Worthington Energy Innovations engages “Green Machine Protocol” to guarantee energy efficiency (Columbus, Ohio)

“I wanted to get myself postured in to a niche under thermodynamics that I saw as wide open frontier in the wild wild west of America.”

In the Beginning: With help from a Small Business Administration loan and collateral from his wife’s wedding ring, Tom Kiser began Professional Supply Inc. (PSI) in 1979. From humble beginnings – Kiser began engineering for the company in an auto shop that had been abandoned after catching fire – emerged a passion for reframing how people think about energy consumption. In 2012, PSI became Worthington Energy Innovations when it teamed up with Worthington Industries, a global company headquartered in Columbus, Ohio.

“I think one of the things that differentiates us is innovation by accountability. We want to be accountable to [our clients].”

The Accountability Factor: One of Worthington Energy Innovations’ chief services is an “Energy Services Agreement,” which enables customers to achieve their energy goals without any capital expenditures through Worthington’s promise of energy efficiency-guaranteed profit over a period of time. Kiser identifies this sort of accountability as a primary factor in his client’s motivations to pursue energy efficiency strategies. Or in his words, they require “guaranteed performance and economics via monitor[ing] and verification.”

Guaranteeing Energy Efficiency Success: When it comes to developing an energy efficiency “playbook” for a particular client, Worthington Energy Innovations first seeks to understand the current state of the systems within a customer’s facility as well as what a customer hopes to achieve from the project. Establishing trust and credibility through teamwork is the basis for the flow of services provided to clients looking to preserve their bottom line with reduced energy costs.

✓ Worthington Energy Innovations first works toward establishing credibility with the client as a team, stressing the importance of involving not just the engineers on the factory, but involving the executives of the company in discussions on the vision of the company and how a new energy strategy fits in to that vision.
✓ Next, Worthington establishes a baseline picture of the current state of a customer’s energy use by conducting a Feasibility Study. The study examines the people and processes at the company and how they function together to design unique innovations to implement and guarantee for the firm.
✓ After unveiling unique concept designs (Energy Conservation Measures) to the client, Worthington moves into its next role by overseeing the installation of the new system and providing monitoring and verification to sustain that system’s design intent as the firm works
towards its energy efficiency goals. Monitoring and verification allows Worthington to stay with customers throughout the life of an energy project to ensure optimal performance, savings and lifecycle. i

**Years of Project Success:** One of Worthington Energy Innovation’s longstanding Energy Services Agreements has been with the Ford Motor Company. Since work began in the 1980s, Worthington Energy Innovations (then PSI) has worked to retrofit more than 20 Ford facilities, including replacing steam power generation systems with direct-fire, and closed hot-water loops. ii Additionally, PSI has eliminated the need for ductwork and steam power generation systems at more than a dozen Ford facilities through use of its patented building pressurization systems.

Through these innovations, PSI has helped deliver total reductions of 54% in natural gas and 46% in electricity use across its energy systems at Ford facilities. The strategies employed at these facilities have also reduced Ford’s greenhouse gas emissions (e.g., CO₂ emissions and NOₓ emissions) by a total of 257,000 tons and 124 tons respectively. iii

The first project with Ford took place at Ford’s Sandusky, Ohio location. By replacing coal-fired boilers with natural gas, the project delivered approximately $1.7 million in annual energy savings with a two-year return on investment (ROI) on project costs. Additionally, indoor air quality at the plant, as measured by the United Auto Workers Union, improved by at least 300%. iv

PSI’s projects with Goodyear® and General Motors® and also yielded these companies considerable energy savings and in some cases, accelerated ROI. Additionally, PSI has worked with Shearer’s Foods INC., in Massillon, Ohio, helping it devise waste heat recovery systems. Shearer’s Foods INC. is now the world’s first LEED certified snack food manufacturing plant. v

**The Future of Worthington Energy Innovations:** With the recent acquisition of PSI by Worthington Industries, Kiser hopes to grow the capabilities of the company by expanding skill capacity, product offerings and satellite offices. The mission of PSI however, “Energy needed should be equal to or greater than energy purchased,” will remain unchanged. Kiser credits “thinking outside the box,” instead of relying solely on best practices, to allow Worthington to embrace new and innovative strategies for reducing energy usage. In fact, it’s this creativity that Kiser points to as unique about his company.

“I think accounting treatment of energy efficiency is really the fundamental platform needed to be agreed on by the finance people... and I think Ohio could wind up being a leadership [role] in this.”
**Energy Efficiency Forecasting:** With new energy-related technological innovations on the horizon, Kiser stresses the need for the State of Ohio to embrace such innovation. Specifically, he identifies advancements involving wireless technology, leasing, and waste heat recovery as potential areas of promise. Additionally, he foresees the concept of life-cycle cost accounting, as it relates to conceptualizing and constructing a building, as a growing area for energy efficiency services.

“Information is powerful…and [that] power enables you to the make the decisions for the journey.

**Document EN over EP, ASAP:**” As “America’s energy coach,” Tom Kiser offers a basic piece of advice for anyone interested in pursuing energy efficiency strategies for their home or business based on a design philosophy which he refers to as the “Green Machine Protocol”: “Document the energy that you need relative to the energy that you purchase. Until you know energy needed versus energy purchased,” he says, “you don’t even understand your thumbprint.”


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-Rebecca Cochran, Strategic Communications Research Associate, Ohio University Voinovich School (October 2012)