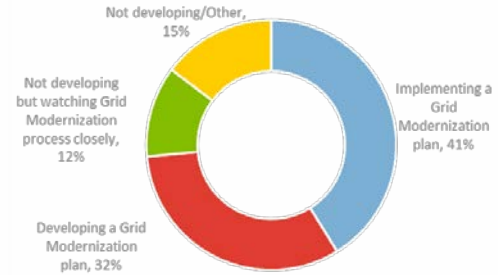


2018 BRIDGE Index™ Utility Industry Survey

Grid Modernization Survey Results

Grid Modernization Plan Adoption



Respondents



Contents

- Family of utility industry surveys
- Authorized usage
- General survey respondent information
- Survey findings
- Contact information
- Legal notice

About BRIDGE Index™

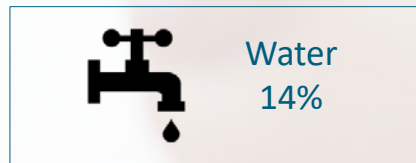
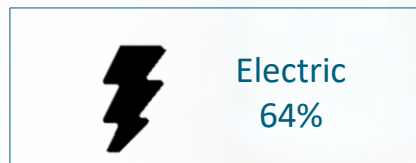
- The BRIDGE Index™ family of surveys from BRIDGE Energy Group provides an objective look at the state of both current and future priorities across a broad cross-section of North American utility decision-makers. The insights garnered from this study provide a solid basis for future decision making by industry leaders.
- Annual BRIDGE Index™ utility industry surveys include
 - Grid Modernization survey
 - Grid Operations survey
 - Grid Analytics survey
 - Grid Security survey

Authorized Usage

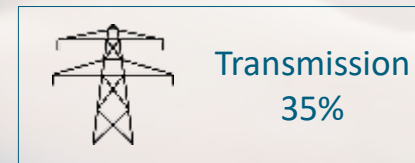
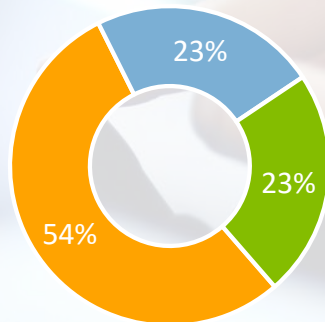
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 - “Source: BRIDGE Energy Group® – 2018 BRIDGE Index™”

Broad Range of Utility Respondents

Survey reach: Over **20,000** North American Utility Employees

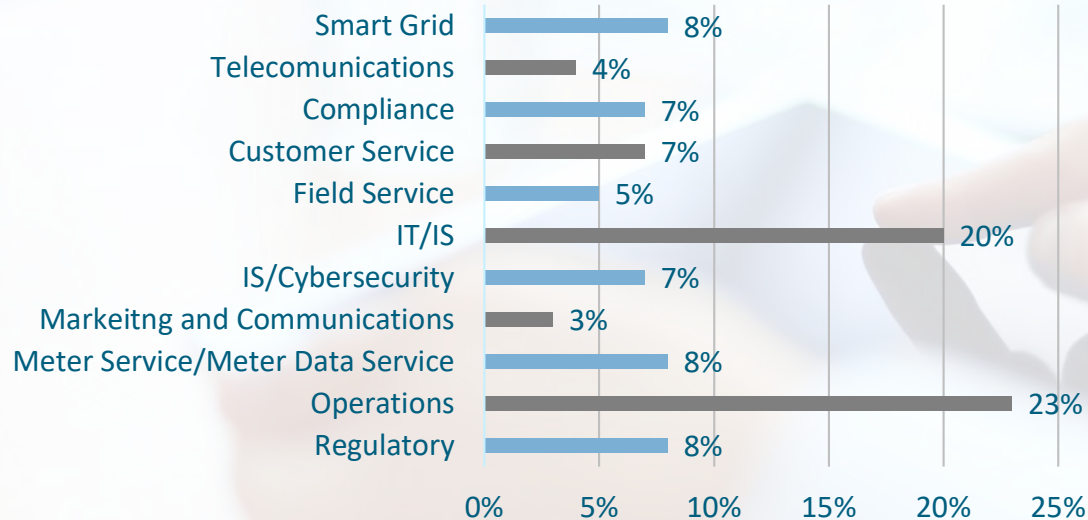


- IOU
- Municipal
- Cooperative

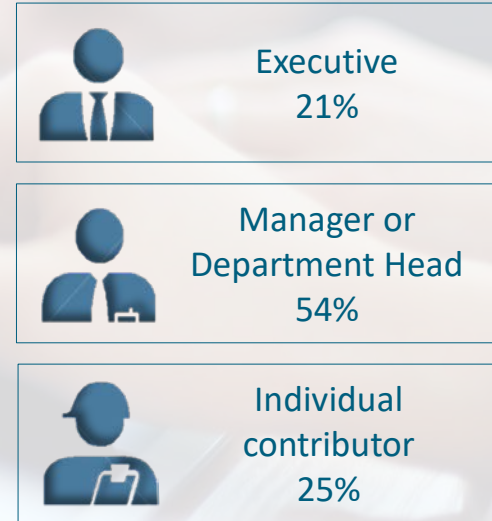


Respondents by Organization/Role

By Organization



By Role



Representative Set of Respondents

- Ameren
- Arizona Public Service
- Arkansas Electric Cooperative
- Arlington County
- AVANGRID
- BC Hydro
- Central Maine Power
- City of Glenwood Springs
- City of Madison
- City of Pomona
- Clark Public Utilities
- Cleco Power
- Dairyland Power Cooperative
- Dominion Energy
- Duke Energy
- EPCOR
- Eversource Energy
- EWEB
- Exelon
- Frankfort Electric and Water
- Golden Spread Electric Co-op
- Grant County PUD
- GSOC
- Huntsville Utilities

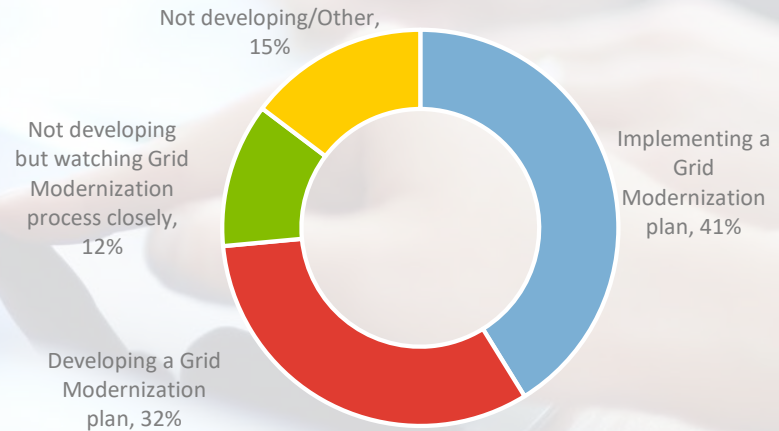


- Hydro-Quebec
- LA Department of Water & Power
- National Grid
- NaturEner
- Nebraska Public Power District
- Northern Rio Arriba Electric Co-op
- Orlando Utilities Commission
- Pee Dee Electric Co-op
- Portland General Electric
- PPL Electric Utilities
- Puget Sound Energy
- San Diego Gas and Electric
- Southern Rivers Energy
- Tri-State G & T
- Tucson Electric Power
- United Power
- Unitol
- UNS Energy
- Vectren
- Vermont Electric Co-op
- Walton EMC
- We Energies
- WEC Energy Group
- Westar Energy

Grid Modernization Adoption

73% of utilities, up from 52% in 2017, are implementing or currently developing Grid Modernization plans, but....

Grid Modernization Plan Adoption

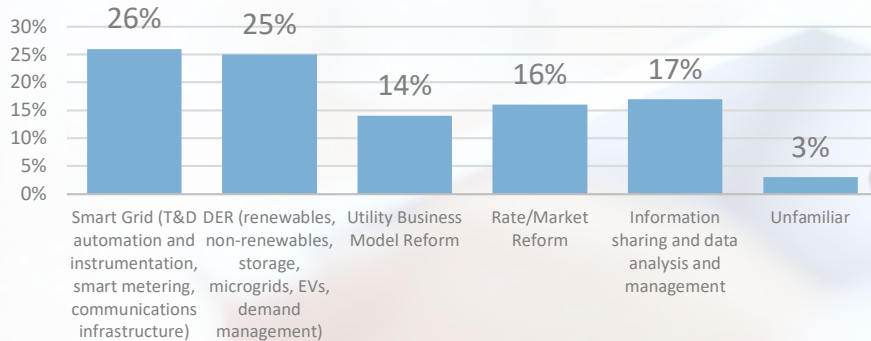


Grid Modernization Adoption

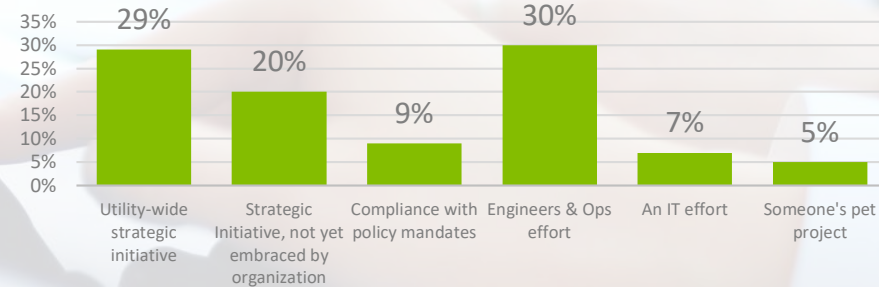
... there is a lack of industry consensus around the components of Grid Modernization ...

... and many utilities do not yet consider it a utility-wide strategic initiative

Components of Grid Modernization



Perceptions of Grid Modernization



“Grid Modernization is a significant transformation of the entire utility value chain and the organization that supports it. To be successful, it is critical for utilities to develop a strategy and roadmap that holistically addresses people, processes and technologies.”

- BRIDGE Energy Group

Grid Modernization Priorities

| Grid Modernization Objective as Priority 1 or 2 | All Utilities |
|---|---------------|
| Maintain/improve grid reliability and resilience | 58% |
| Empower customers | 21% |
| Improve grid flexibility and efficiency | 11% |
| Improve operations through workforce and asset management | 8% |
| Accommodate distributed generation | 3% |

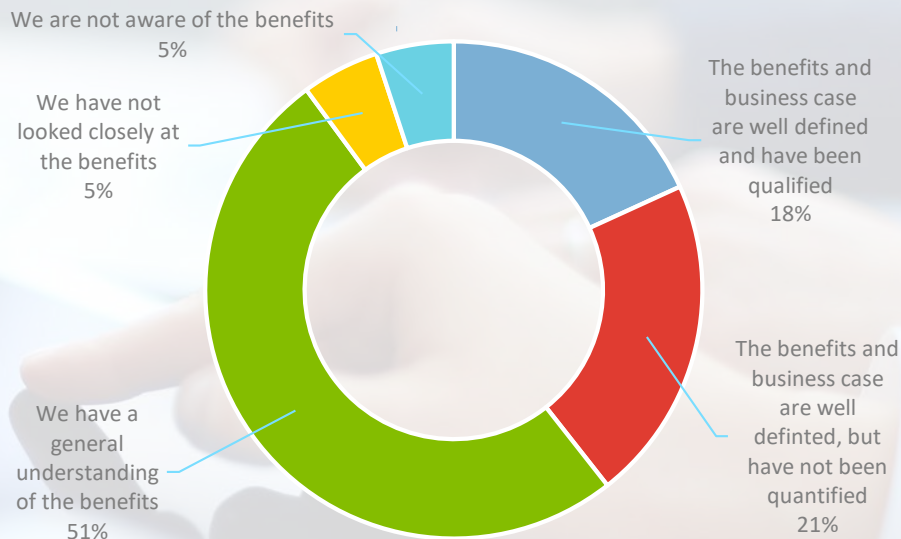
Top Priority Again: Improving reliability and resilience (58%, up from 40% in 2017)

“Grid Modernization, when developed from a holistic standpoint and with a view to the future, supports the priority to maintain focus on reliability and resilience while enabling operational improvements, workforce efficiencies, and the integration of distributed energy resources.”

- BRIDGE Energy Group

Understanding the Value of Grid Modernization

- 90% of utilities have a clear or general understanding of the business benefits for Grid Modernization, similar to 2017
- However, only 18% have quantified the benefits

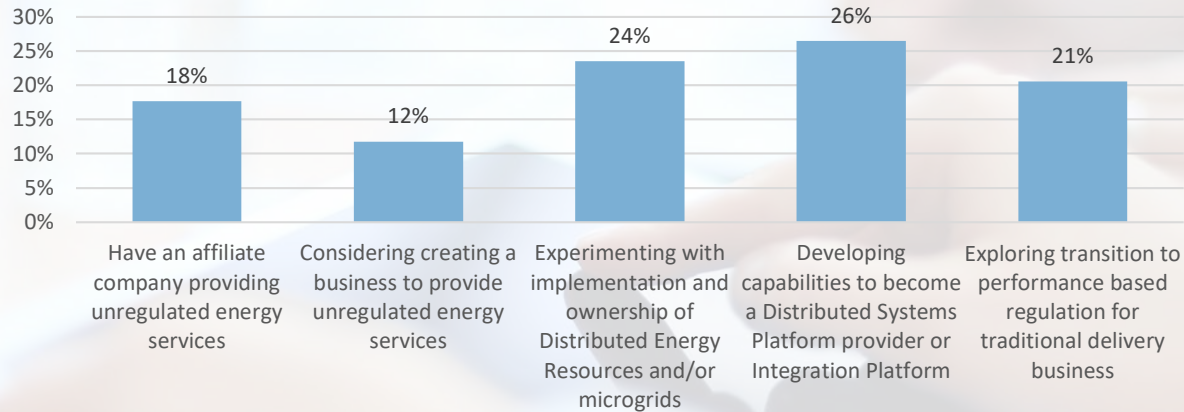


“To maximize business benefits, Grid Modernization initiatives should use a line of sight methodology to map investments to required capabilities, functionality and enabling technologies, aligned with desired strategic goals and quantified benefits.”

- BRIDGE Energy Group

Exploring New Business Models

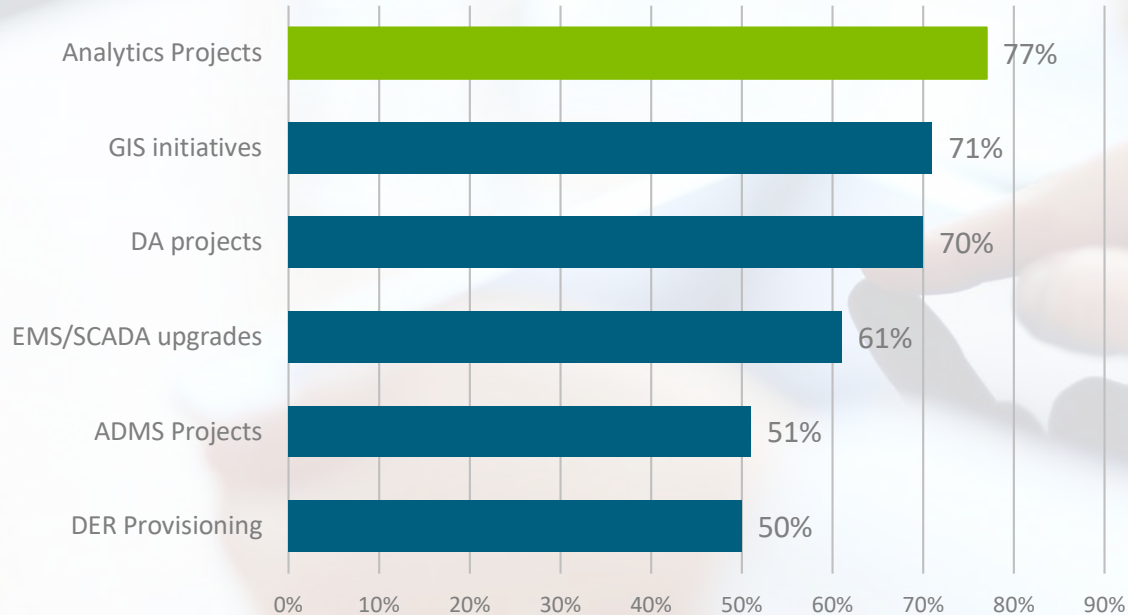
Market changes continue to drive utilities to explore new business models



“New business models bring new opportunities and new challenges. Consider leveraging experienced outside resources familiar with the potential issues as well as the business, IT and OT factors unique to the utility industry to help with the overall plan as well as the selection and implementation of the right foundational tools.”

- BRIDGE Energy Group

Top Grid Modernization Projects in the Next 24 Months



“The importance of information to the grid operations of the future is underscored by “Analytics Projects” capturing the top position. Establishing a data governance framework will help ensure the success of your analytics projects.”
- BRIDGE Energy Group

Top Implementation Issues Impacting Planned/Ongoing Grid Modernization Initiatives

1. Integration of related systems/data
2. Supply and availability of staff with the right skills

“Systems and data integration and availability of staff with the right skills are the most common challenges impeding the ability to successfully implement Grid Modernization projects. Leveraging resources with utility-specific and cross-vendor experience can help to quickly overcome these issues and achieve business objectives.”

- BRIDGE Energy Group

For More Information

Meet Our Experts

Discuss creative and pragmatic solutions to your Grid Modernization goals.

Contact BRIDGE at:

Main: 1.508.281.7133

Toll Free: 1.888.351.8999

Research@BridgeEnergyGroup.com

www.BridgeEnergyGroup.com

Join Our Panel

Your opinion matters – Become a panelist for the 2018 survey.

Email us at:

Research@BridgeEnergyGroup.com



BRIDGE Energy Group

BRIDGE Energy Group is a consulting and systems integration firm transforming Transmission & Distribution operations.

Leveraging its operations, technology, analytics, visualization and real-time systems expertise, BRIDGE delivers innovative and pragmatic solutions.

BRIDGE focuses on solving utility challenges and improving grid security and reliability while increasing profitability and efficiency for our clients.



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