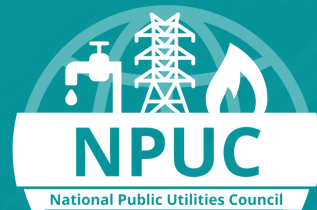


SEPTEMBER 2021

UTILITY DECARBONIZATION HAS AN AIR OF UNCERTAINTY

MOTIVE POWER
ZPRYME



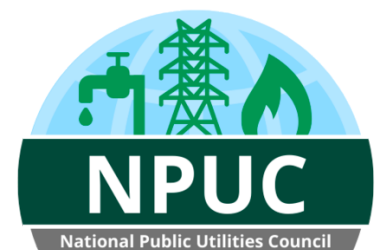
motivepower
ideas, implemented



INTRODUCTION

The idea of a triple bottom line, measuring social and environmental impact in addition to financial profit, has been a topic of discussion in many industries for more than a decade. But are evolving consumer demands and stakeholder pressure finally driving the utility industry to take significant environmental and social action, and prioritize decarbonization?

The National Public Utility Council (NPUC) and Zpryme surveyed over 80 utility employees to gauge the state of their decarbonization initiatives. This paper explores how utilities are benchmarking their decarbonization efforts, how they are tracking and planning for federal decarbonization regulation, and challenges they face in decarbonizing.



MEASURING EXPECTATIONS & EFFORTS

There is ambivalence around prioritizing ESG (environmental, social, and governance) standards at utilities. Almost half the IOUs we surveyed reported that ESG ratings are actively discussed at their utilities (Figure 1), however, nearly a quarter said no, and more than a quarter (27%) were unsure.

ARE ESG RATINGS ACTIVELY DISCUSSED IN YOUR DECARBONIZATION EFFORTS?

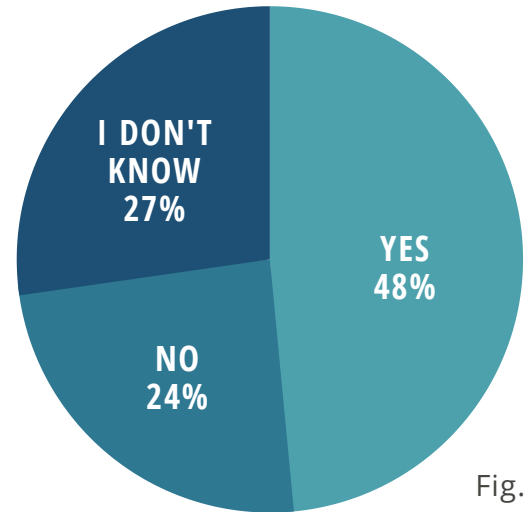


Fig. 1

DO YOUR UTILITY'S SHAREHOLDERS APPLY ESG RATINGS CRITERIA TO YOUR BUSINESS?

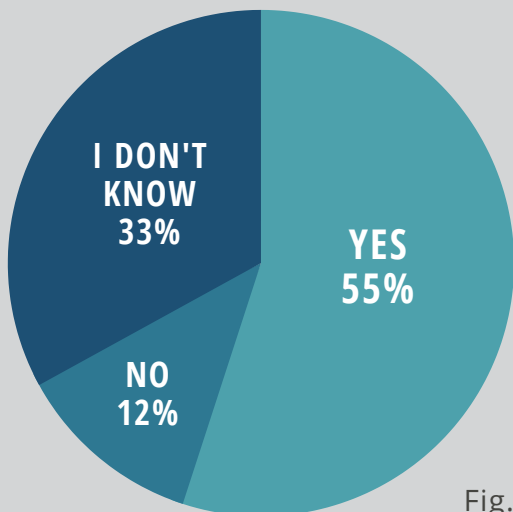


Fig. 2

Investors, on the other hand, seem to be prioritizing decarbonization. 55% of IOU respondents say shareholders apply ESG criteria (Figure 2) and 60% report their investors are asking for decarbonization investment action, with roughly half of that 60% additionally wanting carbon credit investment (Figure 3). Though 33% and 27%, respectively, are unsure if investors are asking for these investments, showing to some degree that the relative strength of these demands can be limiting since they're not leading to a company-wide focus.

HAVE YOUR INVESTORS ASKED FOR CARBON CREDIT OR DECARBONIZATION INVESTMENT ACTION?

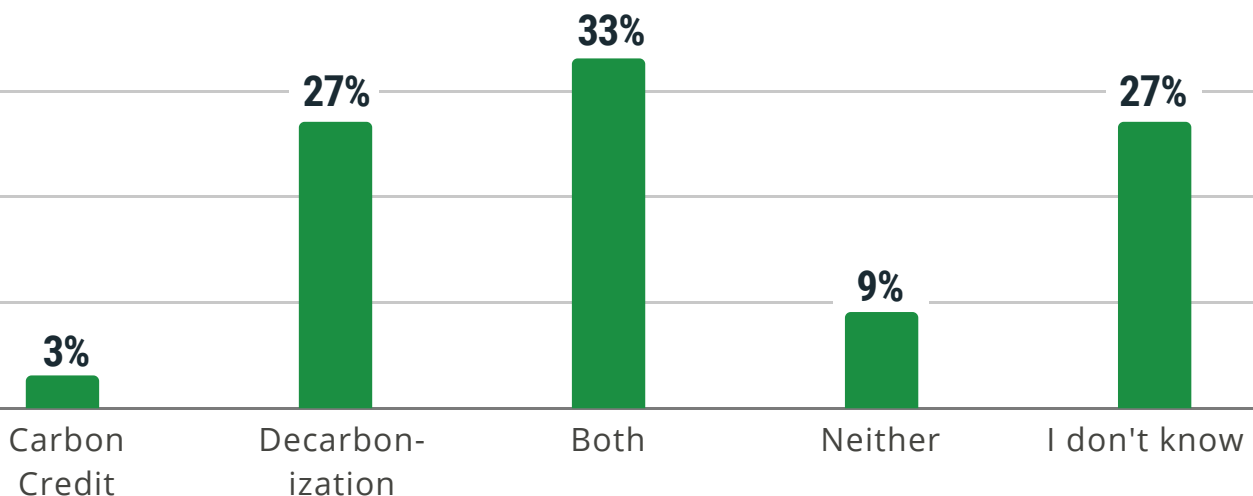


Fig. 3

It's important to note the respondents' high level of uncertainty about the specific actions or broader plans their utility has for decarbonization. 25% of the respondents were Director-level or higher. While it is understandable that managers and professional staff are not privy to all strategic information, it is somewhat telling that organizations aren't fully disseminating information about their decarbonization efforts. The lack of communication across the enterprise may indicate that decarbonization is not a top priority at their organization.

Encouragingly, **almost half of utilities** are benchmarking decarbonization against a clean energy standard (CES). However, there is room for growth with 27% working towards a CES but not benchmarking within their utility and 16% not working towards a CES (Figure 4). And while 55% of respondents are benchmarking their decarbonization efforts at least annually, 26% say they are not benchmarking decarbonization efforts at all (Figure 5). For utilities to succeed in decarbonizing, they need to better measure and track their efforts.

DOES YOUR UTILITY BENCHMARK ITSELF AGAINST A CLEAN ENERGY STANDARD?

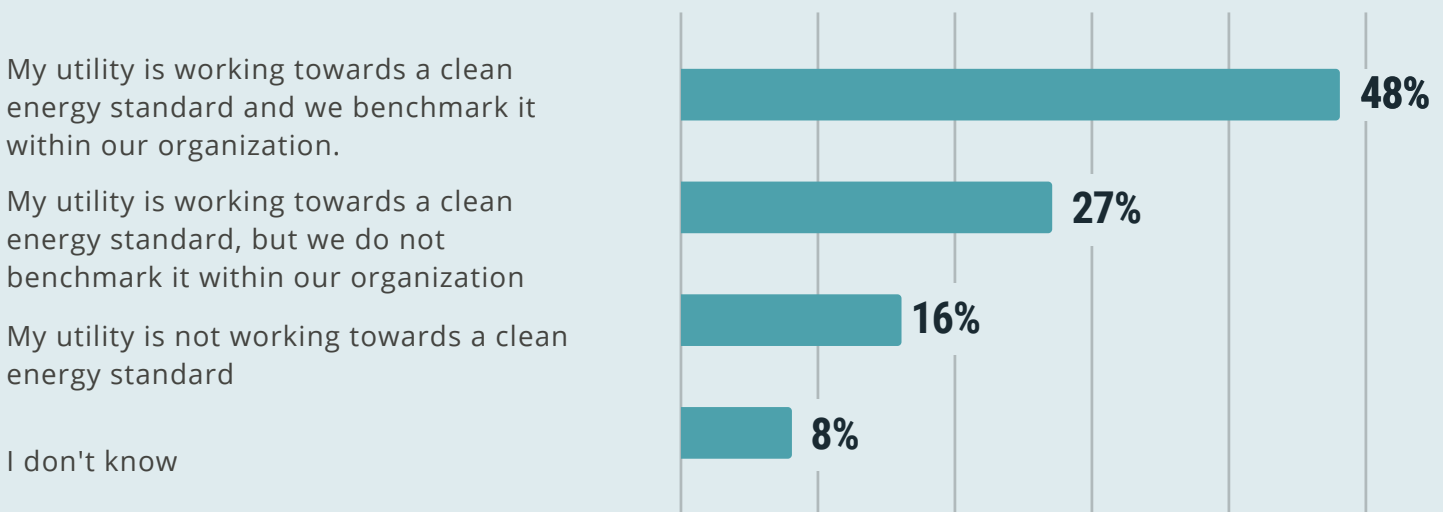


Fig. 4

HOW OFTEN DOES YOUR UTILITY BENCHMARK DECARBONIZATION EFFORTS?

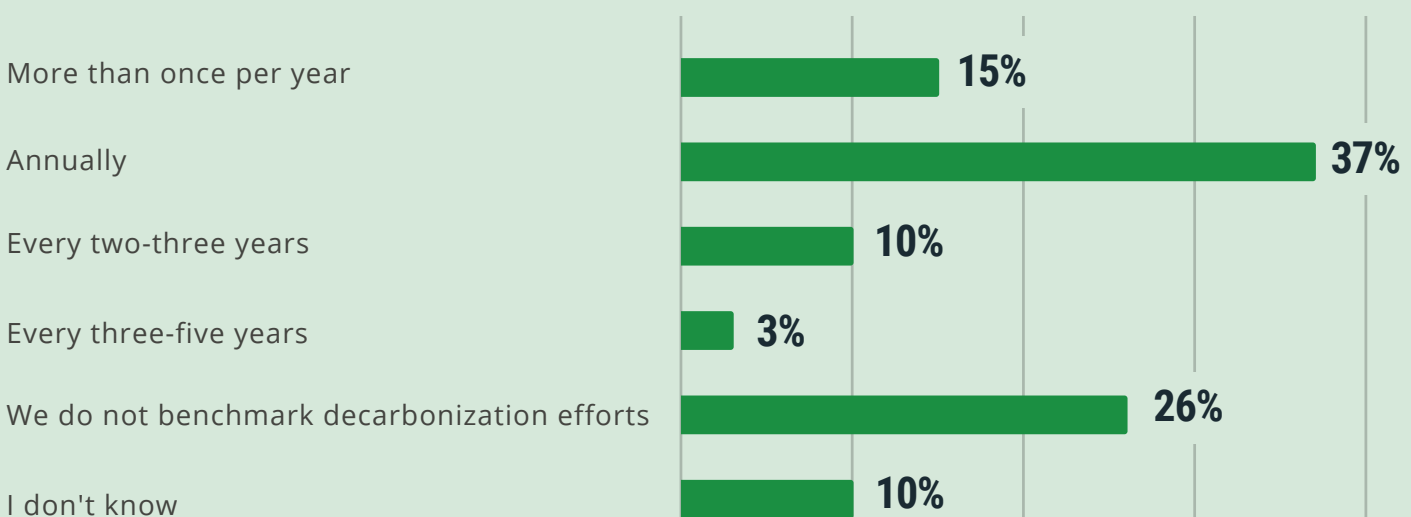


Fig. 5

ARE YOUR DECARBONIZATION PROJECTS PUBLIC INFORMATION?

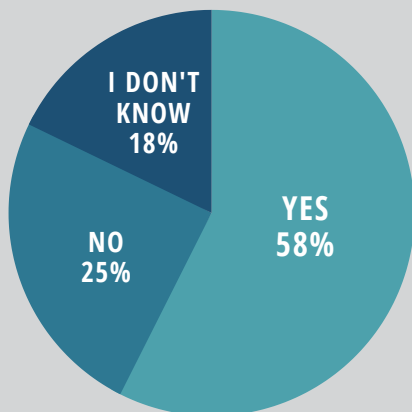


Fig. 6

While **58%** of utilities said their decarbonization projects are public information, a quarter said they are not (Figure 6).

Another **18%** are unsure if the projects are public information, again highlighting the lack of information about decarbonization that utilities are sharing across their organizations.

As consumers demand more information about climate performance transparency, we expect more utilities to not only make their projects public, but to actively promote them. We saw evidence of this in our [previous survey](#) on decarbonization practices. 36% of respondents reported engaging in public relations campaigns to educate customers on renewable generation options.

THE FEDERAL PUSH



Along with consumers' demand for increased social responsibility from business and industry, there is pressure at the federal level for utilities to decarbonize. President Biden has called for **"a carbon pollution-free electricity sector no later than 2035,"** accelerating goals originally set for 2050.

HOW ARE UTILITIES MONITORING AND PLANNING FOR NEW LEGISLATION THAT IS SURE TO COME?

84% of respondents are tracking changes in federal legislation (Figure 7), so most utilities are likely aware of the more ambitious timeline, even though an executive order is not technically legislation. However, only 10% of utilities have accelerated their decarbonization plans as a result of that order (Figure 8). Over a third of utilities report they were already going to meet that goal, but another third are still “considering options.” As it stands now, with only 14 years until 2035, reaching this goal will be tentative at best.

IS YOUR ORGANIZATION TRACKING FEDERAL LEGISLATION THAT WILL AFFECT DECARBONIZATION GOALS FOR UTILITIES?

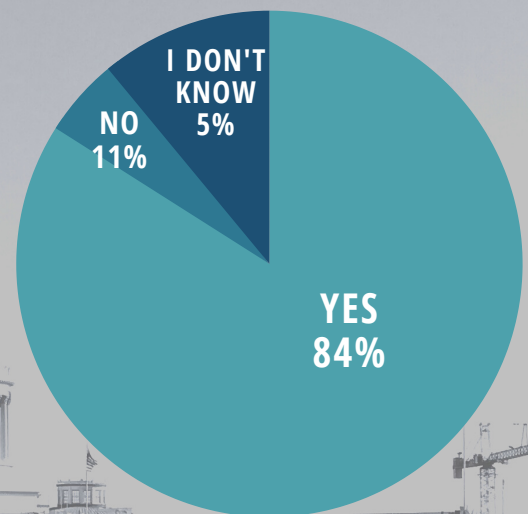


Fig. 7

HOW HAS THE BIDEN ADMINISTRATION'S EXECUTIVE ORDER ACCELERATING DECARBONIZATION TARGETS FROM 2050 TO 2035 AFFECTED YOUR DECARBONIZATION PLANS?

My utility already had plans to achieve these targets by 2035



My utility is awaiting more information and considering options

I was not aware of this order

It has accelerated our plans

Other

Fig. 8

DECARBONIZATION TIMELINES

Interestingly, utilities' perception about their ability to meet the 2035 goals is a bit more optimistic. 45% of respondents believe they will meet the goals on schedule (Figure 9), and 21% believe they will achieve them ahead of schedule. One possible explanation for the discrepancy between Figures 8 and 9 comes from an NPUC roundtable participant who expressed that federal policy can change from administration to administration, so their focus is more on local policy and demands from stakeholders, which may coincide with the federal direction or not. This sentiment might explain how some of the “considering options” or “other” respondents from Figure 8 are still confident in a 2035 decarbonization goal for their organization.

AT THIS TIME, DO YOU EXPECT YOUR UTILITY TO MEET THE NEW 2035 GOALS?

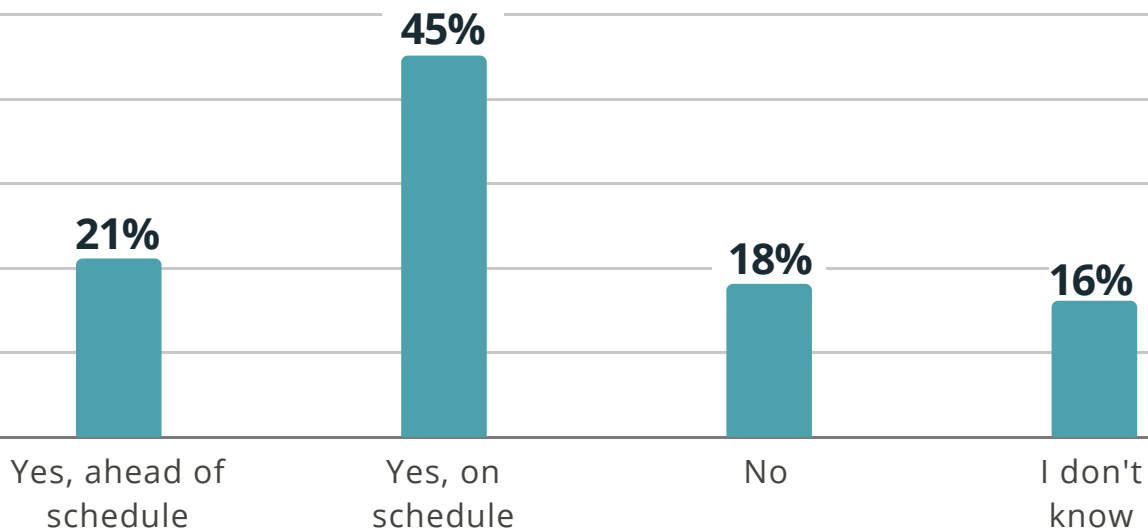
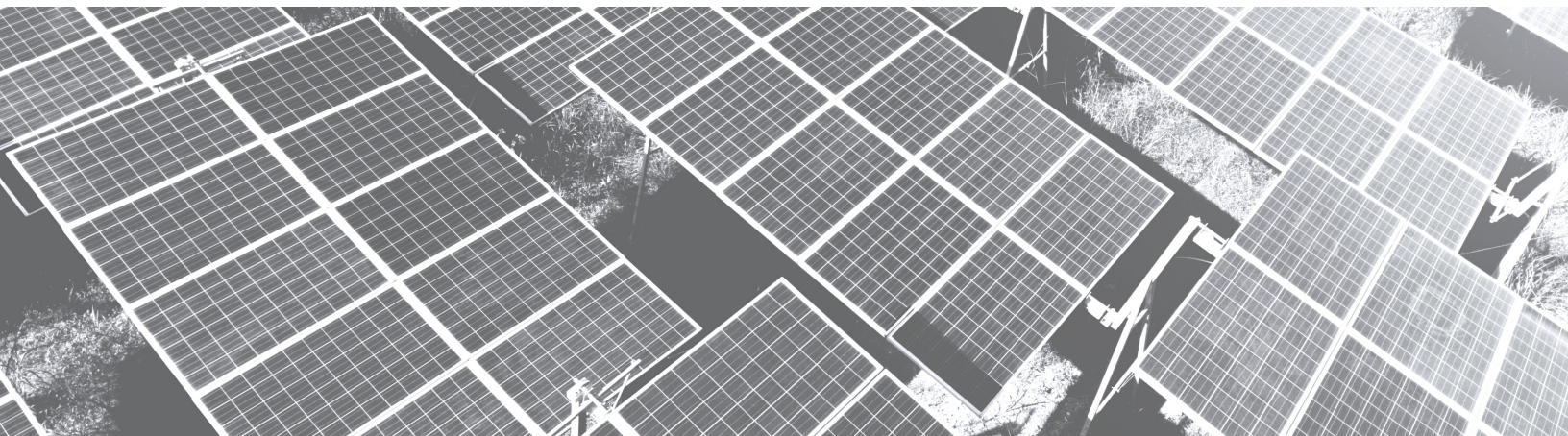


Fig. 9



Decarbonization will require a shift away from thermal generation, and many utilities reported having already started down that path (Figure 10). 30% have retired gas or coal plants in the last one to three years, and 21% plan to retire one within the next 3 years. Only 8% don't have plans to retire any plants within the next 15 years, so the transition away from coal and natural gas is happening at full steam, at least by the standard of utility operations. Carbon capture technology, an additional mitigation of greenhouse gas emissions into the atmosphere, has been talked about since [as early as 2005](#). It has only been implemented by 7% of our respondents so far (Figure 11), so the timeline for such technologies as a long-term solution in the industry is still nascent.

WHAT IS YOUR UTILITY'S TIMELINE FOR RETIRING COAL OR GAS FIRED POWER PLANTS?

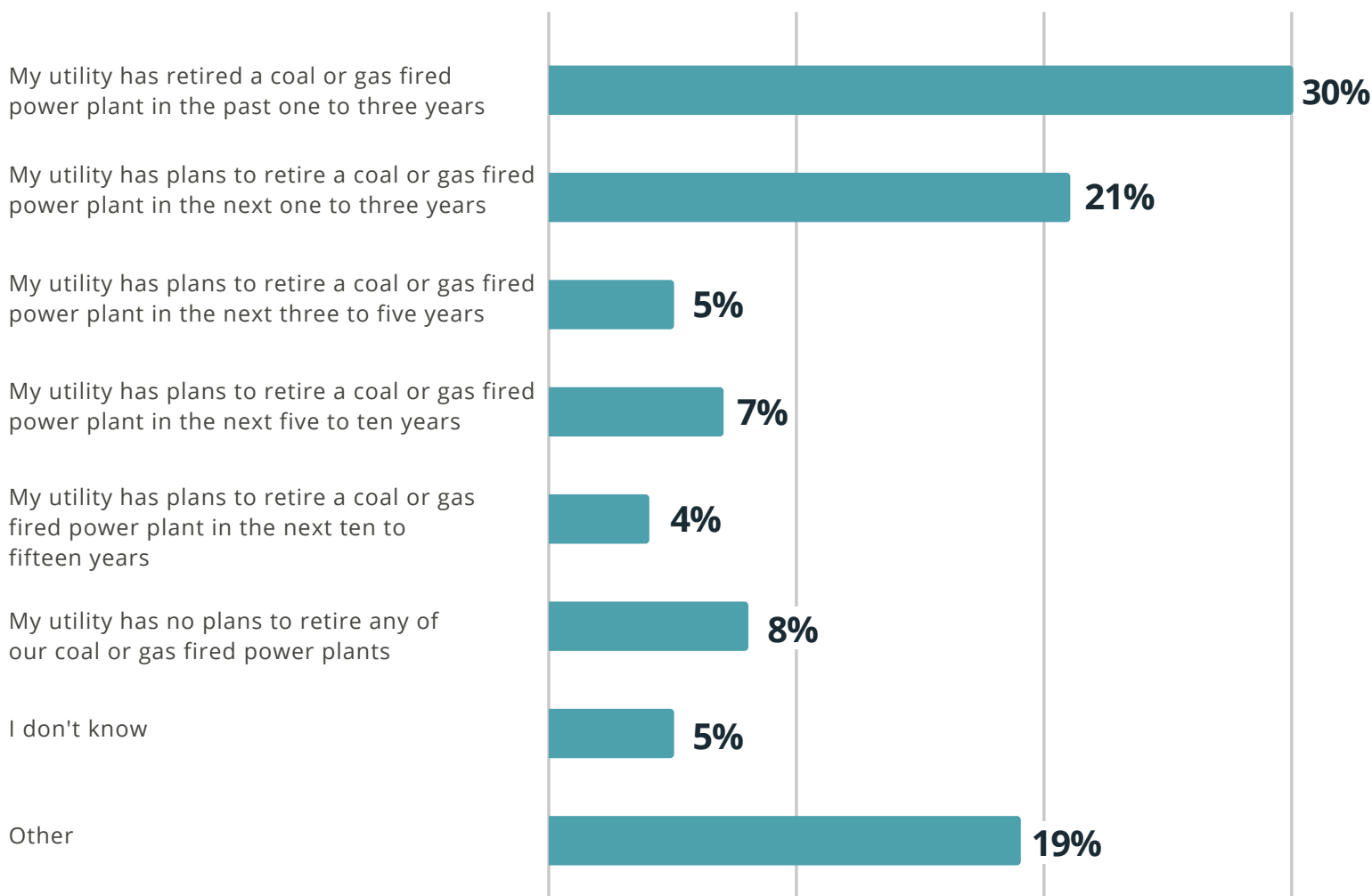


Fig. 10



IS YOUR UTILITY ENGAGED IN CARBON CAPTURE TECHNOLOGY?

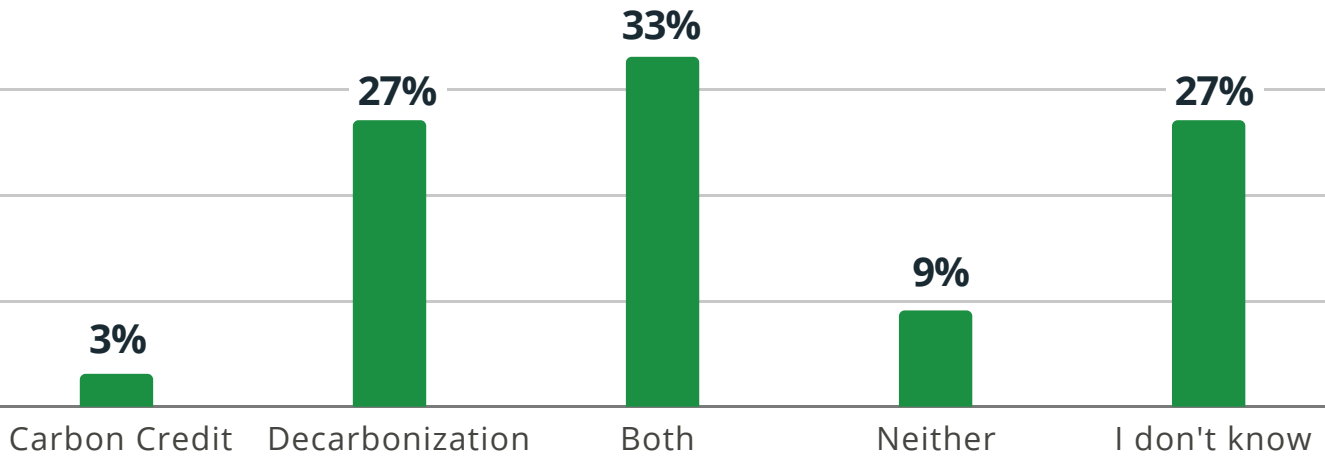


Fig. 11

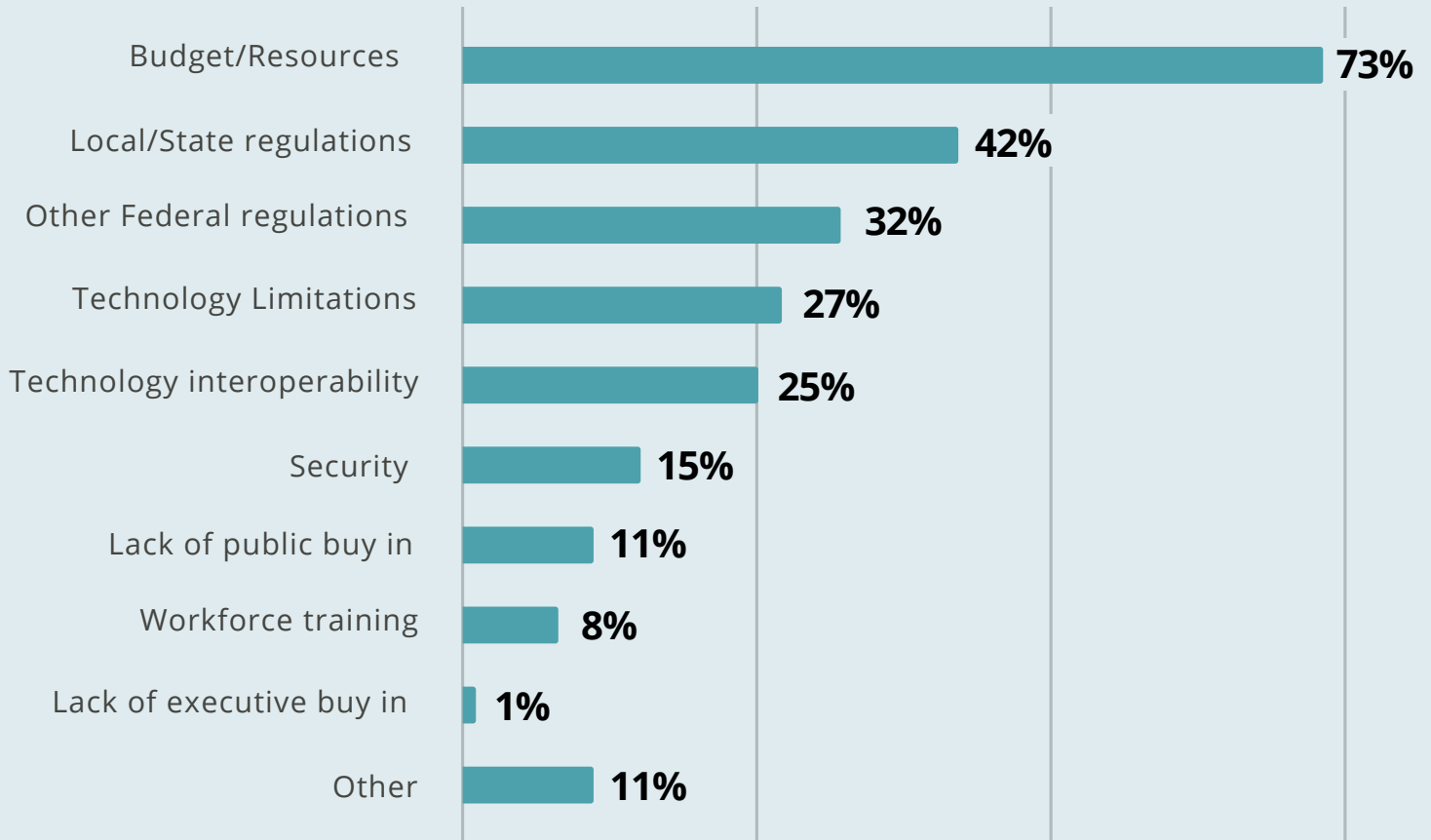
CHALLENGES



Not surprisingly, budget/resource constraint is the top challenge utilities face for meeting 2035 decarbonization goals (73%) (Figure 12). The next significant hurdle is the regulatory landscape, including local/state (42%) and other federal regulations (32%), with technology limitations (27%) and interoperability (25%) falling not too far behind. Decarbonization requires not only large investments in new technologies, but changes in business models, compliance rules, and organizational processes.

The industry is still in the midst of a massive transformation as it digitalizes and decentralizes. The third D, decarbonization, poses significant additional challenges for utilities to address. Encouragingly, executive buy-in does not seem to be an issue at utilities, and prompting from the top levels can set the tone and priorities for the rest of an organization.

WHAT ARE THE BIGGEST CHALLENGES YOUR UTILITY FACES TO MEETING 2035 DECARBONIZATION GOALS FOR YOUR UTILITY?



With under half of the respondents concerned about regulatory constrictions, especially at the federal level, we can surmise that ambitious regulatory goals are not a hindrance to the industry in the eyes of our utility respondents. If utilities' main challenge to decarbonization really is budgeting, and not the goals themselves, that is a solvable problem. Capital can be produced if there is a will to solve the problem, and with a problem so catastrophic, finding that will and capital should be vital to both the regulatory and utility communities.





CONCLUSION

While utilities are generally striving for long-term decarbonization, there is ambivalence around the timeline for achieving that goal. However, the push from the federal level along with investors' appetite for ESG standards will continue to drive utilities to make decarbonization a priority. 2035 may not be the hard deadline for zero-carbon that the Biden administration wishes it could be, but a majority of utilities are, or at least believe they are, on track for that goal.

That being said, the significant number of respondents who were unsure about the priorities, plans, and progress of decarbonization throughout their organizations is troubling as it shows a lack of enthusiasm or at least a lack of communication from the top surrounding these issues. All levels of job responsibility were represented by survey respondents, so we would like to see the uncertainty lower over time as it would demonstrate a more driven and holistic strategy, giving more hope for the 2035 goals.

As climate disasters continue to worsen and consumers demand more accountability, utilities will have to continue to ramp up their decarbonization efforts.

ABOUT THE NPUC

The National Public Utilities Council (NPUC) was formed in mid to late 2020 out of a series of conversations where public utilities were looking to speak with their industry brethren to benchmark decarbonization practices, share lessons learned across different geographic and socio-economic environments, and generally come to a place where a compendium of knowledge was stored on the subject.

NPUC's mission is to:

- Create a knowledge repository for Utilities to use in pursuit of their decarbonization goals
- Share knowledge across utilities and assist in lessons learned on decarbonization efforts
- Gather research and information for utilities to help prepare for possible federal regulations