SHOWCASE PROJECT: POLARIS INDUSTRIES, INC. — 50001 READY

SOLUTION OVERVIEW

Polaris Industries, headquartered in Medina, Minnesota, manufactures a diverse range of powersport vehicles, such as snowmobiles, motorcycles, and all-terrain vehicles (ATVs). Their customers around the globe include the recreational, commercial, and military sectors. Dedicated to helping outdoor enthusiasts enjoy their passions, the company understands the importance of environmental protection and sustainable manufacturing practices.

Huntsville, Alabama is home to the newest and largest of Polaris’ ten U.S. manufacturing facilities. Its 950,000-square-foot plant sits on a campus of more than 500 acres. The plant’s 1,350 employees produce off-road and on-road vehicles. Vehicle manufacturing and assembly activities account for about 85% of the space, while the remainder is used for materials storage and shipping activities. On the manufacturing side, various departments cut, bend, weld, and powder-coat raw tubes, while other departments perform injection molding and operate an auto-grade paint facility. The components come together along a central assembly line.

In 2019, Huntsville’s management worked to create a stable and structured environment. In keeping with the plant’s focus on sustainability, these efforts included participating in EnergyRight Solutions, a strategic energy management (SEM) initiative administered by the Tennessee Valley Authority (TVA) and Athens Utilities. EnergyRight Solutions established a cohort of nine plants, whose staff share helpful insights and a friendly rivalry, breeding an enthusiasm for energy savings. The Polaris plant first learned about the U.S. Department of Energy’s (DOE’s) 50001 Ready program through a TVA cohort consultant from the Strategic Energy Group (SEG). Huntsville committed to the 50001 Ready program and achieved its first 50001 Ready designation in 2019.

Laying that groundwork served Huntsville well in 2020, when the plant experienced 26% growth in consumer demand for Polaris’ products. In addition to the health and safety challenges caused by COVID-19, the plant has had to operate three shifts per day to meet the increased demand. Fortunately, Huntsville had already established an energy management system and identified many low-cost energy efficiency opportunities and was therefore well-positioned to continue efforts to reduce energy and related costs. In 2020—in the midst of a pandemic—the Huntsville plant saw new successes and re-attested to 50001 Ready.

LOCATION

Huntsville, Alabama

SOLUTIONS

As a newer facility, Huntsville saw an opportunity to lead Polaris toward greater sustainability by applying lean manufacturing practices. As a lean manufacturer, the facility seeks to avoid all forms
of waste or inefficiency. Management looks at the full gamut of waste, not just inventory or specific processing steps. Being lean with all the company’s resources helps make processes efficient and effective so Polaris can produce high-quality products at low cost.

Energy efficiency ties directly into this lean focus, especially as energy is one of the manufacturer’s greatest expenditures. With the encouragement of the TVA’s SEM initiative, the plant began to improve operations by factoring energy considerations into daily tasks. Committed to continuously improving performance and reducing operating costs, Huntsville enlisted the support of the TVA and SEG in 2017 to embark on their SEM journey. In 2018, the energy team selected DOE’s 50001 Ready Navigator as their central tool to guide them through this process.

By implementing an energy management system, the Huntsville plant saved at least 2.6 million kWh in the first 12 months, largely through simple operational changes. In 2020, the facility achieved total energy savings of nearly 3.56 million kWh, as well as cost savings of $863,211, including utility rebates. In 2021, even recovering from the pandemic and production increases, the facility has achieved total energy savings of nearly 546,926 kWh, as well as cost savings of $272,207.34, including utility rebates.

“Participating in 50001 Ready helped Polaris Huntsville to lead the way in exceeding our energy reduction goals and reduce our carbon footprint for the world. We highly recommend participation in this program to any company striving for energy conservation and reduction.”

—Brian Vick, EHSS Manager, Polaris

Implementing a 50001 Ready Energy Management System

- **Establish a skilled and dedicated energy team**: The Huntsville team comprised nine people, who brought together diverse expertise in environmental issues, health and safety, financing, engineering, facilities, and operations. Team members used the 50001 Ready Navigator tool to guide them in identifying and carrying out tasks, which were delegated to members with relevant knowledge and experience. SEG provided guidance as needed.

- **Incorporate energy management into existing tools and processes**: The plant had already implemented a value improvement process for lean manufacturing, using a computerized system to monitor improvement areas in productivity, safety, and environment. The energy team added an Energy Reduction category, embedding energy efficiency into the process objectives.

- **Start saving by picking the low-hanging fruit**: Not every company can afford to invest in major retrofits. As the energy team implemented the energy management system, team members focused on a number of low to no-cost opportunities, such as installing air compressor controls, leak detectors (argon and compressed air), submetering, variable speed fans, and insulation. The facility implemented operational changes with that resulted in savings. For example, the team applied an automation sequence to shut down welding process dust collectors when not in use, saving $153,000 per year, and optimized paint oven utilization (e.g., shortening the start-up and process duration) to save $34,000 per year. The projects identified through the energy management system led to significant energy and cost savings and pollutant reductions, underscoring energy efficiency’s key role in achieving the
company’s mission.

- **Consider energy efficiency in procurement:** As part of the 50001 Ready process, the team found that energy efficiency was not formally included in all engineering specifications and purchasing decisions. Procurement protocols were revised to ensure energy-efficient options were on the table.

- **Build cultural awareness:** The facility posted signs showing potential savings when unused equipment is turned off: “If this machine is not shut down, 100 kWh of energy will be wasted over the next eight hours.” The visual cues make potential energy savings tangible for equipment operators.

**Benefits**

The plant has made tremendous strides in reducing its greenhouse gas emissions, having already surpassed its 2022 target of a 5% reduction in its first year implementing 50001 Ready. These successes have proven the efficacy of energy management, both to plant management and to the larger company. The energy team is able to calculate costs and benefits of future projects, as well as payback periods, and has received funding from Polaris’ headquarters to move forward with several actions.

Furthermore, Huntsville is now sharing the successful strategies with other Polaris plants. 50001 Ready has led the energy team to develop documents for traceability, objectives, and target action items, resulting in institutionalized knowledge that can be shared with others.

**Key Takeaways**

50001 Ready provided the Huntsville plant with a structured and rigorous approach to energy management. The Navigator tool provided a simple entrance point that enabled the energy team to see a clear path forward and make quick strides, building from the more basic tasks toward a more structured system. The tool helped the team identify gaps, brainstorm solutions to close those gaps, and chart a path forward to meet plant objectives. If Huntsville chooses to attain certification to the global ISO 50001 standard, working toward 50001 Ready has paved the way.

Huntsville is now seen as the flagship for energy management corporate-wide. Once the facility can put the pandemic in the rearview mirror, Huntsville—and Polaris—can move forward with larger, more complex projects, having already done the foundational work and built the business case for bigger efforts.

“The DOE 50001 Ready Navigator is a real-time functioning tool that will help any company keep focus on energy reduction goals. Polaris found that its navigation structure was very user-friendly. This initiative can only be achieved with transparent communication and a great team like we have here.”

—Brian Vick, EHSS Manager, Polaris

**OTHER BENEFITS**

For more information, visit [https://betterbuildingssolutioncenter.energy.gov](https://betterbuildingssolutioncenter.energy.gov)
Polaris Huntsville Strategic Energy Management (SEM) team from the left: Mckinley James – Plant Director, Brian Vick – EHSS Manager, Zach Pharez – Lean VIP Specialist, Bryan Ward – Facilities Engineer, Joseph Jones – EHSS Specialist. Photo courtesy of Craig Boudreaux, Polaris Huntsville.