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CHIEF TECHNICAL PARTNERS ANNOUNCE THE SUCCESSFUL COMPLETION OF THE DEPARTMENT OF ENERGY'S (DOE) FORT COLLINS RENEWABLE AND DISTRIBUTED SYSTEMS INTEGRATION (RDSI) PROJECT

All RDSI Project Goals Were Met, Setting the Stage for Implementation of the [FortZED](#) Zero Energy District

FORT COLLINS, Colo., Sept. 4, 2012—The lead technical partners of Fort Collins' Renewable and Distributed Systems Integration (RDSI) project—also known as the [FortZED Jumpstart Project](#)—announced today that the project, which concluded in July, performed among the nation's top, peer-rated RDSI projects. The multi-year endeavor was funded in part by the Department of Energy (DOE) and, in 2010, became one of nine RDSI projects across the country. At its completion, the Fort Collins project was among the highest performing of all RDSI projects in complexity and outcomes. The Fort Collins RDSI successfully integrated and controlled a large number of distributed-generation and demand-side resources, reducing electrical-grid-system peak load demand by an unprecedented 20 percent within the FortZED district, showcasing the technical and collaborative skill of project participants.

Chief technical partners, [Spirae](#), [Brendle Group](#) and [Woodward, Inc.](#), met or exceeded their project objectives. As noted, the project demonstrated a greater than 20 percent peak load reduction on the utility feeders, well exceeding the 15 percent goal.

[Spirae](#), the project's technical lead, deployed its BlueFin™ active distribution management software platform that controls distributed energy resources (DER) in a distribution grid to support high levels of renewable and distributed energy. Drawing on their comprehensive domain expertise, Spirae provided the technical leadership for the partner sites and customized the RDSI BlueFin implementation with peak load management functionality. The resulting BlueFin deployment coordinated and managed the DER of five site partners to successfully reduce peak load.

[Brendle Group](#) led the effort to identify demand-side resources. These sustained efforts resulted in an increase in partner site generation from 550 kW (10 percent) at the project's inception to 749 kW (18 percent) by the demonstration period. Brendle Group also conducted an engineering analysis quantifying the economic and environmental impacts of individual assets and the system as a whole.

[Woodward](#) provided hardware, applications engineering and the needed services to equip a distributed power generation resource in the district to burn renewable bio-gas fuel as well as to properly connect eight generation resources at site partners to the power grid. Woodward equipped the generation resources with complete control, monitoring and protection systems, and also enabled these resources to communicate with the BlueFin DER management platform.

The RDSI project was a success due to a diverse public-private partnership created in 2007 that has been working to develop a net-zero energy district within the City of Fort Collins—the [FortZED](#) district. Within the project grid, RDSI technical partners orchestrated the dispatch of over 4000 kW of distributed generation as well as 760 kW of dispatchable load reduction. Steve Catanach, Fort Collins Utilities Manager noted, "The RDSI project demonstrated the capability of a smart grid, using dispatchable renewable energy and demand response, to reduce peak demand. We demonstrated that distributed energy resources can be added to a grid while maintaining power quality and reliability."

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While the technical partners and [Fort Collins Utilities](#) focused on peak load control and infrastructure, RDSI's site and community participants focused on different goals—goals that reflected their organizational interests. During RDSI operation, site partners generated and shared power, cut their power demand—or both. Site partners included the City of Fort Collins Operations, Colorado State University (CSU) Facilities Management, Larimer County Facilities, New Belgium Brewing Company and the InteGrid Lab at CSU's Engines & Energy Conversion Lab. Site partner goals required that, while contributing to peak load reduction, neither their operations nor energy expenses were negatively affected. Community participants sought sustainability through greater adoption of renewable energy and energy conservation. Community goals required that while promoting "green" energy practices, power remained reliable and affordable. Bruce Hendee, Fort Collins Sustainability Officer, observed, "The RDSI project's goals were quite diverse. The technical, community and site goals needed to be balanced so that all participants could meet their objectives. RDSI did just that. All parties successfully met their goals. What that means for us going forward is that we're poised to implement FortZED as a net-zero energy district having tested, worked out and balanced the diverse requirements."

Fort Collins RDSI participants included:

Site partners	City of Fort Collins Operations New Belgium Brewing Company InteGrid Lab at CSU's Engines & Energy Conversion Lab Larimer County Facilities Colorado State University (CSU) Facilities Management	Community partners	FortZED District City of Fort Collins Fort Collins' UniverCity Connections District Fort Collins Downtown Development Authority Colorado Governor's Energy Office Fort Collins Community Foundation Colorado Clean Energy Cluster
Technology partners	Brendle Group, Inc. Spirae, Inc., lead Woodward, Inc. Advanced Energy Industries, Inc. Eaton Corporation	R&D partners	Fort Collins Utilities CSU Engineering Department Brendle Group, Inc. Spirae, Inc., lead Woodward, Inc. Eaton Corporation InteGrid Lab at CSU's Engines & Energy Conversion Lab
National partner	U.S. Department of Energy (DOE)		

For more information on the Fort Collins RDSI project, see the [FortZED](#) website.

About Brendle Group

Brendle Group is an engineering consulting firm providing energy, climate, water, sustainability management, economic development and sustainable design solutions for clients nationwide. Now in its sixteenth year of business, Brendle Group has completed over 200 projects for over 100 clients across the sectors of local government, energy and water utilities, K-12 and higher education, the ski and tourism industries and leading-edge companies. For more information, visit www.brendlegroup.com

About Spirae, Inc.

Spirae, based in Fort Collins, Colo., provides control and analysis solutions to the utility industry for managing large quantities of distributed energy resources on the power system. Distributed energy resources can take many forms, including wind generation, solar photovoltaic, electric vehicles, controllable loads, and smaller conventional generation located at consumer sites. Spirae's simulation and BlueFin™ control solutions are designed to facilitate maximum contribution and participation from these resources while maintaining reliable and efficient operation of the power system. Spirae also co-owns and operates the InteGrid Test and Development Lab in collaboration with Colorado State University for the purposes of advanced grid simulation and research. For more information about Spirae, please visit www.spirae.com and www.integridlab.com

About Woodward, Inc.

Woodward is an independent designer, manufacturer and service provider of control solutions for the aerospace and energy markets. Our aerospace systems and components optimize the performance of fixed wing and rotorcraft platforms in the commercial, business and military aircraft, ground vehicles and other equipment. Our energy-related systems and components enhance the performance of industrial gas and steam turbines, reciprocating engines, compressors, wind turbines, electrical grids and other energy-related industrial equipment. The company's innovative fluid energy, combustion control, electrical energy, and motion control systems help customers offer cleaner, more reliable and more efficient equipment. Our customers include leading original equipment manufacturers and end users of their products. Woodward is headquartered in Fort Collins, Colo., USA. Visit our website at www.woodward.com