private, regional, district, or cooperative utility company.

10 U.S. Code § 2922a - Contracts for energy or fuel for military installations

- Secretary of military department can enter into contracts up to 30 years under §2917 (developing geothermal energy on public lands for benefit of DoD/public interest) or to operate energy production facilities on real property or private property.

10 U.S. Code § 2911 - Energy performance goals and master plan for the Department of Defense

- Secretary of Defense will submit- on an annual basis-energy performance goals to Congress and will develop master plan for attaining goals
- Secretary must consider energy security, energy efficiency/renewable energy, conservation efforts, green building, diversification of energy sources, etc.



Defense Energy Authorities (cont)

10 U.S. Code § 2922 - Liquid fuels and natural gas: contracts for storage, handling, or distribution (& 2924)

- Secretary can contract for storage facilities, storage, handling, or distribution of LNG.
- 2922b - Secretary should procure solar/renewable forms whenever possible.
- 2922c - For gasoline contracts, blends must include at least 10 percent domestically produced alcohol if it is comparably priced to unleaded gasoline.
- 2922d - Secretary should use domestically produced coal, oil shale, tar sand to meet fuel requirements when it is in national interest.

10 U.S. Code § 2410q - Multiyear contracts: purchase of electricity from renewable energy sources

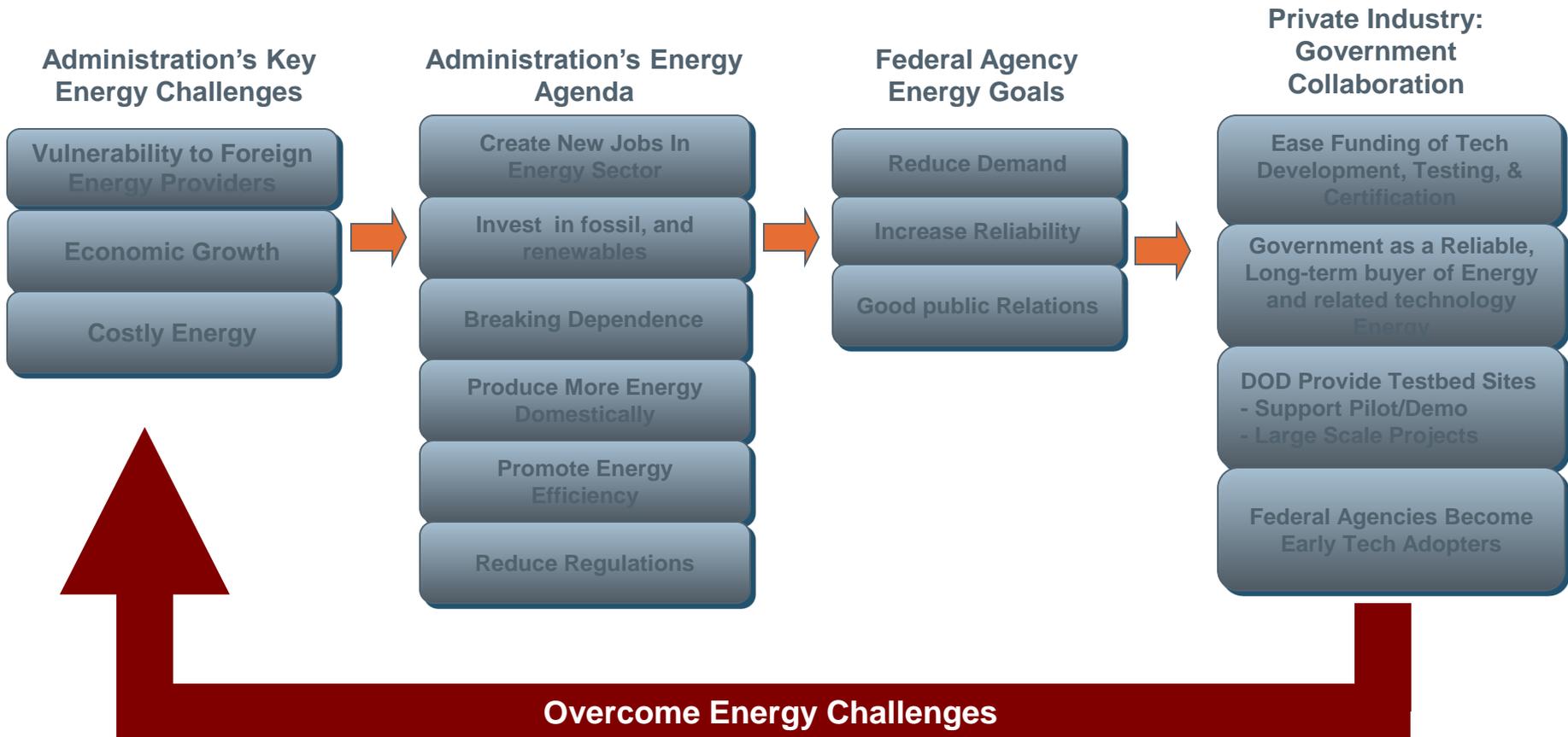
- Sec. of Defense may enter contract up to 10 years for renewable energy-related electricity purchases
 - Nothing in section precludes DoD from using other multiyear contracting authority to purchase renewables.

10 U.S. Code § 2914 - Energy conservation construction projects | US

- The Secretary of Defense may carry out a military construction project for energy conservation, not previously authorized, using funds appropriated or otherwise made available for that purpose.

Private Industry Alignment with Federal Policy

Achieve National Economic and Security Objectives



Good Policy...

...can advance our national security for a stronger, safer, and more prosperous America.

Thanks again for your innovation and leadership in promoting energy and cyber security.

K&L Gates assists leading edge companies with their business and policy objectives.

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