



Alternatives for Reducing Army Installation Utility Bills While Enhancing Installation Readiness

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Many Army installations are facing significant and increasing monthly costs in their utility accounts for energy and water services. Researchers identified options for reducing installation utility costs in three main areas: reducing commodity payments; finding alternative funding sources for energy and water system investments; and leveraging nontraditional partnerships, particularly with state and local governments.



RESEARCH QUESTIONS

- How can Army installations reduce their utility costs while maintaining or enhancing installation readiness?
- What are the utility management and market trends in water and wastewater, electricity, and natural gas?
- What implications do the utility management and market trends have for Army installation utility costs?
- What alternative funding sources can installations leverage to pay for energy and water system investments?



KEY FINDINGS

Key trends are evolving utility management, technologies, and business approaches

- In water and wastewater management, the focus has shifted from accessing new water sources to more efficiently managing existing ones—including reclaimed water and other nontraditional sources — and on more collaboration in water planning and management.
- The electric distribution system is evolving to a smart grid and from centralized to more-diverse power systems that feature mostly smaller distributed energy resources (DERs), with a rise of “prosumers” that produce and consume their own power (e.g., by using rooftop solar systems). As a result, electric utility

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business models are changing.

- Also, utilities are less able to rely on electricity commodity payments to recover all of their fixed costs, so they are experimenting with new rate structures (such as time of use and value of solar pricing) and business approaches, including nontraditional partnerships.
- In addition, because of the technical challenges associated with integrating and managing DERs, such as the intermittent availability of solar energy, electric utilities are finding that energy storage technologies are becoming more valuable for grid stability.

There are three options for reducing army installation utility costs

- These options are reducing commodity payments and contractual commitments, identifying alternative funding sources for energy and water system investments, and implementing nontraditional partnerships.
- Nontraditional partnership approaches that can cut costs include large-scale leasing and other outgrants and partnerships with state and local governments. Funds earned from outgrant projects can be used to help pay for some installation water and energy system investments, to enhance energy and water security, and to pay installation utility bills.
- The Army might wish to maintain flexibility in utility deals that would allow it to take greater advantage of utility market trends to save money and enhance energy security as market approaches evolve and as new technologies enter the market.



RECOMMENDATIONS

- Installations should consider reducing installation commodity payments by using buying power to renegotiate rates, by becoming smarter and more-active consumers or prosumers, and by lowering peak energy demand and increasing participation in demand-response programs.
- Given the evolving electricity market, installations should consider seeking more opportunities to participate in electric utility time-of-use pricing and other emerging rate structure programs, and sooner (where possible), because early adopters are likely to achieve the greatest financial benefits.
- Army installations should continue to make cost-effective energy and water efficiency and infrastructure investments, but they should consider a broader array of funding mechanisms and strategic approaches for these projects. Options include leveraging Army mission funding for energy and water resiliency and security needs; taking advantage of federal, state, and local funding sources; and implementing nontraditional installation energy and water partnerships.
- Army headquarter organizations should consider exploring the Army's potential role in energy storage for enhancing grid security to benefit Army installation readiness. Such an approach would leverage Army installation assets and electric utilities' increasing need for energy storage. A strategic enterprise approach across CONUS military installations in partnership with electric utilities could be considered to enhance grid stability and thereby enhance Army readiness and national security.
- The Army should increase collaboration across headquarters organizations to promote the use of all available funding sources for energy and water system investments, especially ones that do not increase utility payments.