It Takes a Village to Build a Microgrid, and the Village Needs a 'Mayor'

July 20, 2020
By Erik Svanholm

***S&C Electric's** Erik Svanholm explores the human element of building a microgrid, and what goes into advanced microgrid design.*

Much has been written about the vast technical progress in advanced microgrid design and the avenues to finance these critical systems. Understanding the complexities of design and finance is critical to a successful microgrid project, but there is another key aspect of a successful project that hasn't received nearly as much attention: the human element. While it's common to seek advice on matters of technology and finance when pursuing a microgrid, getting help through stakeholder participation is rare, but it shouldn't be. Engaging a skilled microgrid facilitator (the "village mayor") to sort and consolidate stakeholder interests can be a linchpin in bringing microgrid projects to fruition.

Just as microgrids work by combining a broad array of different equipment types, making the project happen requires aligning the interests of a wide variety of stakeholders. In other words, it takes a village to bring microgrid projects to life. That village can often benefit from a "mayor" to collect and consolidate stakeholder perspectives.

Erik Svanholm, vice president, non-wires alternatives for S&C Electric

This effort to build a microgrid is especially important early in the project-development process because the most important question to answer when planning a microgrid is, "What do you want the microgrid to do?" When five different stakeholders are asked this question, there likely will be five different answers. Even the CEO and facilities manager of an industrial campus may have diverging opinions on which buildings are most critical to operations, even though they both represent "the same customer."

When the desired performance outcomes are clearly articulated and agreed upon in early concept development, the subsequent steps run much more smoothly. Technical and budgetary requirements can be well-defined, truly comparable design and construction bids can be evaluated, and the best project integrator can be confidently selected. By taking stakeholder perspectives into account from the beginning, the project will have the best chance of being delivered on time, on budget, and meeting all the customer's expectations.

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> *– Erik Svanholm, S&C Electric*

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Stakeholder groups exist both within the microgrid customer's organization and around it. Microgrid customers often have their own customers who may seek to influence the system design. The community surrounding the microgrid's location will have meaningful perspectives that should be considered.

When a university is pursuing a microgrid, for example, it can expect student groups to have strong opinions about its sustainability. Neighbors near the microgrid site will be interested in how they might be positively affected by the system's resilience or negatively affected by emissions, noise, or visual pollution.

In addition, when considering key stakeholders, don't forget the local electric utility. Regardless of who will ultimately own the microgrid, a utility is almost always a key stakeholder, and its needs and preferences can have a major impact on the feasibility, cost, and timeline of a project.

With so many contributing stakeholders for one microgrid project, it's easy to see steering these diverse groups to coalesce around an agreed-upon scope for a microgrid can be daunting. Fortunately, microgrid customers don't have to manage this diplomacy alone. Experienced consultants and microgrid providers can assist as the skilled microgrid facilitator during this early stage and serve as a catalyst for ideas, a referee for conflicting goals, and a lightning rod for concerns. The right consultant or provider can serve as the "mayor your village" needs to ensure everyone's voice is heard and the final microgrid design will meet a wide range of goals.

The work of a skilled microgrid facilitator can be commissioned as a freestanding effort, before specific system designs are contemplated. The work can even include educational components and a canvassing of stakeholder viewpoints. Often at the outset of microgrid projects there is considerable distance between perception and reality around the true tradeoffs between system cost and functionality. Closing these gaps early will help unify expectations.

When considering a skilled microgrid facilitator in the development of a project, several important attributes are necessary. Most important is a strong track record of successfully delivering microgrid projects to happy customers. Given the number of stakeholders involved, it is also critical that the selected skilled microgrid facilitator has excellent broad-based communication skills. Choosing someone with experience working with utilities is also critical because interaction with the grid is a fundamental consideration of almost every microgrid. Utilities have unique concerns around grid safety and stability, which means the stakeholder facilitator must "speak utility."

Truth be told, the human element–the village of stakeholders–is the first, last, and most important factor in any microgrid project. Before diving into the technology and the financing, it is important for anyone pursuing a microgrid to engage a knowledgeable, creative, and experienced facilitator to help ensure maximum stakeholder support and set the stage for a successful microgrid project from the very beginning.