nationalgrid
partners

Innovation Survey

Executive Summary

The energy industry is at a crossroads. Decarbonization goals are driving demand for renewable energy and electrification of transportation and heat. In parallel, advancements in technology, notably artificial intelligence, are driving electric demand forecasts to levels not seen before. The implications are wide-ranging and complex, and one thing that is becoming abundantly clear is that how we did things before will fall short in delivering for what comes next. Innovation is needed at an unprecedented scale.

National Grid set up National Grid Partners in 2018 and the NextGrid Alliance in 2019. And in 2024 we commissioned the first review of innovation landscape across the US utility industry to understand the industry's top priorities and dive deep into key topics – including approach to finding innovative ideas, ways to access funding, and the drivers and inhibitors of innovation. 219 leaders from across the industry took part in an online survey conducted by Method Research and distributed by RepData.

We hope you enjoy the information enclosed and we look forward to broadening this study as we tackle the biggest challenge of our generation.

Highlights

01

Utilities will benefit from a shared definition of ‘innovation’:

The survey highlighted that ‘innovation’ can be a subjective term. While there were similarities in how utilities described innovation, i.e., creating and leveraging technology with a defined benefit, there were nuances in the technology maturity. For example, one respondent defined innovation as “Solving new and emerging problems with emerging technologies/processes that result in incremental revenue, cost savings, improved safety, and/or better customer service”; while another stated “Innovation is nothing more than the application of concepts to existing systems that have the potential to improve the efficiency of the organizational structure”.

85% of utility innovation leaders agreed that the industry would benefit from having a shared definition of ‘innovation’.

02

Compliance is the topmost corporate priority, while innovation priorities include digital transformation, efficiency and net-zero:

Despite a heavy focus from the industry and from worldwide governments, only **19%** of utility innovation leaders named net zero goals as a top corporate priority. **29%** of utility innovation leaders responded with compliance as their company’s top priority.

The top priorities in terms of innovation for utilities are digital transformation **(57%)**, efficiency **(48%)** and net-zero goals **(44%).** Interestingly, the importance of net-zero differed with the presence of a dedicated innovation budget. **51%** of utility innovation leaders with a dedicated innovation budget stated net-zero goals are one of their top priorities, compared to **22%** of leaders without a dedicated innovation budget.

03

Innovation ideas are primarily sourced via employees, but utilities want to partner with startups to deliver innovation:

Internal employees is the most common way that utilities source innovation ideas today. While ideas are sourced internally, there seems to be a shift towards partnering with startups to deliver on innovation. **74%** of respondents stated that while they are not working with startups today, they want to start doing so. Indicative data suggests that participation in the NextGrid Alliance is encouraging startup partnerships.

Highlights

04

Competition is the biggest driver for innovation, while lack of resources and lack of alignment with regulators are the biggest inhibitors:

42% of utility innovation leaders admit that competition has had the biggest practical impact on driving innovation; while more than the **32%** stated customer demand as the second biggest driver. In terms of the biggest challenges or barriers are to making progress in innovation, the top two factors included employee incentive **(46%)** and lack of resources **(36%).** The third most popular option was the lack of alignment with regulatory priorities **(32%).**

05

Only 30% of innovation projects ever get implemented, and it typically takes between 1-2 years to roll them out

Utilities leverage multiple funding sources for innovation projects, but less than one-third of innovation projects get implemented. 179 participants **(82%)** responded that only **11-30%** of the innovation projects get implemented. The top three source of funding for innovation include a dedicated innovation budget, operating expenses, and capital expenses. **51%** of US utilities surveyed have an annual innovation budget between $5-$25 million. Innovation funding is spread out quite evenly across the project lifecycle. 137 participants **(63%)** responded that it usually takes anywhere from 1-2 years to roll out innovation projects.

30%

(82%) responded that only 11-30% of the innovation projects get implemented

Profile of Sample

The Sample Represented Four Types of Utilities:

74% **Electric Transmission / Distribution**

68% **Energy Generation / Storage and Energy Suppliers**

42% **Gas Transmission / Distribution**

Seniority:

69% **at Director level**

25% **At Vice President level**

1% **at President level**

4% **at C-level executive level**

HIGHLIGHT #1

Utilities Will Benefit From a Shared Definition of Innovation

Respondents were asked to provide the definition of innovation used within their utility. While there were similarities, especially with definitions around creating and leveraging technology with a defined benefit, there were nuances in the technology maturity. Most users interpreted innovation to mean changing the current ways of working that has a defined benefit – whether that's adopting new technology, process, and/or offering new services or products.

> The ability to enhance business processes and transformation through new technologies, building a culture where employees are encouraged to learn, be curious, and while maintaining reliability and customer engagement.

> Solving new and emerging problems with emerging technologies/processes that result in incremental revenue, cost savings, improved safety, and/or better customer service.

Some respondents felt that innovation does not necessarily have to be new technologies or new ideas. It can be something that already exists but is not being leveraged by the utility, or even a particular system.

> It doesn't have to be a new technology; it can be something existing that we are just not using.

> Innovation is nothing more than the application of concepts to existing systems…It is the execution of an effective idea.

This shows how subjective the term innovation can be. The respondents were also asked if there would be use of having a shared definition of innovation, to whom: **85%** of utility innovation leaders agreed, only **11%** were neutral to this statement, and **4%** disagreed.

85%	**Agreed**
25%	**Neutral**
4%	**Disagreed**

HIGHLIGHT #2

Compliance is the Topmost Corporate Priority, While Innovation Priorities Include Digital Transformation, Efficiency and Net-zero

The survey asked the respondents to rank priorities, both the corporate priorities and priorities specific to innovation. For corporate priorities, **29%** of utility innovation leaders responded that their company's top priority is compliance. **1 in 5 (20%)** utility innovation leaders responded with reliability as their company's top priority.

Utilities are regulated monopolies, so regulatory compliance plays a critical role in their functioning and funding their day-to-day as well as strategic operations. This also has a crucial implication for innovation – nearly three quarters **(72%)** of utility leaders responded that innovation at their organization is primarily driven by regulation or compliance. This underscores the need for innovation to be encouraged by the regulators.

72%

of utility leaders said that innovation at their organization is primarily driven by regulation or compliance.

51%

Net zero was deemed to be high priority for utilities with a dedicated innovation budget: 51% compared to 22% of leaders without a dedicated innovation budget

When asked about the innovation priorities, the respondents provided the top priorities for utilities as digital transformation **(57%)**, efficiency **(48%)** and net zero goals **(44%)**. Interestingly, the importance of net zero differed with the presence of a dedicated innovation budget. **51%** of utility innovation leaders with a dedicated innovation budget said that net-zero goals are one of their top priorities, compared to **22%** of leaders without a dedicated innovation budget. This could imply that dedicated innovation spending may be more likely utilized on innovation that delivers on the net zero goals.

HIGHLIGHT #3

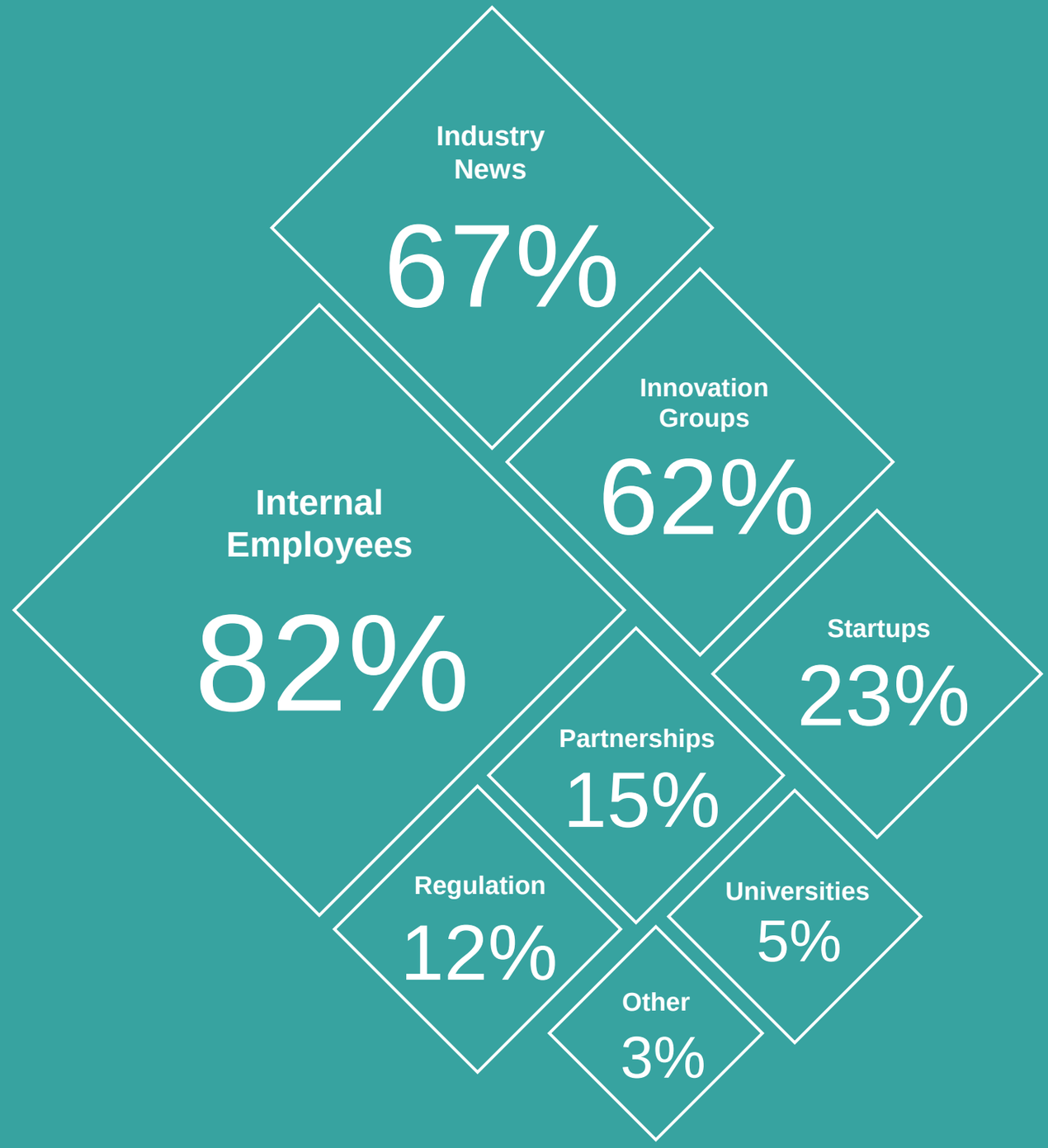
Innovation ideas are primarily sourced via employees, but utilities want to partner with startups to deliver innovation

There are multiple ways in which the US utility industry sources innovation ideas. The three most noted sources of innovation ideas are internal employees, industry news, and industry groups.

While sourcing ideas seem to be primarily driven by employees, the utility industry seems to increasingly want to partner with startups to deliver the innovation projects. **74%** of respondents stated that while they are not working with startups today, they want to start doing so.

Utilities that are involved in the NextGrid Alliance have seen a significant increase in startup partnerships over the last few years. In an innovation survey conducted in 2021, only **23%** of NextGrid Alliance members had partnered with startups to deliver innovation, while this survey showed **90%** of Alliance respondents partnered with startups for innovation. This indicative data shows an increase of nearly **400%** in a matter of three years.

The survey results also found that equity investment in startups is unique in the US utility industry. Less than **19%** of the respondents indicated that they used some of the total budget towards equity investment in startups.



HIGHLIGHT #4

Competition is the Biggest Driver for Innovation, While Lack of Resources and Lack of Alignment With Regulators is Seen as the Biggest Inhibitors

The survey asked respondents to pick one driver that had the biggest practical impact on driving innovation forward. **42%** of utility innovation leaders admit that competition has had the biggest practical impact on driving innovation; with customer demand being stated as the second highest priority.

The impact of competition as a driver was even more pronounced for utilities that had an annual innovation budget greater than $5M, or were gas utilities:

52%

52% of utilities with an annual innovation budget greater than $5M chose competition as the biggest driver, versus 19% of utilities with less than $5M annual budget

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51%

51% of gas utilities chose competition as the biggest driver, versus 39% of electric utilities

48%

Think incentives aren't enough to hit net zero goals—only requiring utilities to hit them will create real change.

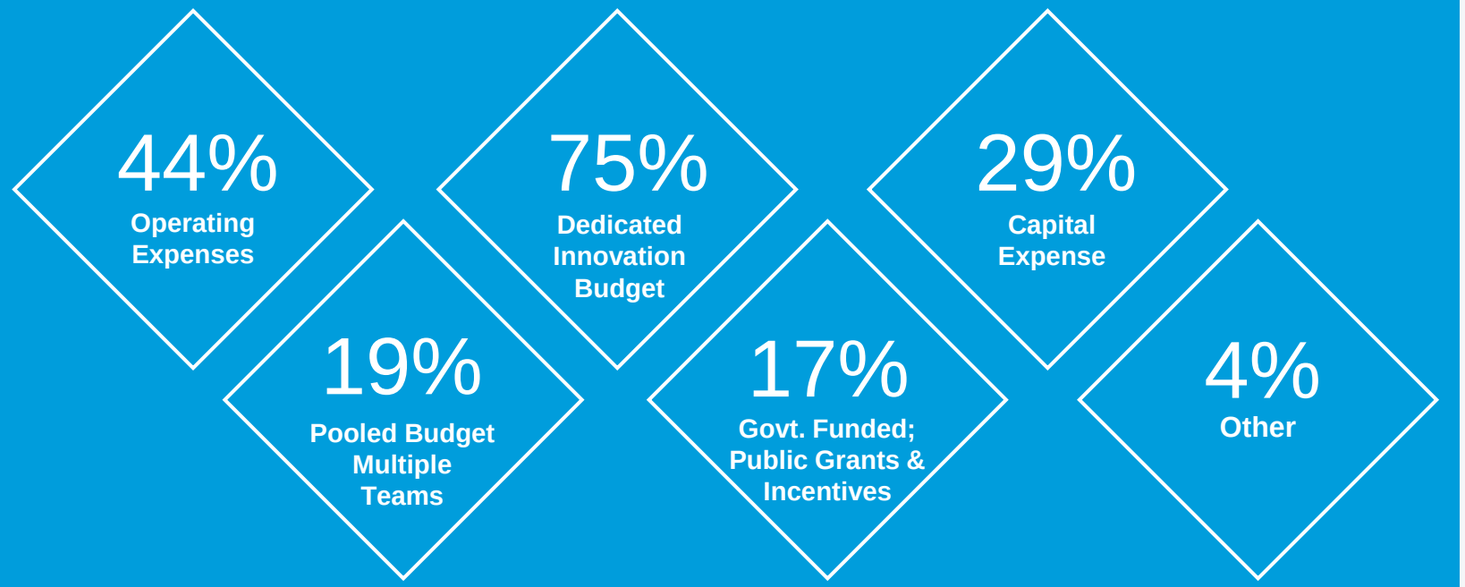
The survey also asked utilities what the biggest challenges or barriers are to making progress in innovation. The top two factors included lack of employee incentive **(46%)** and lack of resources **(36%)**. The third most popular option was the lack of alignment with regulatory priorities. Furthermore, utility leaders surveyed believe more regulation is essential to shift utility priorities toward increased innovation. Nearly half **(48%)** think incentives aren't enough to hit net-zero goals—only requiring utilities to hit them will create real change.

HIGHLIGHT #5

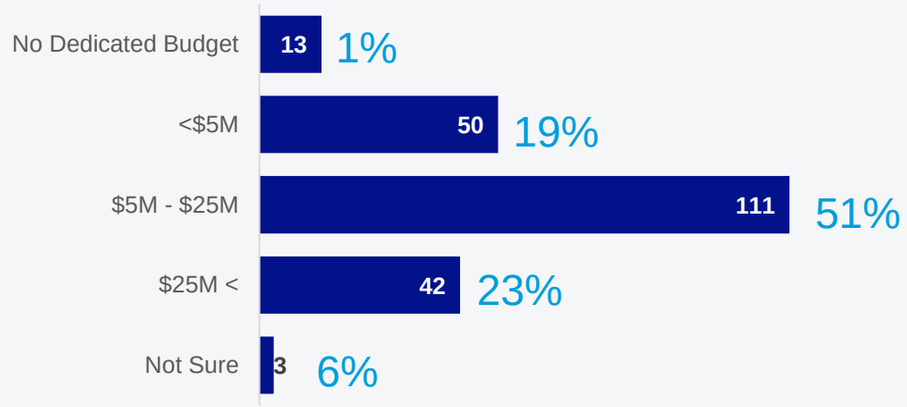
Only 30% of innovation projects ever get implemented, and it typically takes between 1-2 years to roll them out

Utilities leverage multiple funding sources for innovation projects: The top three source of funding for innovation include a dedicated innovation budget, operating expenses, and capital expenses.

In fact, of the utilities with a dedicated innovation budget, 40% responded to be also leveraging operating expenses, and 21% responded to be also leveraging capital expenses.



Annual Innovation Budget



51% of US utilities surveyed have an annual innovation budget between $5-$25 million. Innovation funding is spread out quite evenly across the project lifecycle of discovery, design, piloting, scaling, and operationalizing innovation.

179 participants **(82%)** responded that only **11-30%** of the innovation projects get implemented. 137 participants **(63%)** responded that it usually takes anywhere from 1-2 years to roll out innovation projects. The median time it takes for utility innovation leaders to move from piloting to roll-out projects is about a year.

Thank You

We are inviting you to participate in the NextGrid Alliance 2025 Utility Innovation Survey. If interested, please fill this participation form.