New GE Power Technology Innovation Center Will Showcase Increased Efficiency, Reduced Emissions of Coal-Fired Steam Power Plants
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- Birchwood Power Facility in Virginia to be Transformed into Global Steam Plant Innovation Center with Most Modern and Efficient Hardware and Software, including GE's Predix*-based suite of Digital Power Plant software solutions
- With coal forecast to remain the world's #2 fuel source through 2030, Center Will Demonstrate How Technology Can Increase Efficiency and Availability, and Decrease Emissions of Coal-fired Steam Plants
- GE's Power Services to Assume Responsibility for Operations & Maintenance at the Center

GE Power (NYSE:GE) today announced plans to convert its 242 MW coal-fired Birchwood Power facility in King George, VA, into a Steam Plant Services Innovation Center. The Center, which provides sufficient electricity to power more than 240,000 homes, is to become a showcase for how the latest GE technologies can greatly increase the efficiency and flexibility of coal-fired steam power plants, while also reducing emissions.

The new showcase will combine GE's full suite of Digital Power Plant for Steam software solutions with expert operations, and align with GE's global Powering Efficiency Center of Excellent (COE) initiative. The CoE provides customers with total plant solutions to upgrade their existing generation equipment.

According to the U.S. Energy Information Administration (EIA), coal plants generate 41 percent of the world's electricity and will remain the second-largest energy source worldwide until at least 2030. In the U.S., coal will likely provide 20% of electricity for the next 20 years and in China and India, where coal fuels more than 70% of electricity generation today, coal is likely to remain a primary fuel source for even longer. While many utilities and power producers around the world have committed to a lower carbon energy future, clean coal solutions are clearly needed to balance growing energy demand, low plant load factors and environmental impact.

"Transitioning the Birchwood power facility into a GE Steam Plant Services Innovation Center aligns with the Powering Efficiency Center of Excellence (COE) initiative and builds on GE's commitment to modernizing the steam power industry," said Paul McElhinney, president & chief executive officer of GE's Power Services. "We are investing in this innovation center to not only better the plant itself but to illustrate to the world what gains are possible in this sector when you combine digital and hardware solutions with technical know how."

Birchwood Power facility is jointly owned by GE Power Services and J-Power USA Development Co., Ltd. On May 1st, GE's Power Services assumed the Operations and Maintenance (O&M) services contract at the plant. As part of its suite of services, GE is installing its advanced digital solutions which will equip plant O&M technicians at this site with new opportunities for process and productivity improvements by leveraging machine and sensor data, analytics and boiler optimization technologies across the entire plant. By making improvements from the fuel supply, within the boiler, and across the balance of plant, there is potential to incrementally impact efficiency, flexibility, availability, while reducing emissions, outage and maintenance costs. Installation is planned for August 2017.

Introduced in 2016, GE Power's Digital Power Plant for Steam software, addresses machine and fleet performance. Asset Performance Management (APM) software continuously monitors steam plant equipment health, enabling operations teams to make decisions that enhance plant performance. Benefits include reducing unplanned downtime up to five percent, reducing false positive outage alerts up to 75 percent, and reducing operations and maintenance costs by up to 25 percent.

Operations Optimization software, which includes boiler optimization software, manages complex boiler interactions to improve boiler operations performance and consistency. Benefits include: improvements in heat rates, reduced tube failures, and slagging, as well as reduced NOx and CO2 emissions. For every point of efficiency gained using digital solutions, CO2 emissions are lowered by two percentage points. This

improvement in efficiency alone can reduce fuel consumption by 67,000 tons of coal per year with the same output for a 1,000MW plant.

“We are seeing rapid adoption of lower carbon electricity generation the world over. However, the evolution to a lower emission energy future is still likely to take a generation or more, “said Ganesh Bell, Chief Digital Officer, GE Power. “In the interim, the Innovation Center at Birchwood will enable us to demonstrate how to make coal a dramatically more efficient, flexible and lower emission fuel source through the use of advanced engineering, software and analytics.”

GE’s Powering Efficiency CoE initiative aims to help customers with coal-fired power plants optimize their operations, improve plant efficiency and reduce emissions with the combination of advanced hardware and digital offerings. The CoE aligns with GE’s recent Ecomagination study that found CO2 emissions from the world’s steam fleet can be reduced by 11 percent when existing hardware and software solutions are fully applied. This reduction in CO2 is equivalent to removing 250,000,000 U.S. cars from the road.

In addition to creating the Innovation Center in Virgina, Power Services will also bring its more than 50 years of combined global plant O&M experience to Birchwood. GE operates more than 30 power plants around the world, managing 15 GW of electricity generating capacity.

“Combining the knowledge of the Original Equipment Manufacturer with our global operating experience across generation types and other manufacturers gives us a unique perspective and capabilities,” said Terry Schoenborn, general manager, Operations & Maintenance, GE’s Power Services. “We look forward to putting these capabilities on full display at Birchwood and see this as a great opportunity to show the industry the true power of combining our industry-leading people and technologies.”

About GE

GE (NYSE: GE) is the world’s Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive and predictive. GE is organized around a global exchange of knowledge, the "GE Store," through which each business shares and accesses the same technology, markets, structure and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology and scale, GE delivers better outcomes for customers by speaking the language of industry. www.ge.com

About GE Power

GE Power is a world leader in power generation with deep domain expertise to help customers deliver electricity from a wide spectrum of fuel sources. We are transforming the electricity industry with the digital power plant, the world’s largest and most efficient gas turbine, full balance of plant, upgrade and service solutions as well as our data-leveraging software. Our innovative technologies and digital offerings help make power more affordable, reliable, accessible and sustainable.

For more information, visit the company's website at www.gepower.com.

About GE’s Power Services Business

GE’s Power Services business, headquartered in Baden, Switzerland, delivers world-class solutions for our customers across total plant assets and their operational lifetimes. This organization supports 2,800+ customers worldwide with an installed base of 28,000+ power generation assets, which includes other OEMs, and taps into the Industrial Internet to improve the performance of our solutions over the entire life cycle through the power of software and big data analytics.

*Predix is a trademark of General Electric Company

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