

# E Source 2018 Utility DER Strategy Benchmark

## Key Findings and Trends

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Web conference



**E Source**

# Agenda

**Study background**

Key findings

5 noteworthy trends

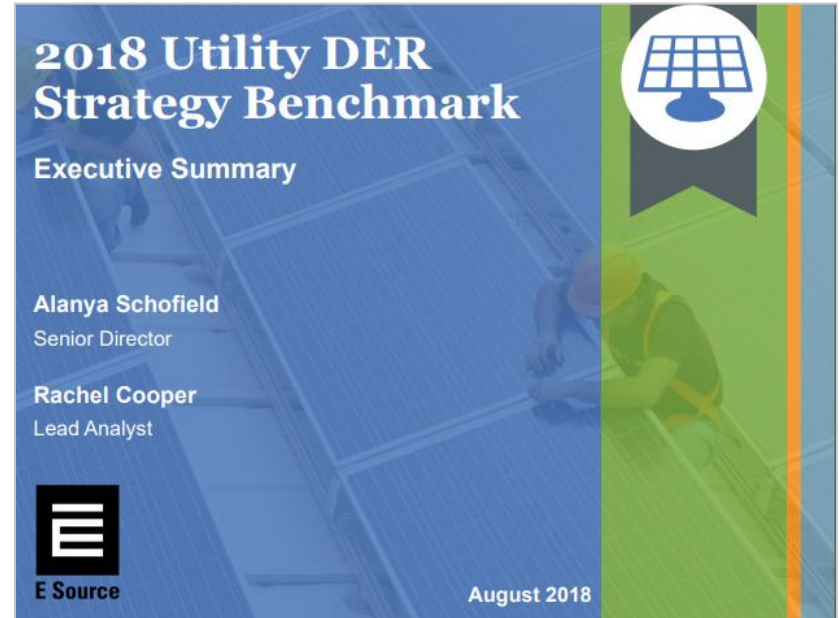
Recommendations

Upcoming events and useful resource

# Benchmark overview

## Topics covered in the 2018 study:

- Definition of distributed energy resources (DERs)
- Anticipated types and magnitude of impacts
- Drivers and barriers
- Role and business model implications
- Pilots and programs
- Education and communication efforts
- Rate changes
- Organizational structures and budgets
- Innovation-related efforts



[www.esource.com/der-strategy](http://www.esource.com/der-strategy)

# Participant demographics



Multiple jurisdictions: 25

Single jurisdiction: 11



Investor-owned utility: 21

Public power, crown corporation, or municipal utility: 14

Cooperative utility: 1



Vertically integrated utility: 20

Transmission and distribution utility: 6

Distribution utility: 4

Other: 6



Electric only: 25

Dual fuel: 11

# Participating utilities



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# Key findings

- DER definitions are becoming more inclusive
- Utilities are anticipating significant impacts resulting from DERs
- Utilities are most concerned about the effects of behind-the-meter (BTM) solar, battery storage, and solar plus storage
- DER-related strategies are becoming more cohesive and coordinated
- Utilities are focusing efforts on programs, regulatory/policy, and impact analysis

# DER definitions are becoming more inclusive

Technologies included in utility definition of DERs	2017 (n = 28 utilities) (%)	2018 (n = 36 utilities) (%)
Rooftop or behind-the-meter solar	89	97
Behind-the-meter battery storage	71	89
Distribution-grid battery storage	64	89
Community solar	82	86
Electric vehicles	71	83
Electric vehicle charging infrastructure	64	83
Demand response	75	75
Microgrids	64	75
Energy efficiency	71	72
Utility-scale solar	61	67
Smart home devices or facility energy management systems	54	58
Smart inverters	NA	56
Green-pricing programs or green tariffs	NA	53
Combined heat and power	50	50
Fuel cells or microturbines	57	NA

**Base:** n varies by year. **Question S2\_1:** How does your utility define DERs for the purpose of DER strategy work? In other words, what is included in or a consideration in your utility's current and planned DER strategy work? Select all that apply. **Note:** NA = not asked.

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# And including less-traditional technologies and applications

Technologies included in utility definition of DERs	2018 (n = 36) (%)
Electrification	44
Grid-interactive water heaters	42
Thermal storage	36
Customer use of third-party power purchase agreements	33
Community-choice aggregation	22

**Base:** n = 36 utilities. **Question S2\_1:** How does your utility define DERs for the purpose of DER strategy work? In other words, what is included in or a consideration in your utility's current and planned DER strategy work? Select all that apply.

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# Anticipated impacts of DERs are shifting slightly

## 2017 (n = 28 utilities)

- 1 Customer satisfaction
- 2 Load
- 3 Grid operations
- 4 Rates
- 5 Revenue

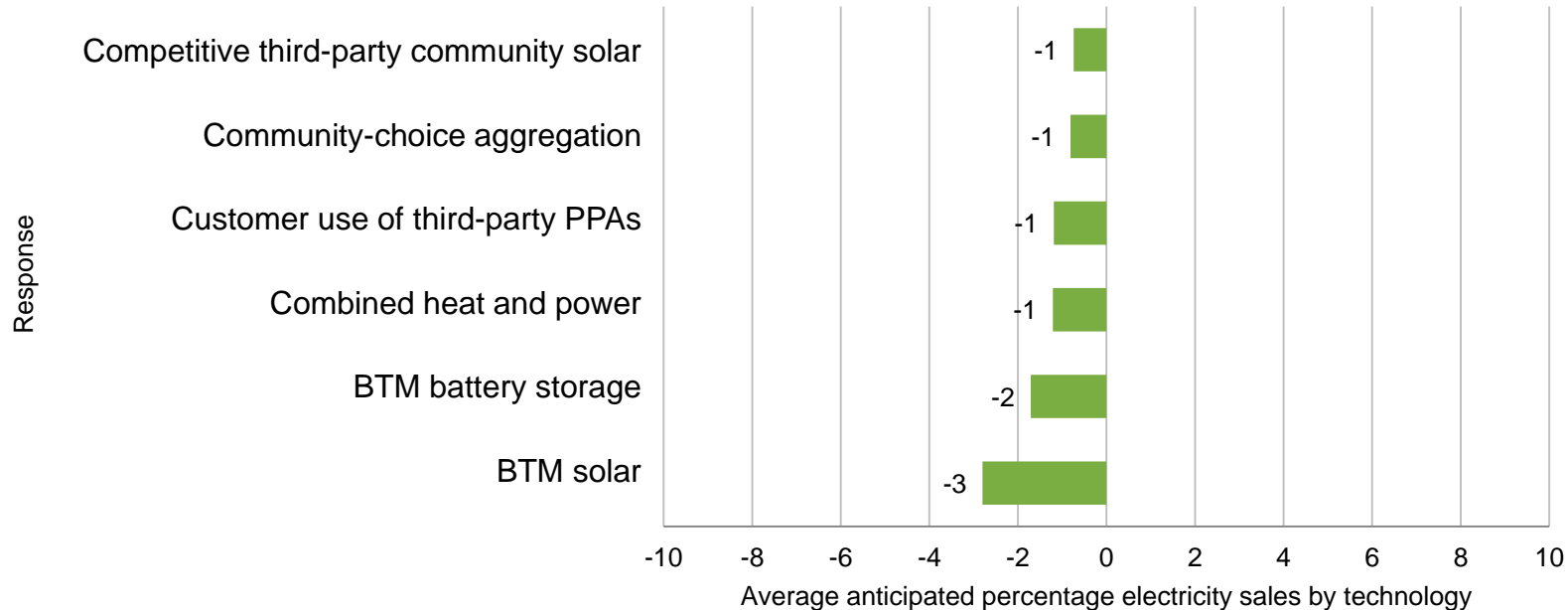
## 2018 (n = 36 utilities)

- 1 Role/business model
- 2 Customer satisfaction
- 3 Grid operations
- 4 Rates
- 5 Revenue

**Base:** n varies by year. **2017 Question S3\_1:** For each of these DER technology categories, please indicate if your utility anticipates noticeable impacts related to that specific technology in the next 7 years. Select all impacts that apply for each technology category. **2018 S3\_1:** For each type of possible impact, what is the anticipated overall magnitude of the impact on your utility related to all DER technologies in the next 7 years?

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DER Strategy Benchmark)

# Utilities are concerned about losses from DER technologies



**Base:** n = 36 utilities. **Question S3\_3:** What percentage of total electricity sales reduction, if any, does your utility anticipate in the next 7 years related to the following technology options? **Notes:** BTM = behind the meter; PPA = power purchase agreement.

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# Utilities are most concerned about BTM solar, storage, and solar plus storage

## Residential

- 1 Solar plus storage
- 2 BTM solar
- 3 Electric vehicles
- 4 BTM battery storage

## Nonresidential

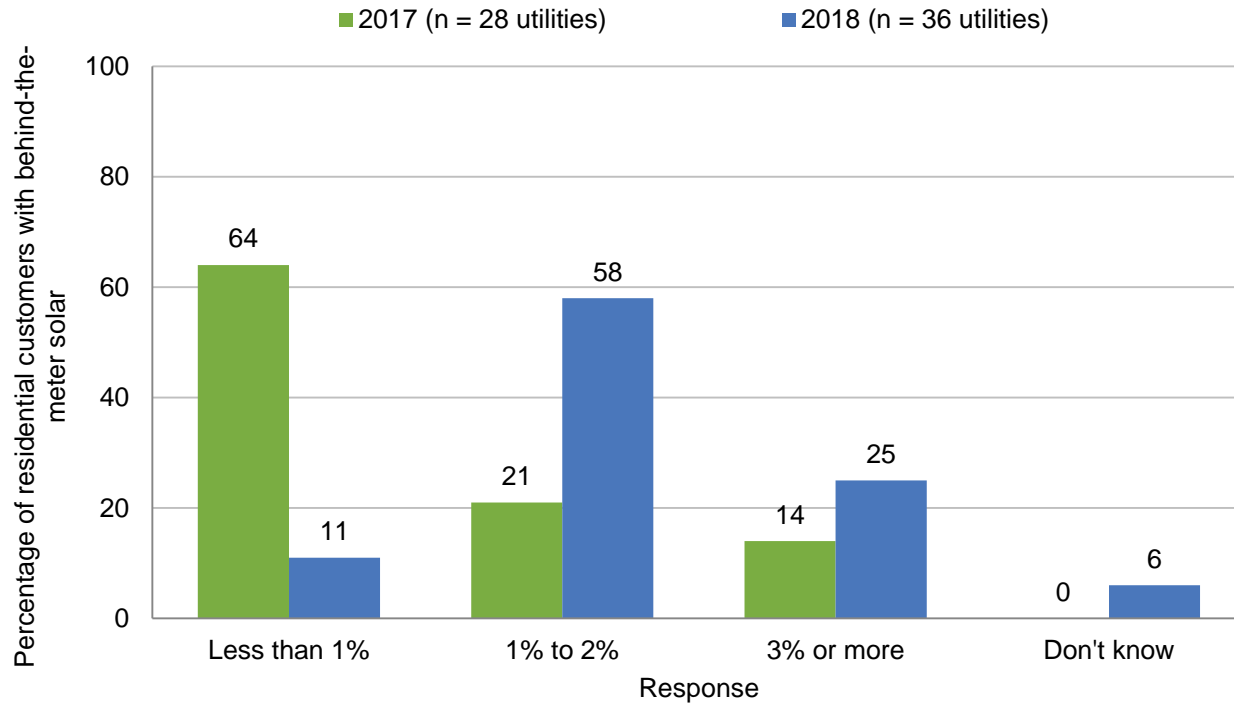
- 1 BTM battery storage
- 2 BTM solar
- 3 Solar plus storage
- 4 Customer use of third-party PPAs
- 5 Microgrids

**Base:** n = 36 utilities. **Question S3\_12:** What technologies are you most concerned about in terms of overall impact in the next 7 years for residential customers? Select all that apply. **S3\_13:** What technologies are you most concerned about in terms of overall impact in the next 7 years for nonresidential customers? Select all that apply.

**Notes:** BTM = behind the meter; PPA = power purchase agreement.

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# Utilities are reporting higher rates of solar adoption



**Base:** n varies by year. **Question S1\_10:** What percentage of your residential customers currently have behind-the-meter solar? **Note:** Percentages may not sum to 100% due to rounding.

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# Strategies are becoming more cohesive and coordinated

	2017 (n = 28 utilities)	2018 (n = 36 utilities)
Developing and implementing a few independent efforts	64%	36%
Developing and implementing a cohesive, coordinated strategy	36%	58%
Refining an already implemented, robust, and integrated strategy	0%	6%

**Base:** n varies by year. **Question S2\_2:** Select the option that best reflects your utility's status in developing and implementing a DER strategy. We are currently ...

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# Utility efforts are focusing on programs, policy, and impact analysis



**Base:** n = 36 utilities. **Question S2\_3:** What elements are included in your utility's current or planned DER strategy efforts, or would you like to include? Select all that apply. **Note:** Percentages reflect respondents who select "currently included or planned."

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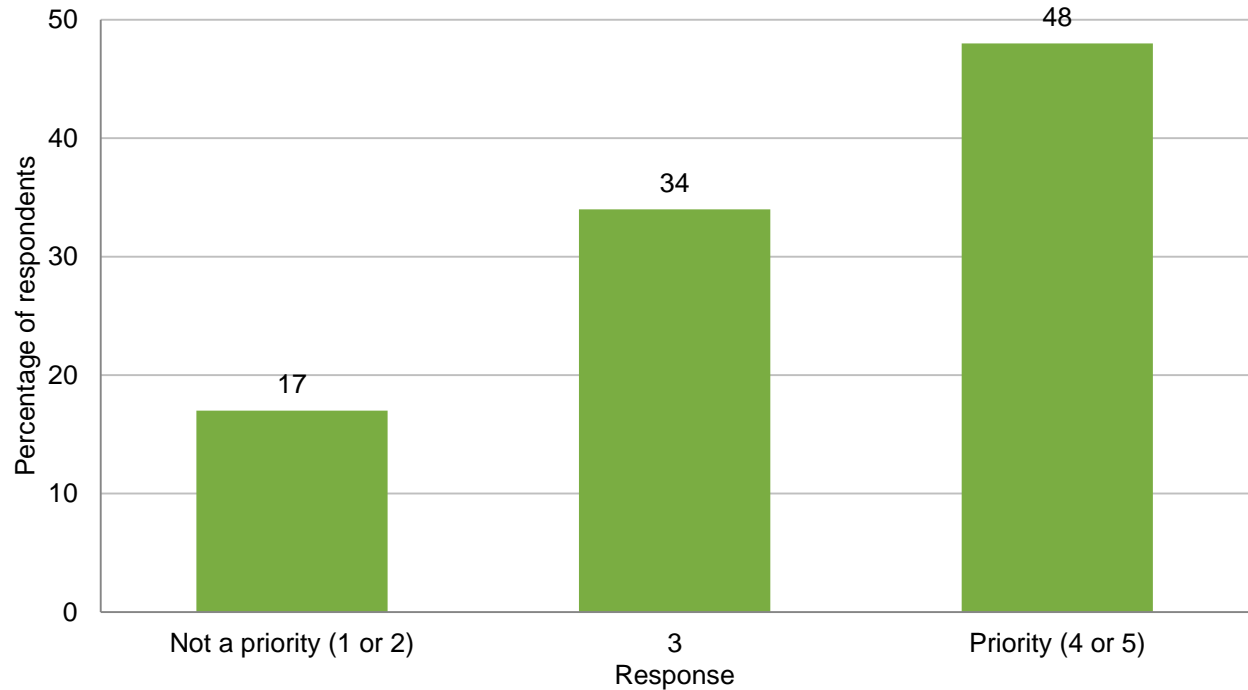


# 5 noteworthy trends

- Increasing focus on electrification
- Expanding customer program portfolios
- Shifting utility organizational structures and budgets
- Growing focus on innovation
- Showing progress on communications (but room for improvement)

# 1 Electrification is a priority

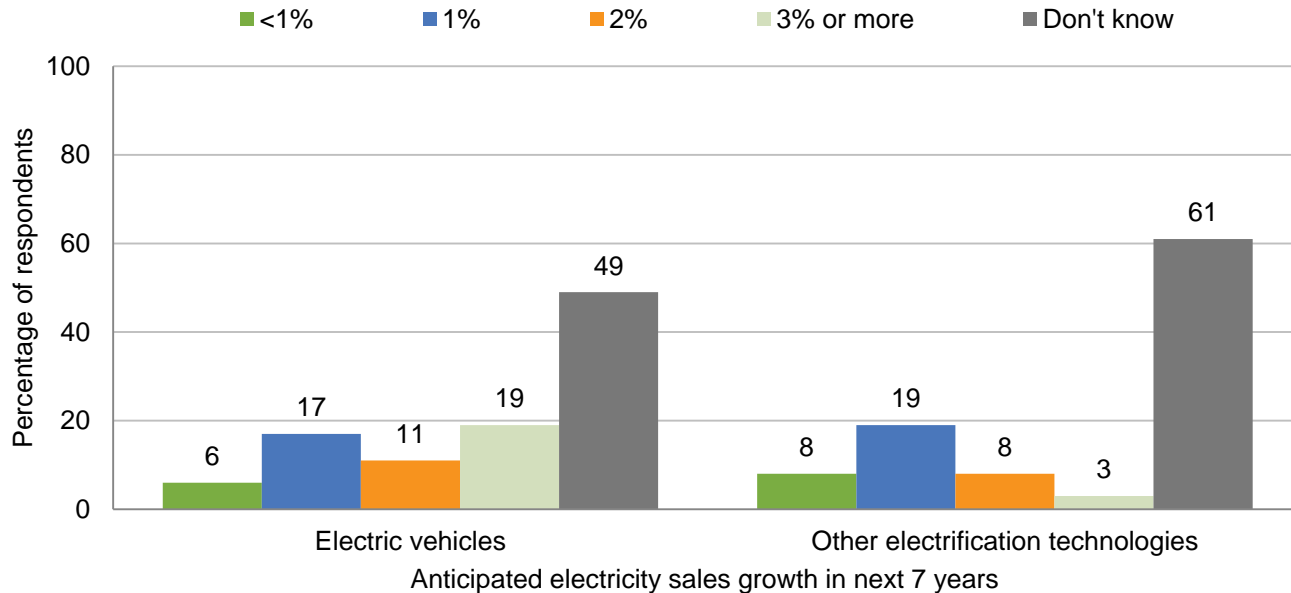
Almost half of respondents see electrification as a priority



Base: n = 35 utilities **Question S4\_14:** How much of a priority do you anticipate electrification (of transportation, natural gas appliances, etc.) will be for your utility in the next 7 years?

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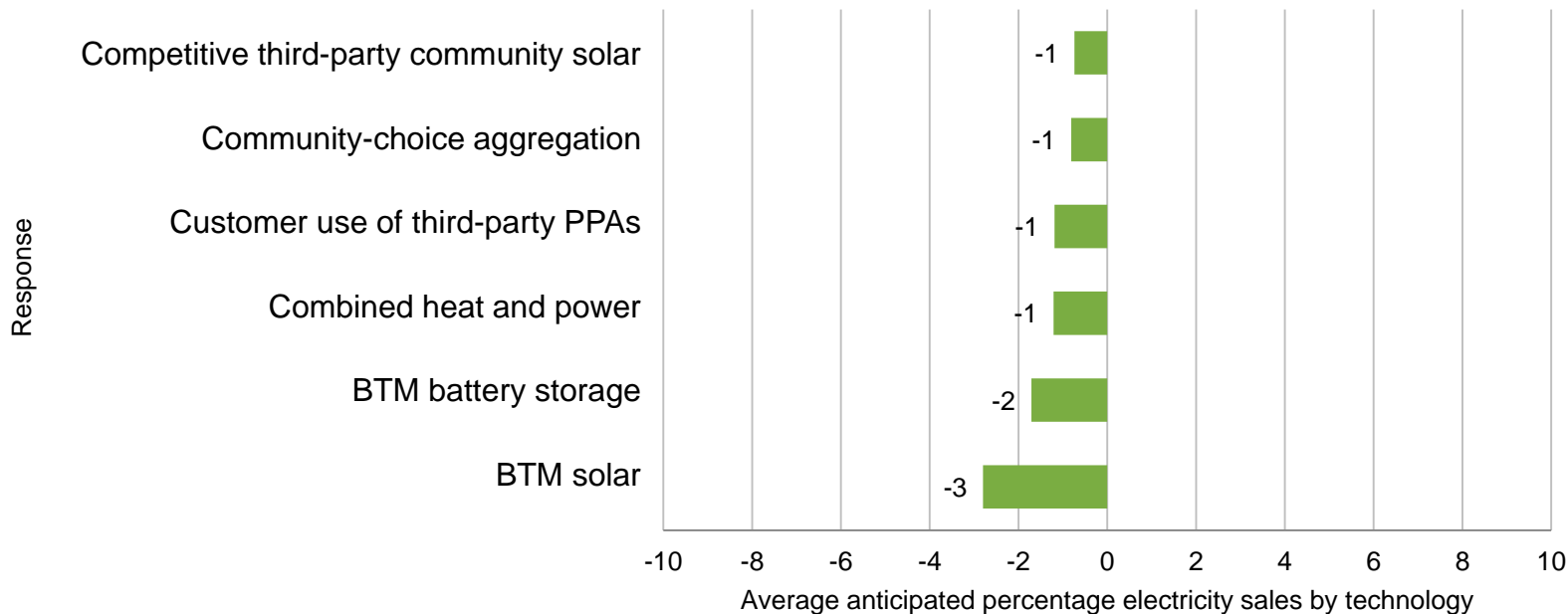
# 1 And utilities see opportunities with electric vehicles (EVs) and building electrification



**Base:** n = 36 utilities **Question S3\_17:** What percentage of total electricity sales growth, if any, does your utility anticipate seeing in the next 7 years related to each of the following technology options?

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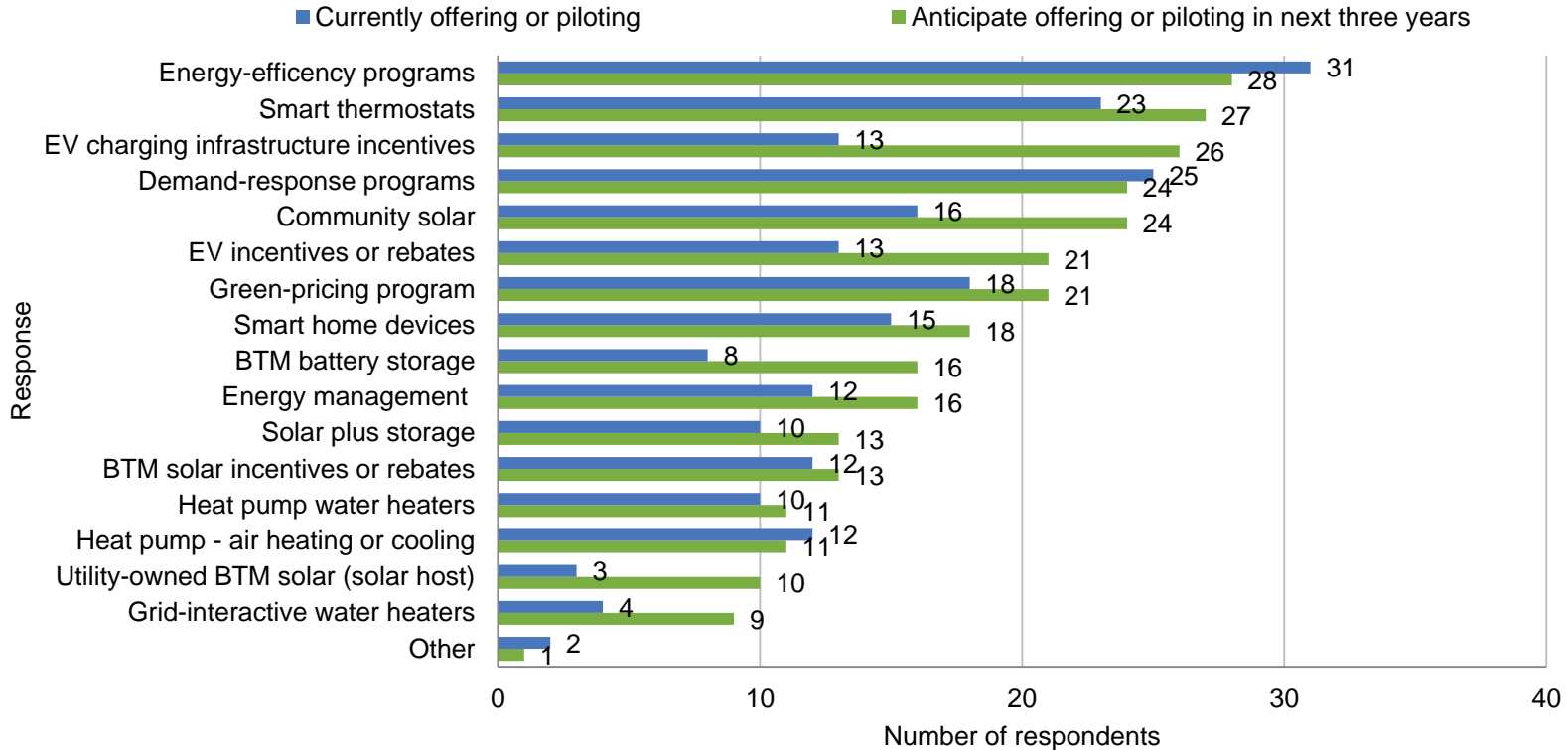
# 1 Utilities are concerned about losses from DER technologies



**Base:** n = 36 utilities. **Question S3\_3:** What percentage of total electricity sales reduction, if any, does your utility anticipate in the next 7 years related to the following technology options? **Notes:** BTM = behind the meter; PPA = power purchase agreement.

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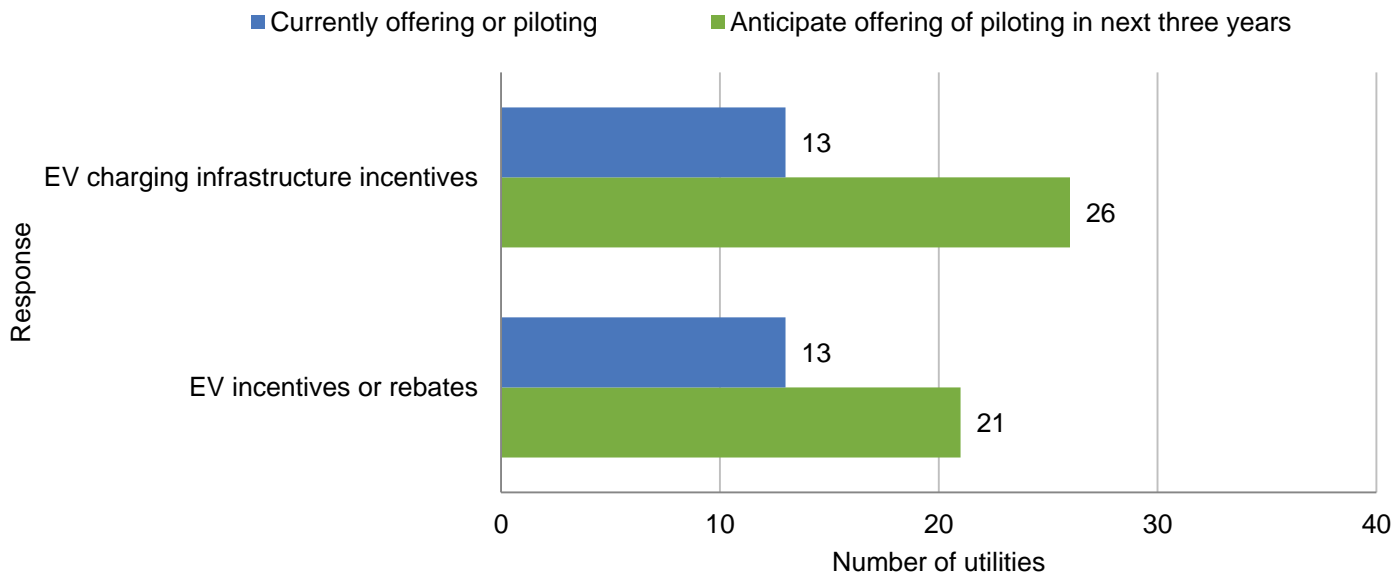
## 2 Portfolios are evolving



**Base:** n = 35. **Question S5\_11:** Which of the following programs or services is your utility currently piloting or offering for residential customers? **S5\_12:** Including continuing current pilots and offerings, which of the following does your utility anticipate piloting or offering for residential customers in the next 3 years? Select all that apply. **Notes:** BTM = behind the meter; EV = electric vehicle.

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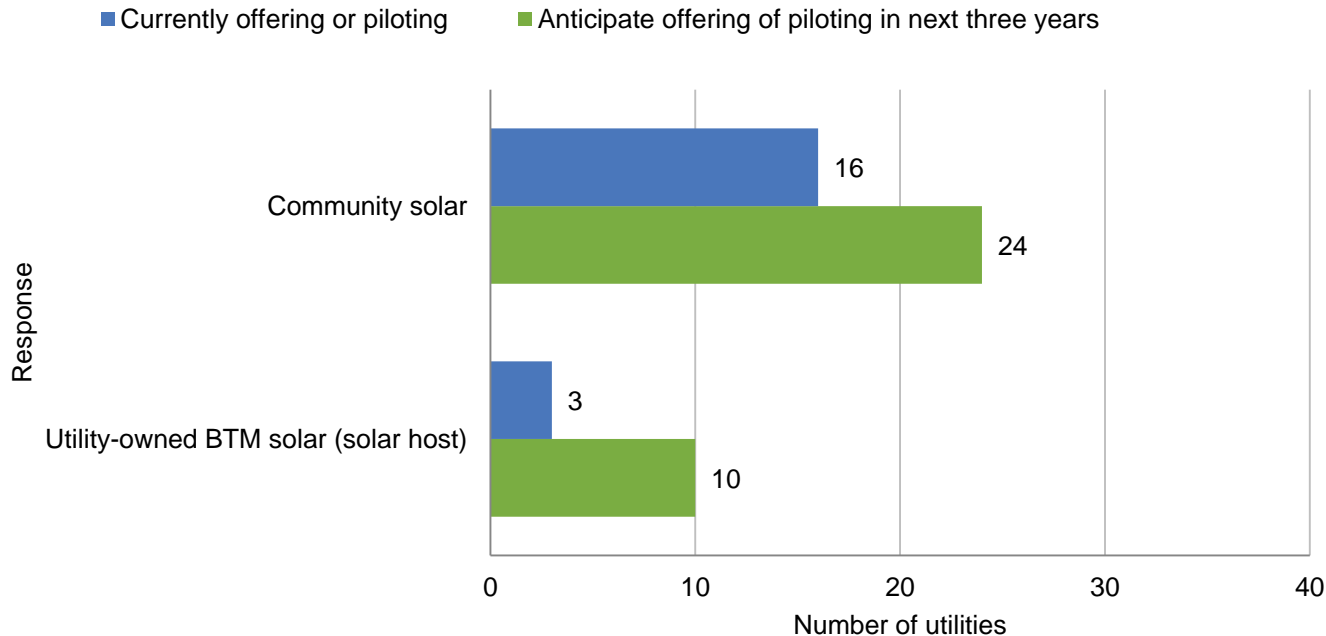
## 2 Anticipate an increase in EV programs



**Base:** n = 35. **Question S5\_11:** Which of the following programs or services is your utility currently piloting or offering for residential customers? **S5\_12:** Including continuing current pilots and offerings, which of the following does your utility anticipate piloting or offering for residential customers in the next 3 years? Select all that apply. **Note:** EV = electric vehicle.

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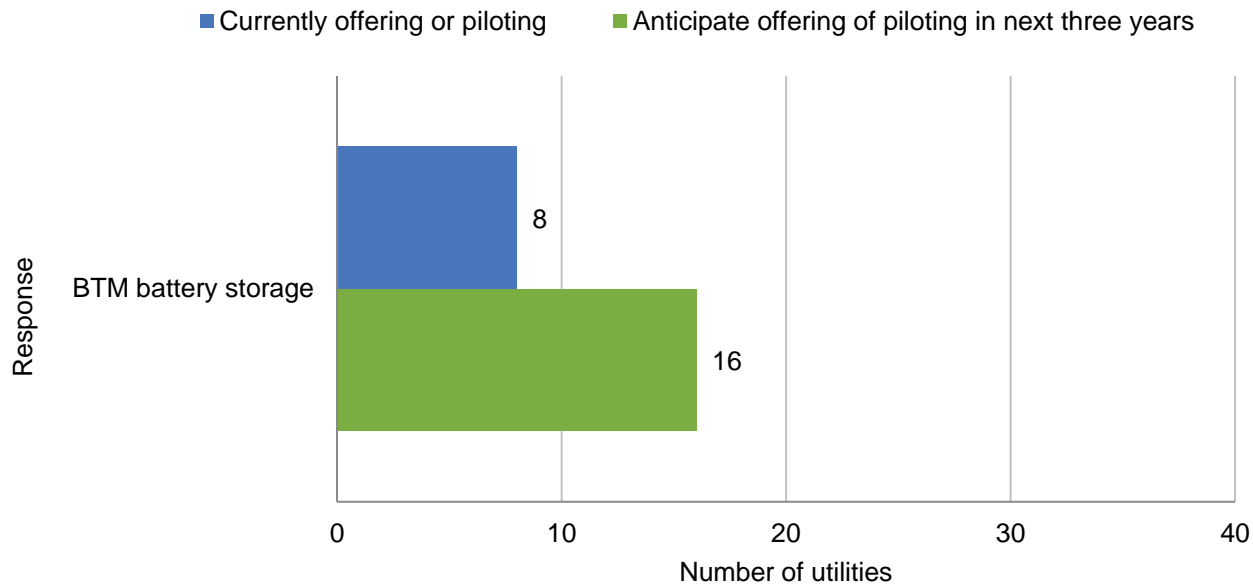
## 2 Anticipate an increase in solar programs



**Base:** n = 35. **Question S5\_11:** Which of the following programs or services is your utility currently piloting or offering for residential customers? **S5\_12:** Including continuing current pilots and offerings, which of the following does your utility anticipate piloting or offering for residential customers in the next 3 years? Select all that apply. **Note:** BTM = behind the meter.

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## 2 Anticipate an increase in BTM battery storage programs



Base: n = 35. Question S5\_11: Which of the following programs or services is your utility currently piloting or offering for residential customers? S5\_12: Including continuing current pilots and offerings, which of the following does your utility anticipate piloting or offering for residential customers in the next 3 years? Select all that apply.

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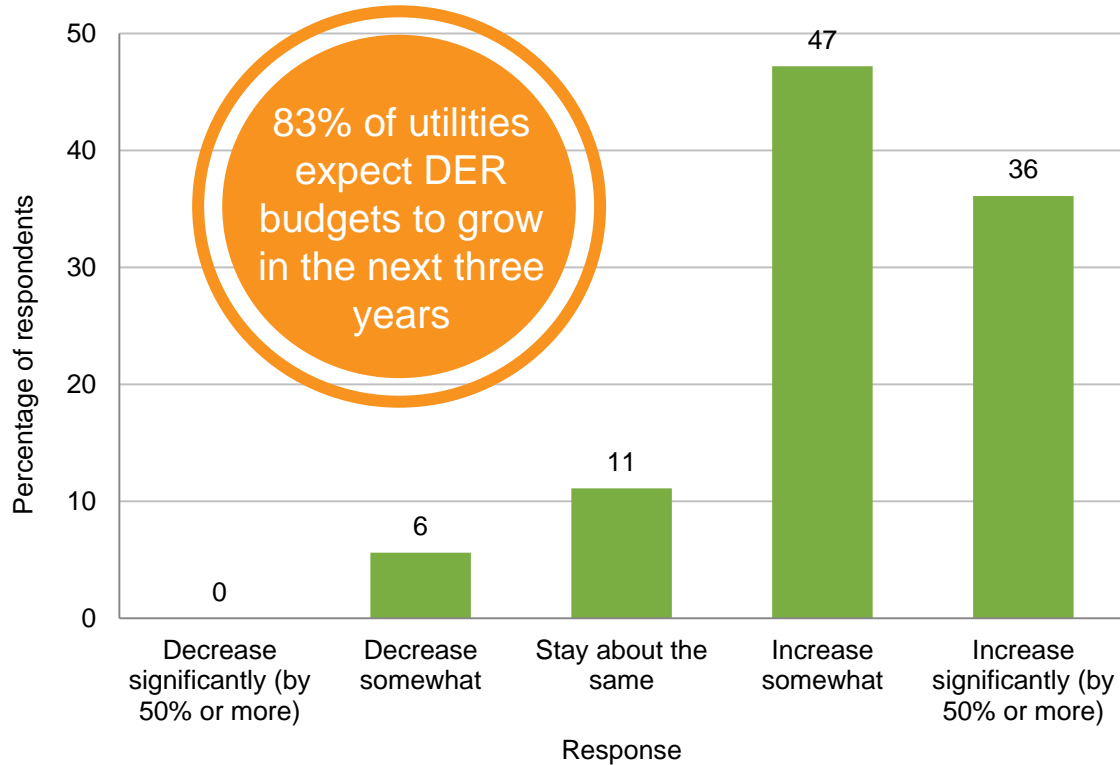
### 3 Responsibilities for DERs are shifting

	2017 (n = 28 utilities)	2018 (n = 36 utilities)
Cross-functional DER strategy team / task force	50%	64%
Dedicated DER-focused group	18%	6%
Limited DER collaboration, responsibilities align with traditional roles	18%	31%
No/limited clarity on DER responsibility	14%	0%

Base: n varies by year. Question S8\_2: What best reflects the way your utility is organized to develop and implement customer-centric DER-related efforts?

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### 3 DER budgets are growing

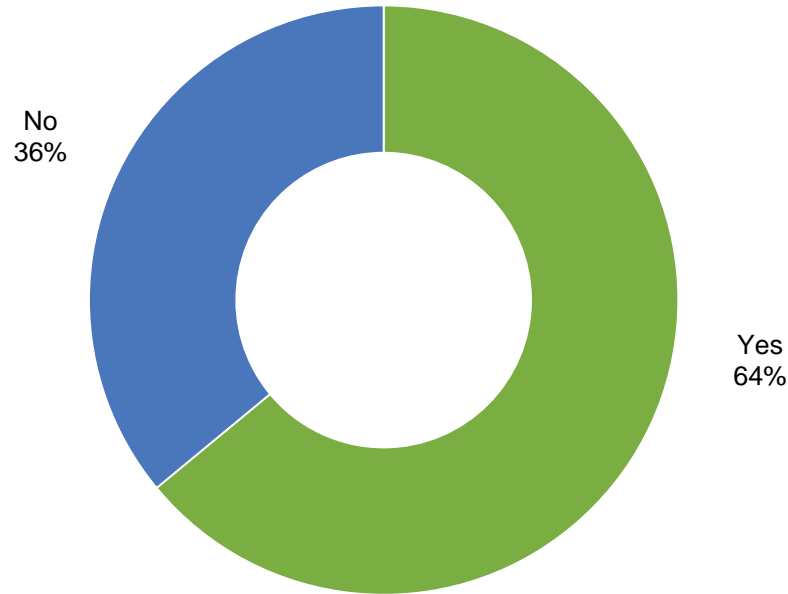


Base: n = 36 utilities. Question S8\_7: How do you expect the DER-related budget [for customer-centric DER-related efforts excluding salaries] to change at your utility in the next 3 years?

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## 4 More utilities have innovation groups

Utilities with groups driving or supporting innovation



**Base:** n = 36 utilities. **Question S8\_8:** Does your utility have a group that's responsible for driving or supporting innovation?

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## 4 Top areas of innovation

We asked, “What’s the most innovative thing your utility has done related to DERs?” and respondents told us:

“  
Exploring partnership or ownership of third-party hardware to reduce DER installation costs; retaining a share of device/provider sales.”

“  
Offering a distributed generation rebate to [commercial and industrial] customers with a path to transition away from net energy metering.”

“  
Making solar more accessible and affordable for customers.”

“  
Microgrid, battery storage, and solar plus storage pilots.”

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5

# Utilities are making progress on communications



**90%** of respondents provide some **solar-related** resources for customers



**1/3** provide behind-the-meter **battery storage-related** resources



Just over **50%** provide a way for customers to contact their utility with questions related to **electric vehicles**

**Base:** n = 35 utilities. **Question S7\_2:** Which of the following solar-related educational materials and decision-making resources do you currently provide for your customers? Select all that apply. **S7\_3:** Which of the following EV-related educational materials and decision-making resources do you currently provide for your customers? Select all that apply. **S7\_4:** Which of the following BTM storage-related educational materials and decision-making resources do you currently provide for your customers? Select all that apply.

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# 5 But have significant room for improvement

“I’m aware of the work my utility does with ... ”

“My utility supports its customers’ use of ... ”



15%

18%



16%

16%

**Base:** n = 7,207 residential customers. **Question S4\_11\_1:** Please indicate the extent to which you agree or disagree with the following statements: I’m aware of the work my electric utility does with EVs. **S3\_12\_1:** I’m aware of the work my electric utility does with battery storage. **Note:** Percentages reflect the number of respondents selecting 4 or 5 on a 5-point scale, where 5 means completely agree.

© E Source (2018 DER residential market research)

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# 5 key takeaways

- Understand customer needs and market trends
- Proactively create and implement a cohesive, integrated DER strategy
- Focus on customer needs (and the utility needs)
- Provide resources to help customers better understand their options and make informed decisions
- Support innovation across the utility



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# Upcoming web conferences\*

[Beyond Lighting: Next Generation DSM Programs and Technologies](#)  
*Tuesday, August 21*

[2018 DER Residential Customer Market Research: Key Findings](#)  
*Tuesday, August 28*

[DER Portfolio Innovation Working Group: Preworkshop Call](#)  
*Wednesday, October 3*

[Innovation Showcase: Focus on Blue Pillar](#)  
*Wednesday, August 22*

[How to Evolve Your DSM Portfolios in a DER World](#)  
*Wednesday, September 12*

*\*Please note that some events are only available to certain E Source members.*

Fall 2018 E Source



# DSM Executive Council

September 24–25, 2018 | Sheraton Denver Downtown | Denver, CO



We'll cover topics such as:

- Peak-time solutions
- Next-generation program success stories
- Trade allies
- Shifting demand-side management (DSM) culture and organization structures
- DSM in a carbon world
- Cannabis and indoor agriculture
- Revenue-generating opportunities
- Midstream programs

[Details and registration](#) *(invite only)*

# E SOURCE FORUM 2018

SEPTEMBER 25-28, 2018

THE SHERATON DENVER DOWNTOWN

DENVER, COLORADO

## Wednesday, September 26:

- Plenary: Your Customers Are Choosing Their Future—Will They “Swipe Right or Left” on Your Utility?
- Tales from the Top: The Strategies Behind Successful DSM
- Top Solar Marketing Leaders: Utilities That Are Winning with Customer-Centric Communications
- Strategic Electrification and the Next Generation of Efficiency Programs

## Thursday, September 27:

- Designing Customer-Centric Residential Demand-Response Programs
- Mind the Gap! How to Lead Your Utility into the Next Generation of Savings
- Shifting Regulatory Models and Spending Trends: Poster Session and Lounge
- Utility-Only Workshop: Crossing the EV Marketing Chasm—How Would Apple or Amazon Do It?

## Friday, September 28:

- Electrification: The Link Between Customer-Centric Products and New Revenue Streams
- Evolving DSM Portfolios in the Age of DERs
- What’s in Store for the Utility Business Model? Let’s Gaze into the Crystal Ball

[Register now!](#)



- Gain deeper insights into residential customers' interest in DER technologies
- Expand your understanding of other utilities' efforts to create innovative DER programs, services, and portfolios
- Develop a data-backed tactical plan for making changes to your utility's DER portfolio

E Source  
Distributed  
Energy Resource  
Strategy Service  
members only

[Information and registration](#) *(invite only)*

# Save the date: E Source 2019 Innovation Executive Council Meeting

- For members of the E Source Distributed Energy Resource Strategy Service and E Design 2020 initiative
- April 16, 2019
- Boston, Massachusetts

***More information coming soon***

# Other useful resources

- [2018 DER Strategy Benchmark](#)
- [2017 DER Strategy Benchmark](#)
- [Electric Vehicle Resource Center](#)
- [Smart Home Resource Center](#)
- [Next Generation of Energy Savings Resource Center](#)
- [Residential Solar Education and Communications Working Group Resource Center](#)



# Thank you! Questions?



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