

**Ariel Esposito, Navigant**

**Presentation Title:** Unique Challenges with Cost-Effectiveness Evaluation of Non-Wires Alternatives

**Abstract:** Electric utilities across North America are pursuing pilot and full scale non-wires alternative projects (NWA) as an innovative alternative to traditional T&D upgrades. Utilities need to continue to develop innovative solutions with increased customer engagement and environmental benefits, at a lower cost to traditional infrastructure projects.

This paper presents the methods used and considerations needed for an effective and accurate assessment of the NWA cost-effectiveness. This paper discusses advantages and disadvantages of various methods for evaluating cost-effectiveness of NWA projects, identifies best practices, discusses methods employed and results for one project in the Northwest. The utility project targets a group of substations and includes energy efficiency and demand response resources for residential and C&I customers as well as grid scale battery storage.

Since there are overlaps with system-wide energy efficiency program, there are unique challenges associated with identifying incremental benefits and costs directly attributable to the program. First, assessing benefits of the NWA program requires separating incremental participation from the baseline participation that would have occurred without the NWA program. Additional challenges arise when quantifying the benefit and cost streams included in the cost tests. First, a local T&D deferral benefit needs to be determined for the NWA program separate from the average benefit of T&D deferrals to avoid double counting benefits. Second, many of the benefit streams included in the cost-effectiveness evaluation are time varying and the NWA model needs to be able to account for this in the overall analysis. These various methods to include time varying benefits have advantages and disadvantages. For example, some methods can significantly increase model run time and others can lead to reduced accuracy. For further development of NWAs, it is important to address the unique challenges of evaluating the cost-effectiveness to inform and better design more effective NWA programs.