Supporting a Long-Term Grid Modernization Initiative for a Canada Utility

EXECUTIVE SUMMARY
TEKsystems delivered high-quality consultants with niche skill sets to support a massive, multiyear smart grid initiative in a remote region in Canada.

Skill Sets Supported
• Smart grid technology

Client Profile
The client is a large engineering firm that delivers innovative electric and infrastructure solutions within a variety of sectors, including power generation and energy, healthcare and industrial. In energy and utilities, the client provides solutions, systems and software for smart grid and energy automation. TEKsystems has delivered IT support to this client for approximately 20 years.

Situation
A large power utility organization in Canada had a hydro energy generating station that was responsible for supplying clean, low-cost power to approximately 12 percent of homes and businesses in the local province. However, this hydro energy generating station was gradually starting to malfunction and it would become inoperable by 2027. In preparation for when the generation station would become inoperable, the utility required third-party support to determine how to compensate for the loss of energy production from the station and shifting energy demands from the province. The utility engaged our client, a large engineering firm.

To address the impending power supply gap that would be taking place over the next decade, the utility organization would implement a massive smart grid transformation. Within the energy industry, utilities are increasingly modernizing their power grid technology because it enables energy production from more sustainable sources, accommodates fluctuating customer demands and drives efficiencies. This approach would help ensure the province had a reliable, clean and efficient source of energy when the existing generating station eventually failed.

This smart grid transformation is one of the largest in scope in North America and would require 10 years to complete. Additionally, the power utility was situated in a remote city with a population of about 56,000. Because the location was so remote, providing a team of qualified consultants to support this transformation proved difficult for the engineering firm. They required a staff augmentation partner with the expertise required to effectively source and retain the right team for the job. The partner of choice would have to overcome several key challenges:

1. A project of this scale and impact had never been done before
2. The talent was not available locally; the partner would need to find qualified candidates who were interested in relocating
3. Rework of work along the critical path

Ultimately, the team would support the utility’s strategy of reducing and shifting in-province demand for electricity that would defer the need for new investments in generation, and optimize the system to capture operating and fuel savings.
Solution

Having 20 years of experience partnering with TEKsystems, the client chose us to support this massive transformation. They trusted that TEKsystems was the only potential partner that understood the staffing requirements and could consistently find talent that met their needs. With a dedicated Energy Services offering, and more than 30 years of experience in the IT staffing and services space, the client was confident in our ability to address the major challenge this long-term initiative posed: the remote location of the work. TEKsystems follows a proprietary Staffing Quality Process® that ensures we are able to source and retain even the most niche skill sets, and this engagement would be no different.

As part of this process, TEKsystems would need to develop a compelling employee value proposition (EVP) to attract the right-fit consultants. Given the size and scale of this long-term opportunity, combined with the fact that the end client is a fully integrated utility and one of the largest in Canada, we were searching for qualified smart grid talent with very niche skill sets and interests. The end client’s technology was very antiquated and they planned to fully modernize it. Our EVP, what attracted our consultants to this initiative, was the opportunity to gain exposure to every aspect of the smart grid project for a fully integrated utility. We sought energy consultants who wanted to earn rigorous smart grid experience, as this project offered the chance to get involved in a massive smart grid project at the ground level.

TEKsystems successfully retained four smart grid consultants—who had to relocate and/or commute from a different province each work week—for the role of smart grid management consultants. This team has supported the project since its inception approximately one year ago.

Benefits

TEKsystems’ team of smart grid management consultants is responsible for helping the utility reduce demand in terms of voltage. The hydro generating station that is deteriorating currently generates approximately 800 megawatts. The end client plans to replace 200 megawatts with solar power. The smart grid will need to be able to compensate for the remaining 600 megawatts of energy by 2023.

Since beginning the project in the fall of 2014, the consultant team we provided has had no turnover. In fact, the TEKsystems consultants are currently the only revenue-generating consultants dedicated to this transformation initiative. Our team continues working toward the end goal of reducing demand and shifting it away from the failing hydro generating station.

For example, one way our consultants have reduced demand is through a smart water heater project. Through behavior and usage, the smart water heater learns how much hot water each consumer needs and ensures only enough hot water is kept. It heats during off-peak hours to reduce the amount of power required to heat the water.

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The TEKsystems consultants are also supporting the development of an integrated load management virtual power plant that will help manage customer demand and further work to achieve emission and reduction targets. Because commercial buildings have significant thermal storage capacity, an estimated 20 commercial and industrial facilities will be under the control of the virtual power plant—with the goal to shift demand during peak winter heating periods and optimize the overall electrical system within the province.

As the end client, the utility, and our client, the engineering firm, continue exploring ways to reduce and shift demand over the course of this multiyear comprehensive smart grid program, TEKsystems will be prepared to accommodate evolving staffing needs.