

# Collaboration Between Army Installations and Utility Companies

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The United States Army operates many installations in the United States and around the world, and these facilities consume large quantities of energy. The Army would like to reduce energy use at its installations because it wants to reduce its energy costs (over \$1.2 billion in 2010) and because legislation and policy have directed it to do so.<sup>1</sup> While the Army has a new energy vision, Net Zero Energy Installations (NZEI), calling for installations to produce as much energy as they use in a year, installations do not have many investment options to help them achieve that goal nor any consistent dedicated funding for energy efficiency or renewable energy projects. One solution is for installations to collaborate with utility companies. The Army asked RAND Arroyo Center to recommend ways that its installations could improve collaboration with utility companies.

## Installations Have Many Ways to Collaborate with Utility Companies

RAND Arroyo Center found that Army installations are collaborating with energy utilities in many different ways and that collaboration benefits both the installation and the utility company. For the former, it can help reduce energy consumption, save money, tap into expertise and advice, and fund energy projects that would be difficult to finance with traditional sources. For the latter, good collaboration can help increase profits, improve the company's image, and reduce demand, obviating or delaying the need to provide additional capacity. Such collaboration can also help utilities meet their energy conservation, renewable energy, and other goals. The table lists

<sup>1</sup> For example, the Energy Independence and Security Act (EISA) of 2007 directs military installations to reduce energy consumption 30 percent by 2015, and the Energy Policy Act of 2005 (EPAAct) directs them to increase, by 7.5 percent, their use of energy from renewable sources by 2013.

### Key findings:

- The Army spends over \$1 billion a year on energy for its installations and wants to reduce that cost.
- Installations can collaborate with energy utilities to lower costs through such mechanisms as Utility Energy Service Contracts and Utility Service Contracts.
- Barriers limit such collaboration, including a lack of expertise at the installation and the energy utility, the perceived risk of projects, and the long time it takes to pay back an investment.
- The Army can help overcome barriers by educating installation staff, including commanders, establishing closer ties with utility companies, issuing supportive policies, and advertising successful collaborations both to installations and energy utilities.

some of the ways installations can collaborate with utility companies.

### Many Barriers Limit Collaboration

While many Army installations are collaborating with utility companies, a number of barriers make collaboration difficult or limit it.

**Lack of utility interest.** One main barrier to collaboration pertains to the utility companies: they are simply not interested in collaborating or entering into Utility Energy Service Contracts (UESCs). Reasons include lack of familiarity, staff, or expertise, and a perceived risk in working with military installations and the attendant government bureaucracy.

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## Ways Installations Collaborate with Energy Companies

Method	Characteristics
Utility Energy Service Contracts (UESCs)	UESCs help finance and implement installation energy projects, e.g., install a more efficient boiler. Utility makes initial investment; installation pays it back over contract life, typically 10 years.
Utility Service Contracts (USCs)	USCs are used to provide energy distribution and transmission systems. Can be used for some energy efficiency projects, such as energy efficient solar-powered streetlights.
Energy security and reliable service collaboration	Utility works with installations to ensure reliable power, including during emergency situations, such as a terrorist attack incident. Includes planning for backup power, allowing on-installation power plant, and even isolating from the grid.
Energy audits, tech assistance	Utility provides free or fee-based energy audit to identify energy efficiency projects. Provides technical assistance for identifying, choosing, installing, or operating energy efficient or renewable technologies.
Training and education	Utility offers free energy efficiency and other energy-related technology training and education.
Renewable energy collaboration	Utilities collaborate with installation to explore, invest in, and operate renewable energy projects and to purchase renewable energy credits. Utilities can help finance, negotiate, build, and operate on-site projects.
Utility rebate and incentive programs	Utility offers or promotes rebate programs to get customers to invest in efficient or renewable technologies. May mean that utility does not have to build new generation capabilities. May also help utility conform to state regulations.
Demand response	Utilities like to work with installations in this area to help reduce peak demand and capacity needs. In these programs, the customer agrees to short periods of decreased consumption during high-demand periods.

**Lack of experienced installation staff.** A significant problem is a lack of a qualified, full-time energy manager. The highest pay grade for energy-related positions is usually GS-12 (or equivalent). Lack of advancement potential contributes to the high turnover rate of installation energy managers, which generally means a more junior replacement and a loss of expertise. Even where a full-time manager is present, often not enough trained staff are available to support him or her. Also installation staff often lack the technical expertise or business experience to implement a UESC or renewable energy project.

**Legal and contracting staff issues.** Another significant barrier pertains to legal and contracting staff. First, they generally have a full slate of routine activities. Second, staff members lack understanding of and familiarity with UESCs and are thus reluctant to get involved with them. This reluctance can delay projects for months or years or cause their termination.

**Other installation support issues.** Public works departments at installations often lack the time or qualified staff to work with the utility companies and installation energy staff on UESCs. Further, installation commanders may not support or lack interest in UESCs, and that support is often crucial to gaining acceptance of the project by the installation staff. Finally, the long-term commitment and financial complexity of UESCs often deter financial and business staff from pursuing them.

**Renewable energy investment issues.** Renewable energy projects confront their own suite of issues. Some are economic. Cheap electricity can make renewable energy

projects seem a less attractive investment. Also, these projects are perceived to be technically riskier than other approaches. That uncertainty and the complexity and technical expertise required tend to deter staff from pursuing them. The cost and intermittency of renewable energy coupled with the ten-year payback in UESCs also tend to limit collaboration.

**Other barriers to collaboration.** One issue is that installation staff do not know about funding and contracting mechanisms other than UESC projects, such as power purchasing agreements and USCs, which could be either alternative or complementary methods to UESCs. Lack of staff knowledge, interest, or time also hinder other projects where utility companies would be interested in collaborative efforts. These include energy security, on-site power generation, metering, smart grid, and demand response and other incentive programs. With respect to demand response, installation participation has been limited because it is difficult for installations to get the proceeds for participation.

### Ways to Overcome Barriers

While many barriers exist, there are also many ways to overcome them.

#### Motivate Utility Companies to Collaborate

Some utility companies are not interested in collaborating with installations. The Army could foster collaboration by reaching out to the utility companies. The Assistant Chief

of Staff for Installation Management (ACSIM) and Installation Management Command (IMCOM) having a policy for installations to do so would be a good initial step, as would more ACSIM/IMCOM engagement with utility associations. Education of the utility companies would also be a useful approach. A longer payback period of 30 or 40 years for the UESCs would allow greater flexibility, especially for renewable energy projects. Finally, speeding up the federal process would also help, especially contract approval.

### **Deal with Staff Issues**

Energy staff are critical to increased collaboration, and several improvements would facilitate it. One would be to ensure an adequate number of energy staff and allow a higher pay grade for the installation's energy manager, i.e., to the GS-13 level, especially for larger installations. Installations could also employ more Resource Efficiency Managers (government contractors who have energy efficiency expertise). Issuing the new Army UESC policy and a handbook on how to do UESCs would also be helpful. The UESC handbook should contain lessons learned and case studies that show how installations saved money, reduced consumption, and improved operations, reliability, and security. Additional staff training on UESCs and other collaboration opportunities and providing more technical assistance would also be beneficial.

### **Improve Legal and Contracting Staff Expertise**

Staff members from legal and contracting organizations are important to implementing a UESC. Increasing the time devoted to UESCs in standard Army legal education, such as including UESC issues as part of contracting legal courses, would be beneficial. The Army should provide UESC training to installation staff, including having legal staff attend UESC workshops, ensuring that the new UESC policy explains the role of installation contracting officers and that contracting staff receive the detailed UESC handbook discussed earlier.

The Army should also assist reluctant and overworked contracting staff by establishing a Center of Expertise on UESCs. Another helpful step would be referring them to ACSIM/IMCOM energy offices, Pacific Northwest National Laboratory, or Mission and Installation Contracting Command (MICC) staff for technical assistance.

### **Other Installation Support Issues**

Dealing with these issues involves many of the same prescriptions used for others: educating the commander and the public works, business, and financial staff about UESCs and utility collaboration. Adding modules on these subjects to the

courses that commanders attend before assuming command would help overcome some of the reluctance they might have to pursue these options. Having key members of the public works and business and financial staff attend UESC and Federal Utility Partnership Working Group and other relevant conferences and providing them technical assistance would also be helpful.

### **Renewable Energy Investments**

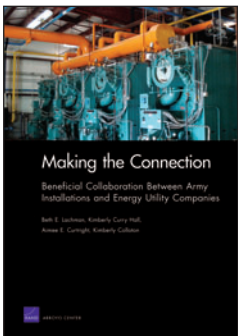
To expand the use of renewable energy, the Army should encourage, support, and document more renewable energy demonstration projects at installations; expand installation staff education and training; and improve collaboration with utilities in renewable energy through Army policy and guidance.

Support for renewable energy experiments should include research on and financial and technical assessments to identify the most feasible, productive, and cost-effective renewable energy sources for a given installation. All successful demonstrations, large and small, should be documented in the form of detailed case studies and shared widely. Providing more education and training about renewable energy options—for example, through workshops and conferences—would help. Networking across installations would also be beneficial.

Army policy and guidance should encourage more utility collaboration in on-site power generation, energy security, power purchase agreements, and enhanced use leasing (EUL) deals regarding renewable energy technologies.

### **Overcoming Other Barriers to Collaboration**

Five activities would help deal with broader collaboration issues. Some of these parallel actions to improve UESC implementation. Educating installation staff on collaboration mechanisms other than UESC (e.g., enhanced use leasing, power purchase agreements, and utility services contracts) would yield similar benefits, and ACSIM, IMCOM, and other commands should provide such training. Additionally, ACSIM, IMCOM, and other commands should increase the information exchange and collaboration with utilities and utility associations, scheduling regular meetings with utility associations and major utilities to discuss key areas of interest including on-site collaboration, financial mechanisms, energy security, metering, smart grid, and demand response. Taking advantage of utility company interest in key areas such as energy security, metering, and smart grid deployment would facilitate collaboration. A complementary recommendation is for ACSIM and IMCOM to provide more information and training on such opportunities in key areas. Lastly, ACSIM should try to ensure that installations are able to use incentives for energy program investments. ■



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This research brief describes work done for the RAND Arroyo Center and documented in *Making the Connection: Beneficial Collaboration Between Army Installations and Energy Utility Companies*, by Beth E. Lachman, Kimberly Curry Hall, Aimee E. Curtright, and Kimberly Colloton, MG-1126-A (available at <http://www.rand.org/pubs/monographs/MG1126.html>), 2011, 190 pp., \$30, ISBN: 978-0-8330-5849-2. This research brief was written by Jerry Sollinger. The RAND Corporation is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. **RAND**® is a registered trademark.

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