


## 2018 Survey Results

# Distributed Energy Resources: One Year Later



**T**he numerous grid stability, sustainability and economic benefits enabled by integrating distributed energy resources (DERs) onto our power grids have been well-documented. As the financial, regulatory and technical costs continue to drop, the rapid growth of DERs has become one of the most disruptive forces ever experienced by the utility industry.

Navigant Research forecasts that installed DER capacity will triple between now and 2025, growing from 124 GW to 373 GW worldwide. The energy world is quickly transitioning from one where generation follows load to one where load follows generation – a model that both reduces the volatility of the grid and allows the existing grid to deliver more energy.

Indeed, the topic of DERs – and how to manage them – dominated both the educational sessions and the exhibit floor at this year's DistribuTECH conference. IHS Markit analysts noted in their coverage of the event that right from the initial kickoff session, "The clear theme of software and distributed energy resources emerged and would dominate the rest of the show."

Given the importance of the role played by DER management systems and their ubiquitous inevitability, Enbala undertook a survey OF for the second year in a row at January's San Antonio event, with a focus on attendee opinions on the future of DERs, the challenges they impose and utility plans for leveraging distributed energy assets moving forward.

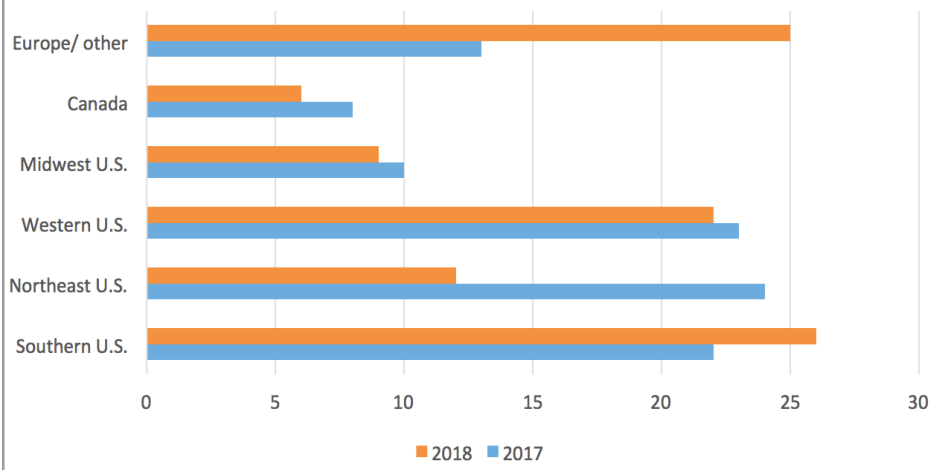
### Who Responded?

During this year's DistribuTECH event, Enbala surveyed 108 attendees. This compares to 107 responses from 2017, so the numbers are very similar. The demographics, however, had some important differences.

Utilities responding to this year's survey were from IOUs (28%), co-ops (8%), municipal utilities or public power authorities (30%) and energy service providers (34%). This differs somewhat from the 2017 survey in that there was a higher percentage of co-ops and munis responding this year and somewhat fewer IOUs (28% versus 49% for 2017). It is not known how the demographics of the survey respondents maps to the overall attendee breakdown.

Some 50% of this year's respondents were from utilities with over a million customers, whereas last year 74% were from larger utilities. This difference might be attributed to the fact that fewer people from the Northeast region of the U.S. participated in the survey this year, while a greater number of utilities outside the U.S. responded. This year, attendees hailed from the Southern U.S. (26% versus 22% in 2017), the Northeast (12% versus 24% last year), the Western U.S. (22% versus 23% last year), the Midwest U.S. (9% versus 10% last year), Canada (6% this year versus 8% in 2017) and Europe/other (25% versus 13% last year).

### Percent Respondents 2017 vs 2018

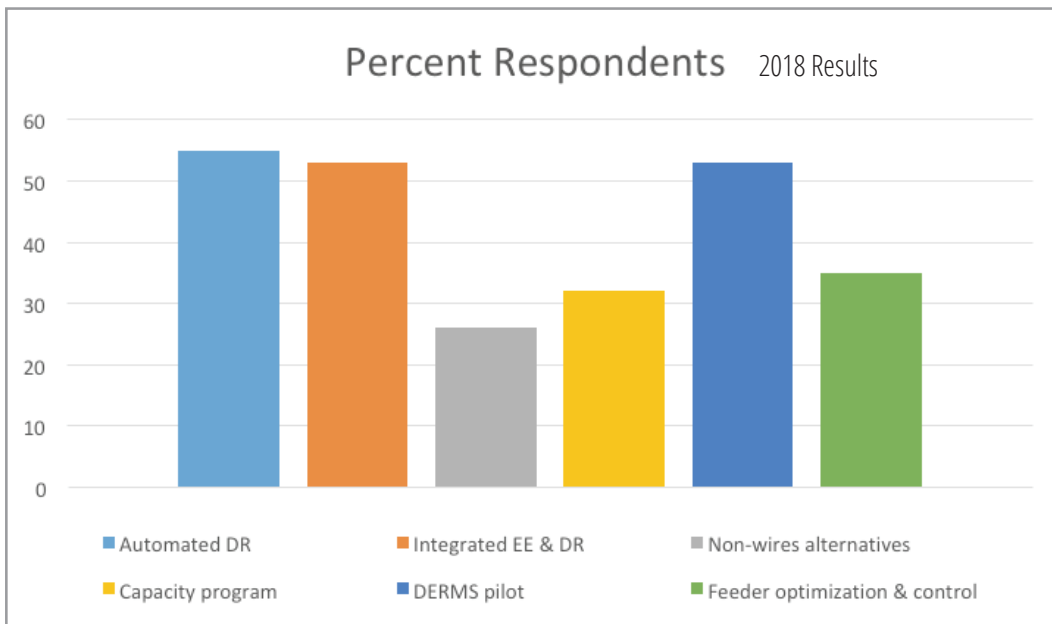


### Who's Doing What?

Some 25% of the respondents this year indicated that their organization had a Distributed Energy Resource Management Systems (DERMS) or Virtual Power Plant (VPP) platform in place, compared to 18% last year, and more than half who don't already have a platform said they'd be implementing one in the next 36 months.

Among those who have already deployed the technology, the breakdown for 2018 shows a fairly even split between automated demand response, integrated energy efficiency (EE) and DR, and DERMS pilots. This aligns with 2017 results except that the percentage of DERMS pilots has increased slightly over the past year, while the integrated EE and DR numbers have decreased slightly as well.

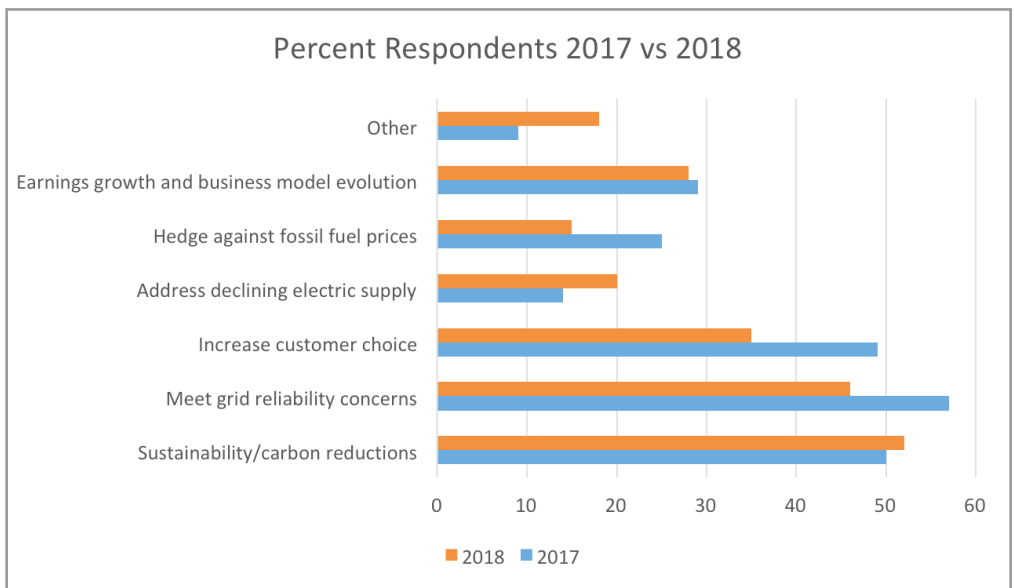
### Percent Respondents 2018 Results



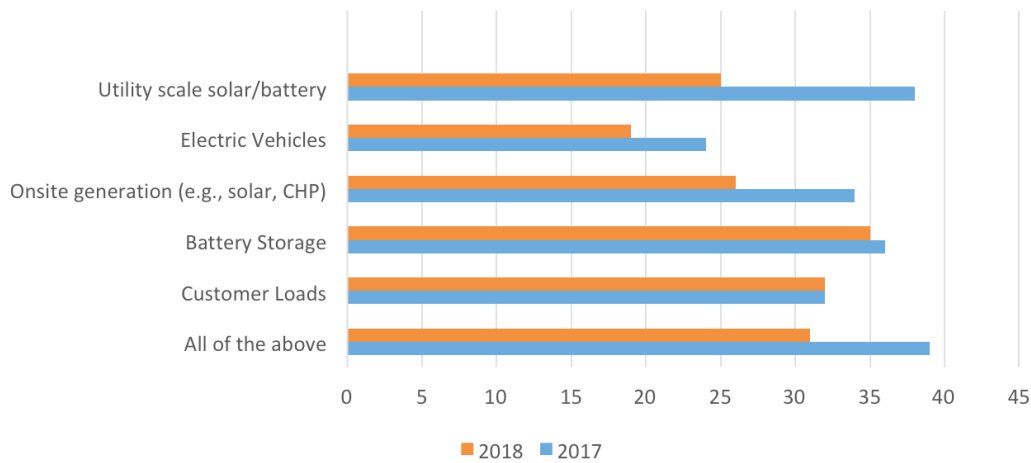
### Investment Goals

Different utilities have different reasons and business drivers for investing in distributed energy assets, but this year, 52% of those responding said sustainability was their #1 goal, followed by 46% who focused on meeting grid reliability objectives. This is consistent with last year, though 2017 respondents placed slightly more emphasis on meeting grid reliability goals than sustainability. Comparisons in the other business driver categories are reflected in this chart:

### Percent Respondents 2017 vs 2018



Percent Respondents 2017 vs 2018

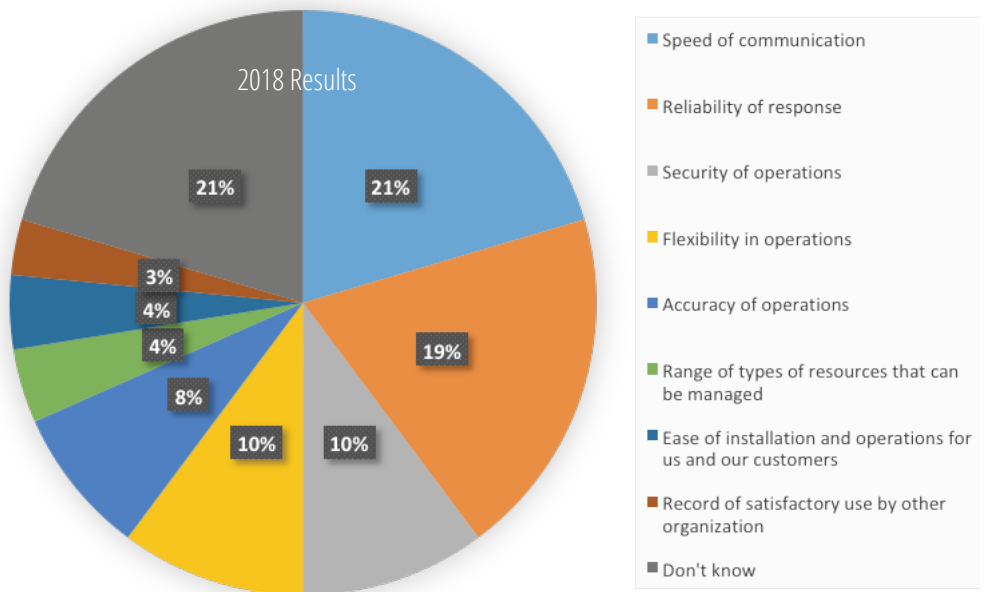


**A Look at the DER Playing Field**

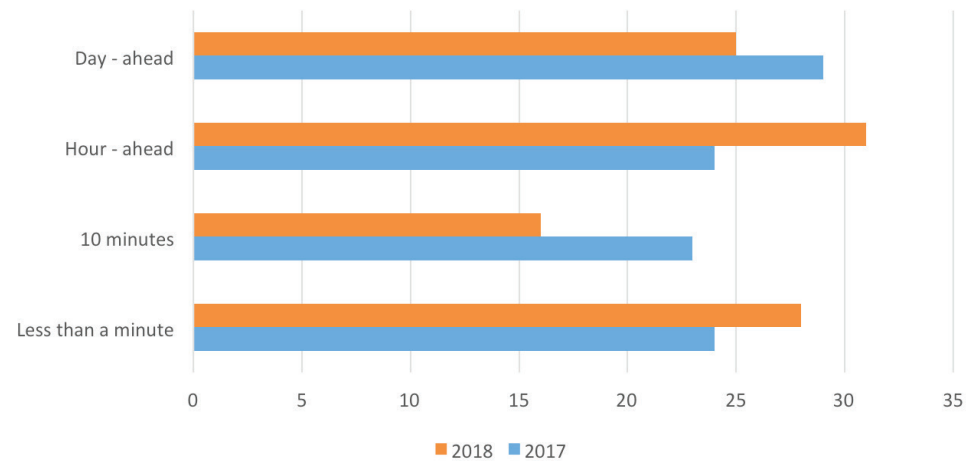
Batteries, customer load, solar, EV... the DER playing field is a large one. When asked what distributed energy assets their companies plan to connect and control, many said they intend to leverage all the DER types listed in the survey, while others indicated various combinations of the options that were listed. Note that responses add up to more than 100%, because respondents were asked to select all the options that applied to their scenario.

**How do you Measure Success?**

As utilities become increasingly sophisticated about distributed energy management, the criteria for system selection become more exacting. When asked for opinions on the number one most important benefit that a distributed energy resource management system or VPP should provide, speed and reliability were neck in neck for the most-often selected option, with 21% selecting speed and 19% selecting reliability. Next were security and flexibility at 10% each and accuracy at 8%. This aligns very closely to 2017 results, with no appreciable difference from one year to the next.

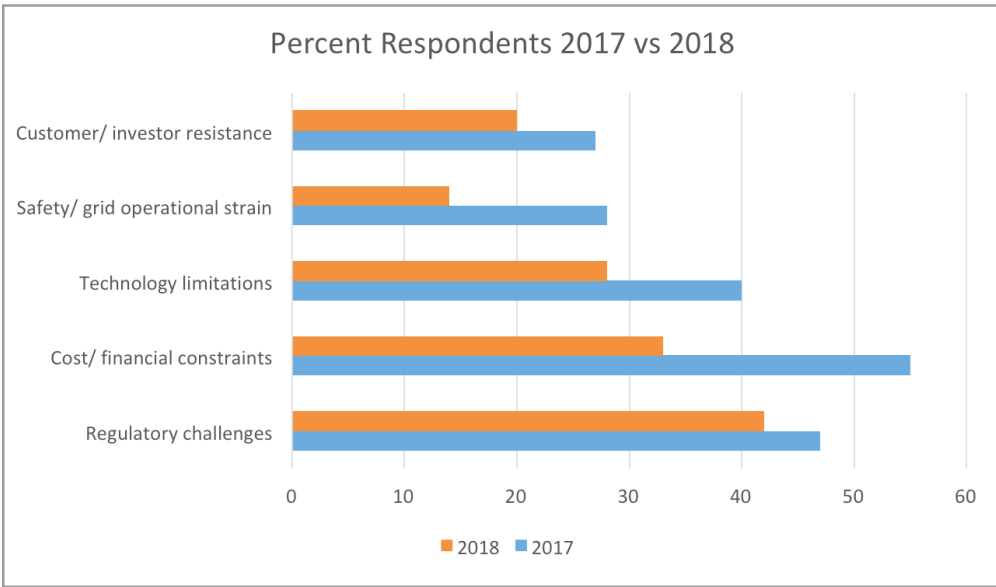


Percent Respondents 2017 vs 2018



**How Fast is Fast Enough?**

When asked to clarify the quickest response speeds utilities felt that they needed from DERs for effective load control, 28% said they required faster than one-minute responses. Some 16% said they needed 10-minute response speeds, 31% said they needed hour-ahead and 25% said they required day-ahead responses.



**What's Standing in the Way?**

While more and more utilities are leveraging – or planning to leverage – DERs as a key part of their energy mix, there are nevertheless challenges that are holding back or delaying the speed of deployment. When asked to indicate which challenges are faced by utilities when it comes to DER deployment, this year – as last – cost and regulatory challenges topped the list of obstacles. Regulatory issues led the 2018 issues list, but primarily because cost decreased dramatically as a concern when compared to 2017, as did technology obstacles.

**The Utility Path Forward**

The foundation for a reliable, sustainable energy future rests on more distributed and intelligent networks of power. VPPs and DERMS are the software platforms that provide the means to this end, enabling both the producers and consumers of energy to harness the power of distributed energy. The results of the survey at DistribuTECH demonstrate a few key things. One, utilities are continuing to embrace DERs and their positive role in reshaping the world’s power grids as they shift away from a traditional reliance on centralized coal-fired and nuclear power plants to a mix of distributed energy assets. Two, utilities are looking far beyond simple demand response when it comes to how they are leveraging DERs, and as they expand their horizons, the criteria for effective management of these resources are becoming more sophisticated. Three, there is a perception that the challenges to deployment are lessening.

