



The Trusted Integrator for Sustainable Solutions

RENEWABLE AND CLEAN ENERGY SERVICES

Energy Efficiency

Demand-Side Energy Management

Renewable Energy Solutions



an employee-owned company

➤ Energy Solutions for a Sustainable Future

More than 50 years ago, Weston Solutions, Inc., (WESTON®) began with a mission to provide sustainable solutions to our clients, and we've been building on that foundation ever since. Our clients are no exception to the world's increasing focus on energy, and we offer and apply technologies that maximize value in terms of energy efficiency, long-term savings, and environmental considerations.

We have more than 1,800 experienced professionals in over 60 locations across the globe, working for federal, state, municipal, commercial, and international clients. We offer multi-discipline teams to meet our customers' emerging energy needs, long-term sustainability goals, and current and future operations/mission objectives. WESTON brings an integrated, sustainable, and technology-neutral approach that provides the best-fit solutions for our clients' needs and objectives.

➤ Energy Audits



A first phase of an energy management program begins with an energy audit to assess opportunities for demand reduction, improved efficiency, and data management, and to evaluate

opportunities to optimize energy use. WESTON has performed audits for clients as diverse as the U.S. Air Force, the U.S. Postal Service, wastewater treatment authorities, and commercial food processing companies.

Representative Project:

Energy Instrumentation Review/Audit—Contadina Foods, Woodland, CA

WESTON performed a two-phase energy savings and conservation project for a major food processor. In the first phase, WESTON conducted a detailed review of existing energy-monitoring instrumentation and provided specifications for additional metering to adequately define all energy streams in the plant. In the second phase, we performed a detailed energy savings study, including all utility services, production units, and support facilities. WESTON provided 20 energy savings options as part of this study. Total savings were in excess of \$360,000 per year, or a 17% overall reduction, of which \$41,000 was available at no capital cost and the remainder had an average payback period of less than 1 year.

WESTON's sustainability offerings include an integrated approach to energy management across facilities and new energy production, including:

- Energy efficiency and integrated lifecycle sustainability audits
- Design and construction of practical energy-management solutions for facilities
- Assessments and comprehensive feasibility studies for renewable and alternative energy (solar, wind, biomass, and geothermal)
- Fully integrated development of renewable energy plants, including financing, design, construction and operations



➤ Implementation of Energy Management Solutions



After conservation or efficiency opportunities are identified, the next step is to design and implement the solution. These solutions can include advanced metering, lighting upgrades, HVAC or

boiler improvements, control system upgrades, or implementation of green roof technologies. WESTON is working with clients around the country to design, build, or oversee the construction of such solutions.

Representative Projects:

Energy Conservation Investment Programs—Hanscom Air Force Base, MA, and Hickam Air Force Base, HI

WESTON is providing fully integrated services for the engineering, design, construction and automation of existing system for the replacement, reconfiguration, and installation of a new economizer system for Hanscom's Central Boiler Plant. The project will ensure the base can meet mission-critical steam generation, and will capture lost efficiency to maximize production and energy savings and eliminate waste. WESTON is also providing design-build services to upgrade mission-critical lighting and controls at Hickam to maximize energy efficiency while maintaining and improving lighting levels.

► Feasibility Studies for Renewable Energy Projects

The ability to assess the renewable energy potential of a facility or installation and the relative benefits, costs, and potential savings to a client—without pre-judging a particular technology—is critical to establishing the economic viability of a project. This requires an understanding of the inherent risks and benefits of each technology as well as the financial drivers of the renewable energy market. WESTON does this assessment for our clients, as well as for our own developmental projects. We have worked with numerous clients on such studies, including DOD installations, commercial power plants, wastewater treatment plants, landfills, and industrial projects. Evaluation results are often presented not only to our clients, but potential third-party investors and other stakeholders.

Representative Project:

Renewable Energy Assessment— Tribal Property, AZ

As part of a brownfields assessment project with the Army Corps of Engineers and U.S. EPA, WESTON is conducting a solar power feasibility assessment for a tribally owned, 33-acre brownfield property. The analysis will include the development of a conceptual solar PV system configuration and cost, power production estimate, local electrical infrastructure study, and review of incentives and financing options.



WESTON can help site and develop renewable energy sources that can change your energy profile.

► Development of Renewable Energy Projects

Once a feasibility study confirms the viability of a renewable energy project, WESTON can integrate and develop all aspects from the ground up, starting with siting, regulatory interface, and power purchase negotiations, and then moving to design, construction, commissioning, and operations. We have also assisted in the conversion of existing plants to alternative fuel sources and implemented systems to convert landfill gas to a source of renewable energy. WESTON can also bring private financing for projects, which can allow our clients to move forward on renewable energy projects without the need for up-front capital.

Representative Project:

Solar Power Solution—City of Newark (NJ)

WESTON, a local business, and the City of Newark partnered to develop a solar power project to help “green” the city’s operations in which the city purchases power generated by a new photovoltaic system under a Power Purchase Agreement. The 30,000-ft² PV system is rated at ~185 kilowatts peak power AC. WESTON implemented and managed the development, design, and construction of the system, as well as the financing, so that no capital outlay was required from the city. A City Hall kiosk provides real-time system information.



Our integrated services can take your renewable energy project from feasibility study through modeling and permitting, to installation, start-up, and ongoing monitoring.

► Benefits of a Comprehensive Energy Solution from WESTON

- Lower energy costs
- Reduced greenhouse gas (GHG) emissions
- Technology solutions that maximize available energy resources and economic incentives
- Improved energy security through less reliance on the grid
- Mitigated business and financial risk arising from volatile energy costs
- A source of sustainable energy
- A more sustainable short- and long-term future
- Multiple development paths, including private and flexible financing options
- Reduced cost, shortened schedule, and reduced risk associated with project execution through integration of service offerings with no project handoffs

► Additional Sample Projects

Energy Conservation Evaluation—Capital City Products Company, Columbus, OH: WESTON evaluated three coal-fired stoker boilers, totaling 150,000 pounds per hour of steam generation, and auxiliary equipment, and recommended energy conservation measures that could save \$112,000 per year in energy expenses with a payback period between 0.3 and 2.5 years.

Energy Conservation and Investment Program (ECIP)—U.S. Air Force Academy, Colorado Springs, CO: Combining evaluation with design, WESTON worked on four ECIP tasks, including optimizing the HVAC systems in six buildings, retrofitting lighting at ten buildings, and designing a biomass system to burn digester gas for the wastewater treatment plant.



▼ *Payback period and ease of implementation are two of the factors WESTON uses in recommending energy conservation measures.*

Improved Process Efficiency Design to Reduce Power Use—Delaware County Regional Water Quality Control Authority, Chester, PA: WESTON determined that the aeration system at a wastewater treatment plant could be replaced with a new fine-bubble diffuser, which uses significantly less energy. Because aerators are major power consumers at wastewater treatment plants, the diffuser system WESTON is designing and permitting is estimated to save \$30,000 per month.

Cogeneration System Evaluation—Union Carbide, Yabucca, Puerto Rico: Building on a prior conservation study, WESTON completed a cost/benefit comparison for 20 different schemes for a 1.5–2.5 MW generation system using waste heat from fume incinerators. The optimal system required a capital investment of \$5.5 million, with a payback period of 4.2 years which could be reduced by increased production made possible by the additional power.

Renewable Energy (Biomass and Waste-to-Energy) Feasibility Study—Eglin Air Force Base, FL: WESTON is performing a biomass and waste-to-renewable-energy study to evaluate existing energy usage and determine the feasibility of using biomass energy sources to comply with federal, DOD, and Air Force goals via on-site, renewable energy generation, along with the reduction of fossil fuel use and GHG emissions. The integrated feasibility study was initiated with a “Design Charrette” to allow for input from the diverse group of stakeholders and to facilitate the screening of a wide range of potential renewable energy projects.



▼ *Wastewater treatment plants and landfills can become energy assets by tapping digester gases and landfill gas as alternative energy sources.*

Landfill Gas-to-Energy Design/Build—City of Macon Public Works Department, Macon, GA: WESTON designed and built a gas extraction system to supply fuel for resale to an off-site brick manufacturer via a pipeline. Project components also included emissions monitoring, permit applications, and other compliance-related services.

Projects Currently Under Development

- Three 10–20 MW biomass cogeneration projects for three separate DOD installations using locally sourced, sustainable feedstocks
- 200 KW solar array for a progressive New Jersey city looking to reduce its carbon footprint and start on a path toward greater energy sustainability and price stability
- Two wind resource studies using both tower and SODAR data, one for an east coast DOD facility and one for a west coast redeveloped former military base, to begin the wind power development process

For More Information, Contact:

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