Microgrids

February 2020

Microgrids have become a popular topic in the electricity industry over the last several years with local demonstration projects developed here in Washington State. A microgrid is a small network of electricity users with a local source of supply that is usually attached to a centralized national grid but is able to function independently.

Resiliency is typically the business case for the creation of a microgrid. Entities that construct microgrids usually face reliability challenges and the microgrid assists in reducing outage minutes. Other times, microgrids are constructed to provide energy support during natural disasters. A microgrid may be able to provide electricity to emergency responders when the broader grid is down. Most microgrid projects include both a generating resource and a storage resource, which can allow for around-the-clock electricity for a certain duration of time despite the state of the broader grid. Economics do not typically drive Microgrid projects given that efficiencies are gained by larger scale production, transmission, and distribution. Microgrids by, definition, scale down to a small geographic footprint.

Clark Public Utilities' strong history of providing reliable electricity make it more likely that a microgrid is constructed as an emergency response resource, rather than an asset aimed to reduce local outages. Though microgrids could reduce local outages in rural areas, the costs for such redundancy would be very high. Microgrid projects for densely populated areas like downtown Vancouver, nearer to the most vulnerable population concentrations and other emergency service agencies make sense for disaster relief. In the case of a catastrophe, the microgrid may be able to provide electrical output for phone and appliance charging, emergency communications, medical aid, temporary shelters, and other important functions.

Several siting challenges exist in developing a microgrid project in Clark County, WA. Available land, permitting, interconnection with the existing grid, maintenance, security, and control communications contribute to these challenges.

A microgrid could be an important feature for the citizens of Clark County, but such an undertaking by CPU would require a serious commitment. Management and Staff at Clark Public Utilities will continue to research and keep abreast of the microgrid trends. Staff will work at the direction of the Board to study specific microgrids as opportunities warrant.