

## RENEWABLE ENERGY FINANCING UNDER ESPC AUTHORITY: WHITE SANDS MISSILE RANGE CASE STUDY

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*The landscape for federal renewable energy procurement gained an important solution in 2009, when the U.S. Army revised and awarded Indefinite Delivery/Indefinite Quantity (IDIQ) contracts to select Energy Services Companies (ESCOs), enabling the federal government to benefit from their own renewable energy federal tax incentives under the Energy Savings Performance Contract (ESPC) authority. The new IDIQ contracts constitute a structure where the renewable energy assets are privately owned, allowing the private sector to provide the standard ESPC project while having the ability to monetize tax benefits. In 2012, this structure was successfully deployed through a strategic alliance between Siemens Government Technologies (SGT) and Bostonia Group LLC (Bostonia) for an ESPC project for the Army at White Sands Missile Range in New Mexico that included 4.5 MW of solar generation. Although the project has been a success, the validity of this structure has been called into question due to confusion surrounding existing contracting guidelines. Despite the ongoing debate, Bostonia and SGT believe that this strategy is not only cost-effective, but also acceptable under existing contracting guidance, and see a promising future for procurement of renewable energy under the ESPC authority.*

### ESPC, ENERGY EFFICIENCY AND RENEWABLE ENERGY: A SUCCESSFUL COMBINATION

ESPC programs administered by the Department of Energy (DOE) and the U.S. Army Corps of Engineers (USACOE) have proven to be successful tools for agencies across the federal government in reaching federal energy efficiency goals. In fact, as of October 2013, 285 ESPCs have been implemented, representing \$7.3 billion in energy savings to the federal government.<sup>28</sup> These projects are simply the first step in an aggressive series of energy reforms that have been called for by President Obama and other civilian and military leaders.

In addition to energy efficiency targets, the Department of Defense (DoD) has established ambitious objectives to increase its use of on-site renewable energy with an aim toward reducing its reliance on both fossil fuels and electricity received from the commercial grid, improving energy security, and minimizing disruptions that could jeopardize critical missions.<sup>29</sup> The Army, Navy, and Air Force have each established targets of one gigawatt of installed renewable energy capacity by 2025, and the DoD has a goal to supply 25% of all the energy it produces or buys from renewable energy by 2025. According to a report published in September 2012 by Pike Research, the DoD is expected to spend \$1.8 billion to meet these goals.<sup>30</sup> It is apparent that the federal government should make use of all its available contracting authorities to achieve these goals, and therefore, ESPCs should not be penalized or dismissed as an ineffective contracting vehicle to procure the renewable energy

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[http://www1.eere.energy.gov/femp/financing/espcs\\_awardedcontracts.html](http://www1.eere.energy.gov/femp/financing/espcs_awardedcontracts.html)

<sup>29</sup> United State Government Accountability Office Report to Congressional Committees. Renewable Energy Project Financing:

Improved Guidance and Information Sharing Needed for DOD Project-Level Officials

<sup>30</sup> <http://www.solarserver.com/solar-magazine/solar-news/archive-2012/2012/kw39/pike-research-us-military-to-increase-investments-in-renewable-energy-up-to-usd-18-billion-in-2025.html>

and energy efficiency improvements the government demands.

### **ESPC AT THE WHITE SANDS MISSILE RANGE: A SUCCESS STORY**

In 2012, the U.S. Army Engineering and Support Center competitively awarded SGT an ESPC to implement various energy conservation measures (ECMs), including the installation of a 4.5 MW solar photovoltaic (PV) generating system for the USACOE at the White Sands Missile Range in New Mexico. The project was completed and commissioned in December 2012, and the PV system represents the largest system of its kind on U.S. Army land. The system will generate about 10 million kilowatt-hours (kWh) of clean electricity annually – enough energy to meet the installation’s demand while providing an estimated annual savings of \$930,000. The White Sands ESPC also allows customers to retain 100% of the solar renewable energy credits. In aggregate, the project will create total cost savings of approximately \$44 million over the 25-year contract term.

This project, a “first of its kind” transaction, was made possible through a strategic alliance between SGT and Bostonia, which provided third-party financing, construction through operations, through the innovative use of an ESPC that included an Energy Services Agreement (ESA). Unlike a traditional ESPC, where assets are transferred to the government at project acceptance, this financing involved private-asset ownership in order to monetize federal tax incentives, which in turn delivered the most economically viable financing structure for the project to the Army. This arrangement also shifted the risks of ownership from the Army to the private sector, including administration, maintenance, equipment performance, and long-term operation of the project. Ultimately, the private sector is able to replace the Army’s fossil-fueled energy use with clean renewable energy over a term of 25 years at a

guaranteed production level and price, without any capital investment or risks associated with ownership.

### **NEW CHALLENGES FOR RENEWABLE ENERGY PROCUREMENT VIA ESPC**

As the DoD and federal agencies adjust priorities to meet the aggressive and highly visible goals of procuring billions of dollars of energy efficiency and renewable energy, the need for cost-effective, innovative, third-party financing solutions become increasingly important. As these agencies have found, using third-party financing solutions can prove effective in helping to reduce the burden of shrinking budgets while leveraging private-sector expertise and capital to install large-scale renewable energy developments for the government’s benefit.

Recently, however, third-party financing structures have encountered new challenges and barriers as federal agencies, ESCOs, and the private sector explore new strategies for achieving energy efficiency and renewable energy mandates. Many of these challenges have stemmed from attempts by the U.S. Government Accountability Office (GAO) and Office of Management and Budget (OMB) to refine, update, and administer guidance on these initiatives to help installation managers understand what contracting vehicles are best suited for achieving their goals. The unintended consequence of well-meaning guidance has been that it has created confusion and misunderstanding as to which contracting vehicles are most appropriate for the procurement of various energy efficiency and renewable energy technologies.

Debate on this topic has centered on the uncertainty of whether ESPC guidelines (10 C.F.R. Part 436, Subpart B) allow for the inclusion of renewable assets, a point illustrated in GAO’s April 2012 Report.<sup>31</sup> The report notes that “different interpretations of the guidance” have led some military installations to decide not to use ESPCs to

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<sup>31</sup> *Renewable Energy Project Financing: Improved Guidance and Information Sharing Need for DoD Project-Level Officials.*

finance renewable energy due to “the uncertainty about whether such projects are considered energy conservation measures and whether the projects are economically viable.”<sup>32</sup> The report concludes that these uncertainties and differing interpretations may prevent military services from taking advantage of the various financing approaches available. Fortunately, the DoD acknowledges this problem, and the lack of overarching guidance continues to be addressed in an effort to bridge the information gap and ensure all military services have access to the same options. For example, OMB’s memorandum M-12-21 dated October 3, 2012 clearly delineates renewable energy as an ECM, and provides guidance on the conditions for which the capital costs of these projects “may be scored and obligated on an annual basis during the term of the contract,” rather than be fully scored “upfront” to the first year of the contract, which is standard practice under OMB Circular A-11.<sup>33</sup>

Budget scoring creates a critical decision point for installation managers pursuing energy upgrades or renewable energy generation. The impact of scoring on appropriated budgets understandably creates the need to limit large upfront capital investment. Exemptions are based upon a project assuming operating lease characteristics, which were foundational in the creation of the financing structure for the ESPC at the White Sands Missile Range.

Opposition to the feasibility of using ESPCs in this way has pointed to the fact that, in order for on-site renewable energy generation to be scored annually, the federal government “must retain title to the installed capital goods at the conclusion of the contract,”<sup>34</sup> suggesting an obstacle to utilization of tax-efficient structures that require private ownership of the renewable assets. We are

confident that existing tax-efficient capital structures can accommodate OMB’s guidance, allowing ESPCs to remain useful tools for delivering on-site renewable energy projects for DoD installations.

## ESPC AND LIFE-CYCLE COST EFFECTIVENESS

Cost is integral to the evaluation of these projects. “Life-Cycle Cost Effectiveness” is a requirement of project review, and yet those costs can often be misconstrued or not evaluated in their entirety. In fact, taxable public-private partnership structures have long been perceived as a more costly form of project delivery to the federal sector than traditional appropriations. Such evaluations are often myopic and focused primarily on interest-rate analyses that do not include the entire savings that can be achieved over project lifespan. Fundamental to a thorough cost analysis is the value attributed to the transfer of risks to the parties best suited to effectively deal with them, as well as efficiencies gained in design, construction terms, pricing, and long-term operations and maintenance performed by the private sector.

In the survey conducted by the GAO in their latest report, military service energy managers who have used the ESPC authority for renewable projects have cited the many “benefits of having a developer construct and manage the project and having established relationships with local utility companies.”<sup>35</sup> Similarly for White Sands, the advantages of utilizing a preeminent ESCO, such as SGT, were numerous: (1) the advanced design of a single-access tracker ground-mounted system that maximized efficiency and provided a higher rate of return to the Army; (2) the assurance of a proven developer with the capability to coordinate subcontractors, deliveries, and logistics among a highly secure environment that required specialized

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<sup>32</sup> *Renewable Energy Project Financing: Improved Guidance and Information Sharing Need for DoD Project-Level Officials*.

<sup>33</sup> OMB M-12-21 Memorandum for Heads of Executive Departments and Agencies: Addendum to OMB Memorandum M-98-13 on Federal Use of Energy Savings Performance Contracts (ESPCs) and Utility Energy Services Contracts (UESCs), 1

<sup>34</sup> OMB M-12-21 Memorandum for Heads of Executive Departments and Agencies: Addendum to OMB Memorandum M-

98-13 on Federal Use of Energy Savings Performance Contracts (ESPCs) and Utility Energy Services Contracts (UESCs), 4

<sup>35</sup> United State Government Accountability Office Report to Congressional Committees. *Renewable Energy Project Financing: Improved Guidance and Information Sharing Needed for DOD Project-Level Officials*

clearances; (3) unexploded ordnance orientations and briefings; (4) and environmental assessments, construction, performance, and savings guarantees all backed by an investment-grade balance sheet.

## CONCLUSION

Renewable energy is well-suited for procurement under the ESPC authority, which enables private ownership of assets. Since the economic feasibility of renewable energy relies upon the monetization of federal tax incentives, private ownership of renewable energy assets is often required in order to fully utilize tax benefits and create a viable and economic project. Due to the innovative third-party financing structure, the White Sands ESPC benefited from a \$4.8 million 1603 Cash Grant award, which could not have been received by a federal agency owner. In addition, the mature market for ESPC investors allowed for access to billions of dollars of private-sector capital. This past year, White Sands Missile Range will have achieved 10.8% of its renewable energy goal, up from just 0.5% before the project, meeting the federal mandate by more than 3%.

Although a contingent of installations have successfully deployed renewable energy under ESPCs, others have been reluctant based upon continued confusion over ESPC authority guidelines and a limited evaluation of the overall value of private financing, including the transfer of long-term rights to private-sector partners. However, as exemplified by the White Sands ESPC, the integration of renewable energy under an ESA within the existing ESPC contract authority is a viable structure that is not only life-cycle cost-effective, but also effective in transferring risks to the private sector, and therefore should remain an invaluable financing tool for DoD installation managers as they evaluate and determine future procurement models.

## ABOUT THE AUTHORS

*Peter Flynn is Executive Vice President of Bostonia Partners LLC, the investment banking arm of Bostonia Group, where he focuses on financing energy efficiency, distributed generation, and renewable energy projects as well as on project finance, securitization, and public private partnerships. At Bostonia, Mr. Flynn has served as lead banker for over \$2 billion in federal, municipal, and commercial energy efficiency and renewable energy projects. Mr. Flynn is a frequent speaker on topics related to the financing of energy and real estate projects and is co-author of the article "Unique Issues Associated with Financing Federal Government Receivables" that appeared in The Journal of Structured Finance. Mr. Flynn is a member of the American Council on Renewable Energy's (ACORE) Advisory Committee on National Defense and Security.*

*Joseph Bonnin serves as Director, Pricing & Structured Finance, for Siemens Government Technologies, Inc. and supports Siemens Federal Business vertical market and Siemens Alternative Energy group. He has over 20 years of experience arranging, structuring, and financing projects within the energy industry. Specifically, Joe has structured ESA, PPA, and ESPC transactions and traditional non-recourse project financing structures to fund electricity generation plants, primarily renewable and alternatively-fueled energy projects (landfill gas, gasification, wind, and solar projects). He has financed the largest U.S. Government wind project (NNSA) and the largest solar project for the U.S. Army as well as a waste-to-energy facility for the DoD. Joe has participated in closing over \$700 million in financings with approximately \$550 million in asset backed and project finance transactions.*