

WIND ENERGY: CHALLENGE ACCEPTED

Thriving in a Post PTC Era





NAVIGATING AN INDUSTRY IN TRANSITION

The wind industry is in a significant state of transition. The phase-out of the Production Tax Credit (PTC) will end a key incentive that helped foster our industry's growth. At the same time, advancements within wind, and in other areas of the energy industry, are creating meaningful new opportunities.

To better understand the future of wind energy, we surveyed over **400 professionals** at this year's American Wind Energy Association conference (AWEA). Participants were diverse, representing owners and developers; turbine manufacturers; utilities; financiers; and other professionals.

Mortenson is pleased to share the following insights about potential pathways to success in a post-PTC era. We are dedicated to bringing ingenuity, industry knowledge, and technical expertise to bear as we move forward together as an industry.

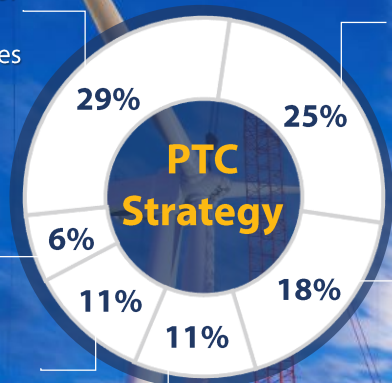
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WIND ENERGY CHALLENGE ACCEPTED

THRIVING IN A POST-PTC ERA

86%
are **OPTIMISTIC** about the
FUTURE OF WIND in America



Taking full advantage of immediate opportunities

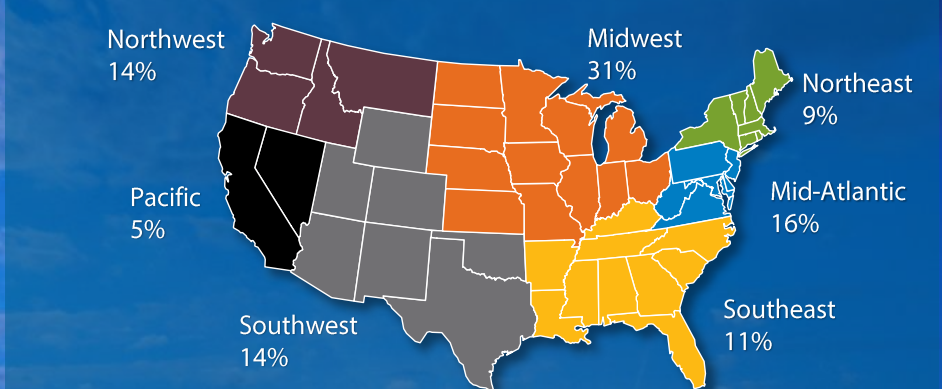
Being more strategic in future project and geography choices

Broadening energy related business mix

Other strategies

Lowering costs/being more competitive

Focusing on niches



FIVE YEARS FROM NOW...
WHICH REGION OFFERS THE OVERALL BEST ENVIRONMENT FOR WIND DEVELOPMENT?

Bring me a complete package including assured transmission

Have a robust balance sheet and/or financing

Know and align with my business goals

UTILITY/IPP ADVICE: Securing a PPA

WHAT'S NEXT IN ENERGY.™

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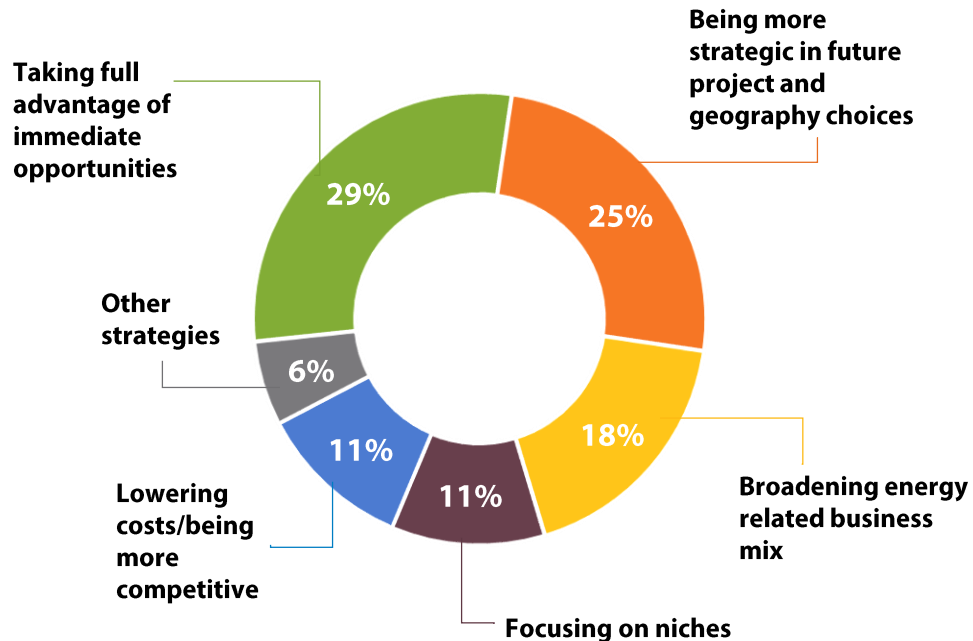


CAPITALIZE ON OPPORTUNITIES

In response to the PTC phase out, wind developers, owners, and IPPs are moving quickly to capitalize on near-term opportunities. They also recognize the need to be more strategic in longer-term project and geography choices.

Describe your business strategy as we head into the PTC phase out?

Developer, IPP, Owner Responses



MANY PROFESSIONALS ARE ALSO BROADENING THEIR MIX OF RENEWABLE ENERGY-RELATED BUSINESSES

Coded responses to an open-ended question.



CAPITALIZE ON OPPORTUNITIES

SELECT COMMENTS:

“Our priority is to capture the value that is clearly available before the PTC sunsets. It’s too early to tell the impact once we reach 2020.”

“We are actively deploying a strategy to reserve the maximum number of projects right now through down payments on turbines.”

“We are looking hard at the number of markets we’re in and which will be most economically viable in the future.”

“Our project development will be more focused on regions with higher value PPAs and more reliable wind.”

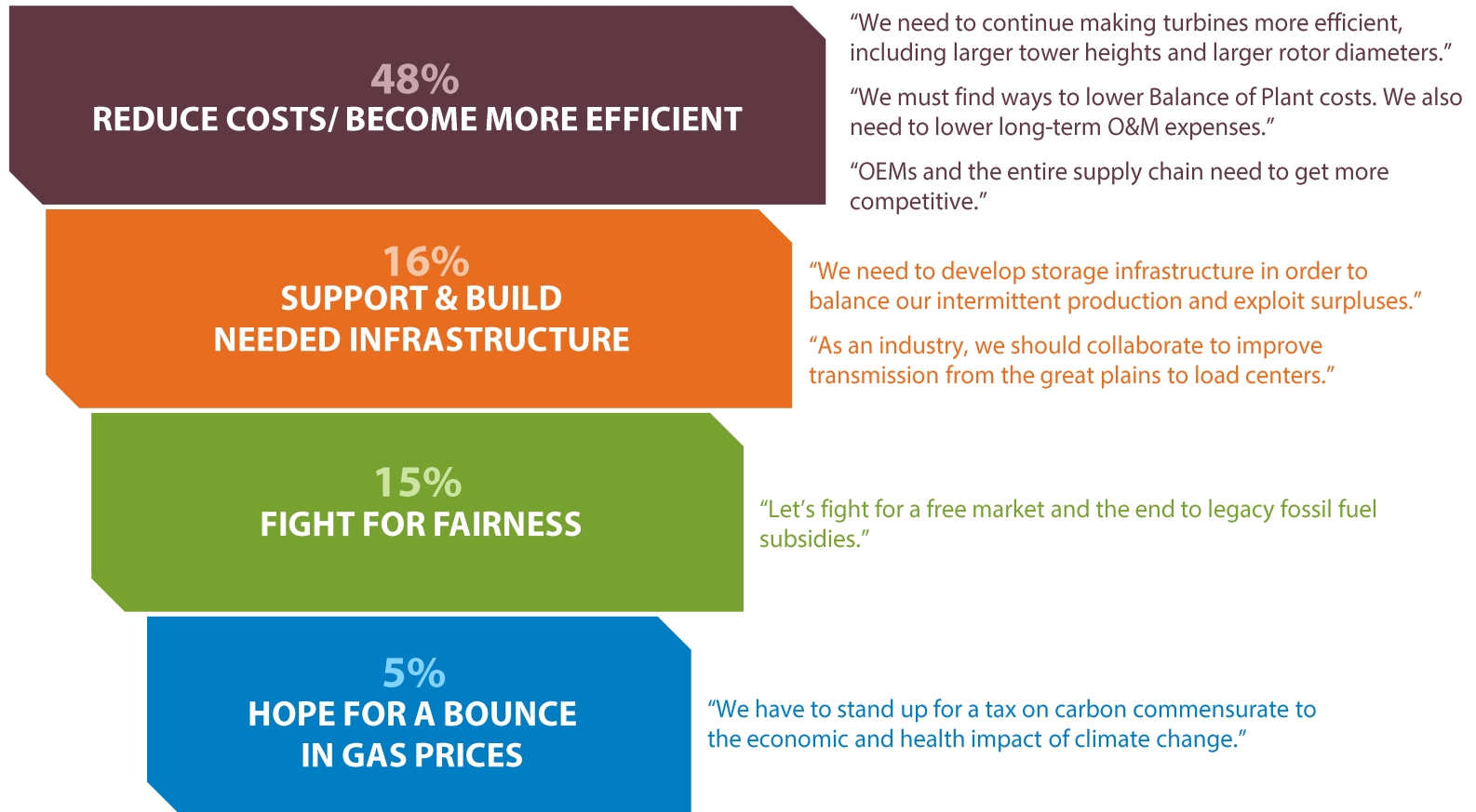
“We are looking to diversify into storage; other forms of renewables; energy efficiency; etc.”

SUCCESS THROUGH COST REDUCTION, EQUITY & INFRASTRUCTURE INVESTMENTS

When asked to describe how the wind industry can best succeed after the PTC, professionals emphasize a short list of critical items.

What main changes need to occur for our industry to thrive after the PTC phase out?

% of all responses*



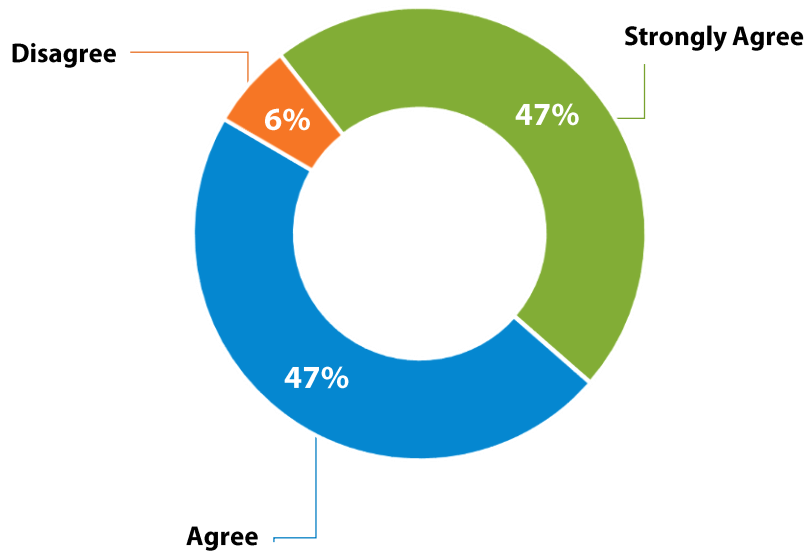
All other responses were 16% of Total.
*Responses were similar across audiences.
Coded responses to an open-ended question.

EMBRACE ENERGY STORAGE

Virtually all professionals agree – many strongly – that electricity storage will be a game changer for the wind industry that will help counteract the impact of the PTC phase out.

Energy storage will ultimately be a game changer for the wind industry.

% of all responses*



*Responses were similar across audiences.

EMBRACE ENERGY STORAGE

They also believe that large scale energy storage will be viable within seven to eight years.

Large scale energy storage will be viable in:

Average response by audience

7.2 YRS
UTILITIES

7.1 YRS
DEVELOPERS, IPP,
OWNERS

8.4 YRS
TURBINE
MFG

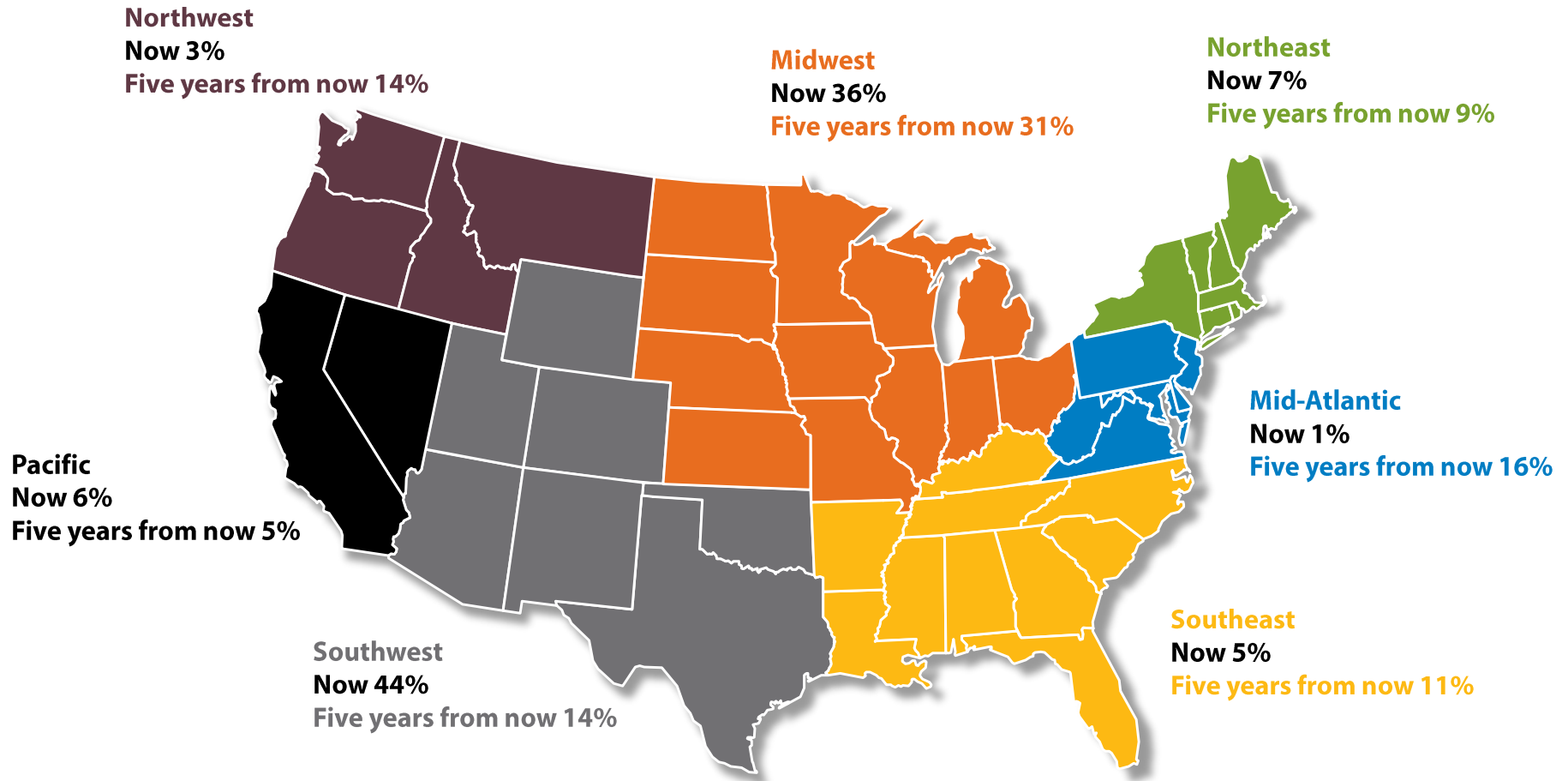
7.7 YRS
OTHER
PROFESSIONALS

MARKET EXPANSION OPPORTUNITIES

Northwest, Northeast, Mid-Atlantic, and Southeast markets are predicted to improve in attractiveness.

Which region offers the overall best environment for wind development?

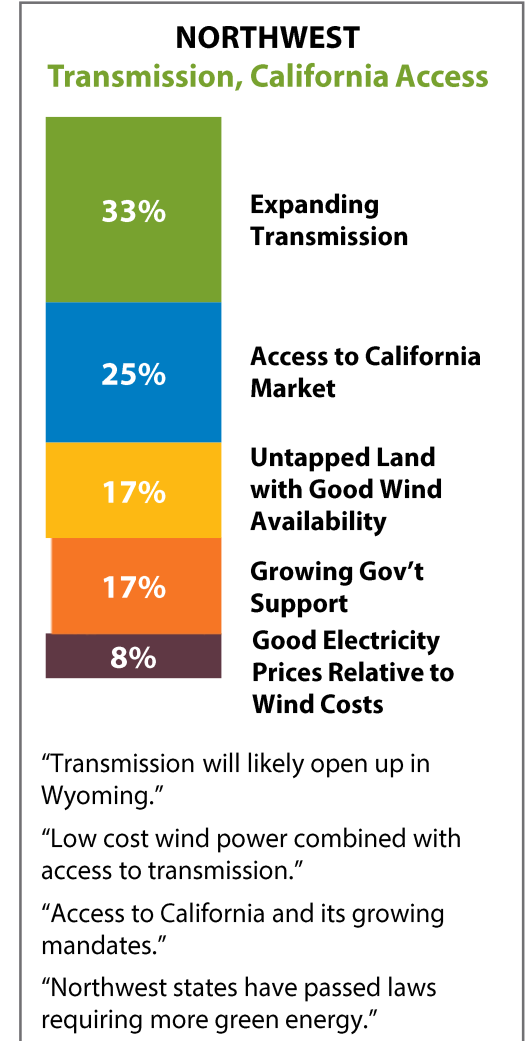
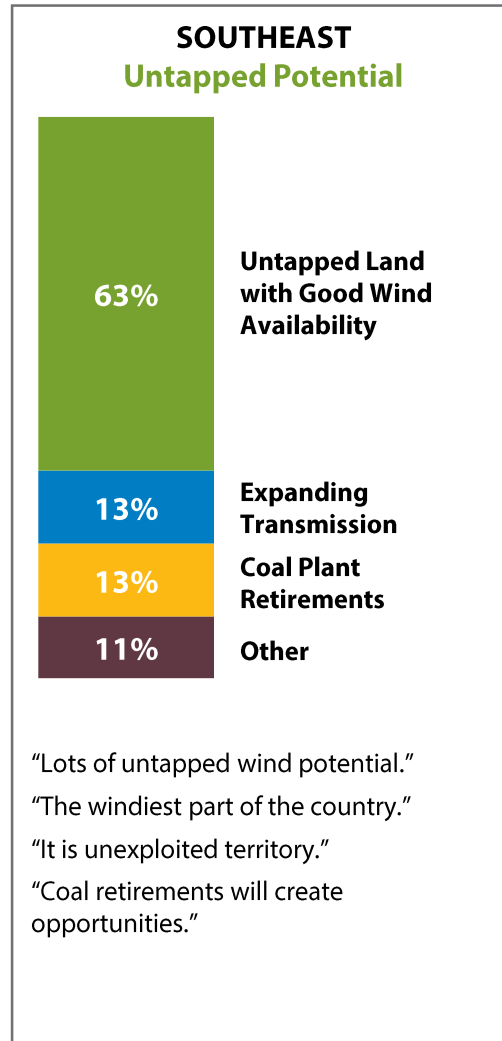
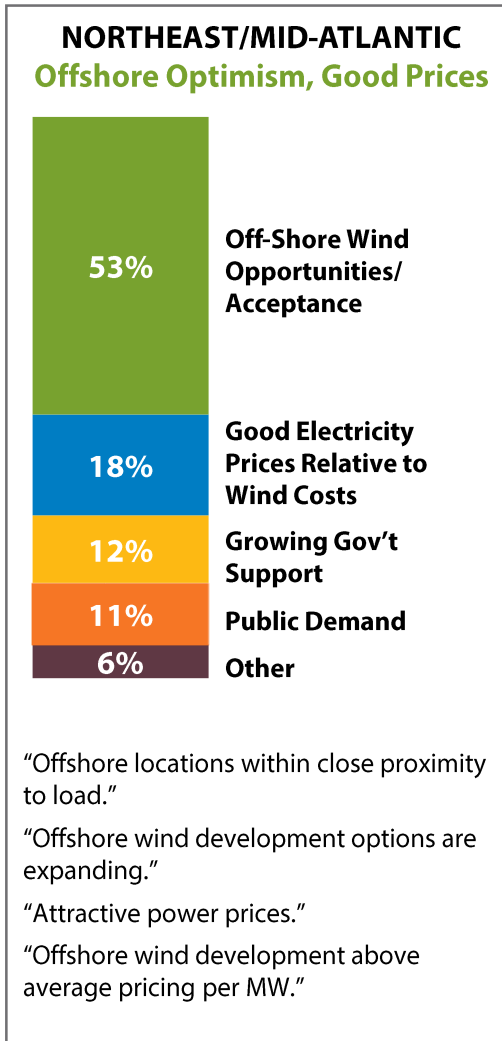
% of all responses*



*Responses were similar across audiences.

MARKET EXPANSION OPPORTUNITIES

Why will the following areas be attractive?



KNOW YOUR CUSTOMERS

Developers trying to secure power purchase agreements need to know their customers' business and deliver complete solutions.

What advice would you give to a wind developer trying to secure a Power Purchase Agreement?

Utility/IPP Responses

Bring me a complete package including assured transmission

"A site well situated on the transmission system may be more valuable to me that one with better wind resources."

"Offer a delivered product instead of an 'at the busbar' product."

Know & align with my business goals

"Understand my business model and how I make money and what is important to me."

"Know my project expectations and align to them."

Have robust balance sheet and/or financing

"Be creative in structuring finance. Find alternative homes for basis and shape risk."

"Have a strong balance sheet along with solid development experience."

Other advice

"Know local electricity needs."

"Know the local permitting process."

"Help me understand the long-term, not just the here and now."

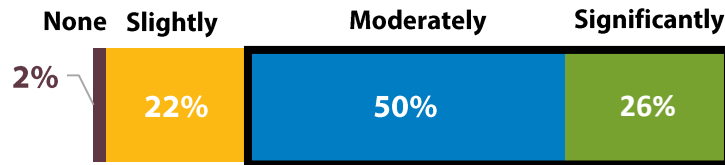
Coded responses to an open-ended question

EMBRACE NEW CUSTOMERS

Wind PPA's with corporate/industrial customers have grown noticeably over the last several years. Most professionals believe these corporate/industrial customers will continue to drive growth as they support sustainability and as a guard against energy price increases.

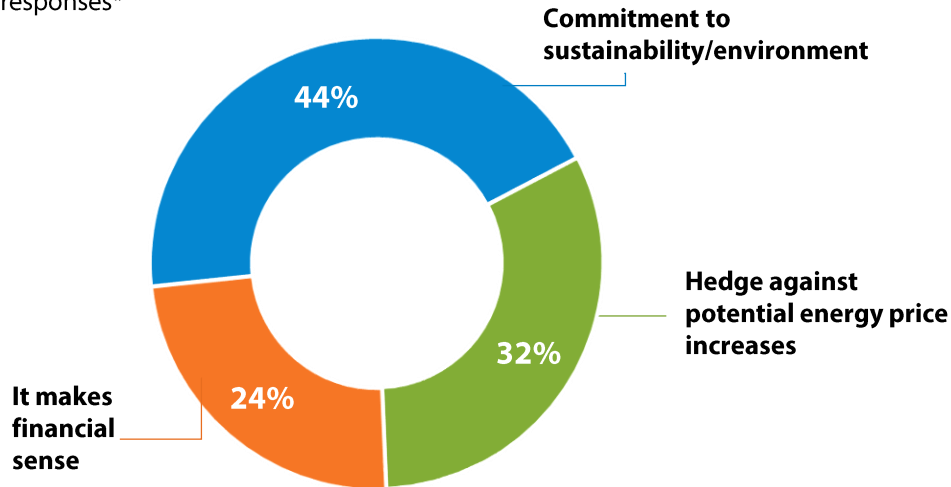
How much will future growth be driven by corporate/industrial PPA's?

% of all responses*



What is driving corporate/industrial PPA growth?

% of all responses*

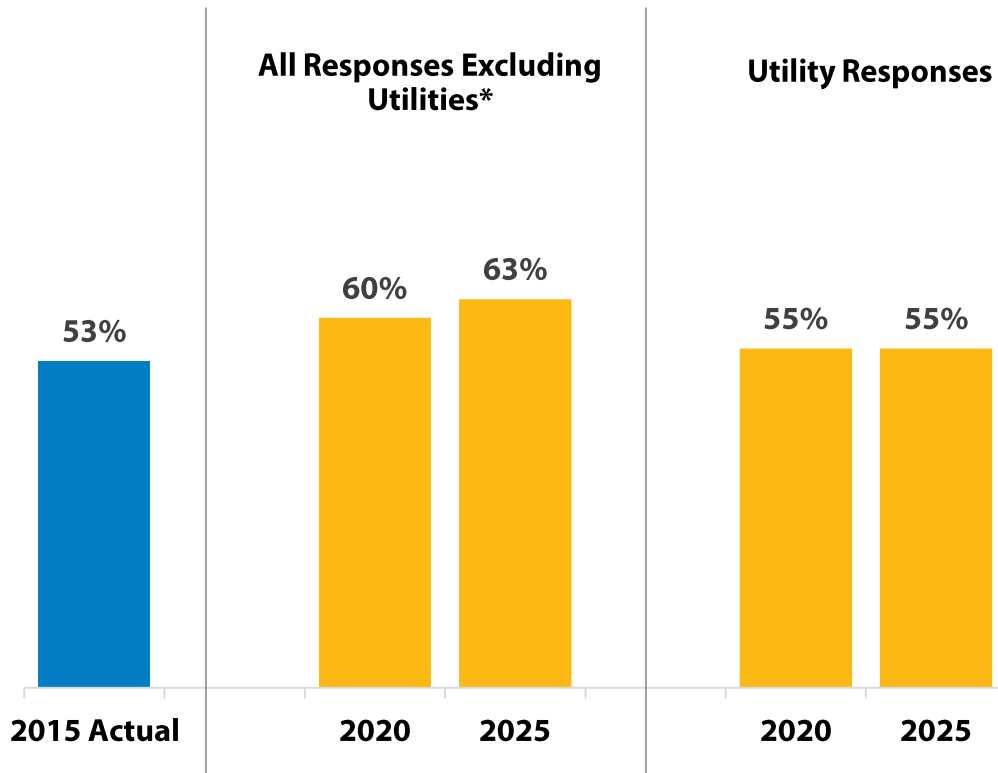


*Coded responses to an open-ended question. Responses were similar across audiences.

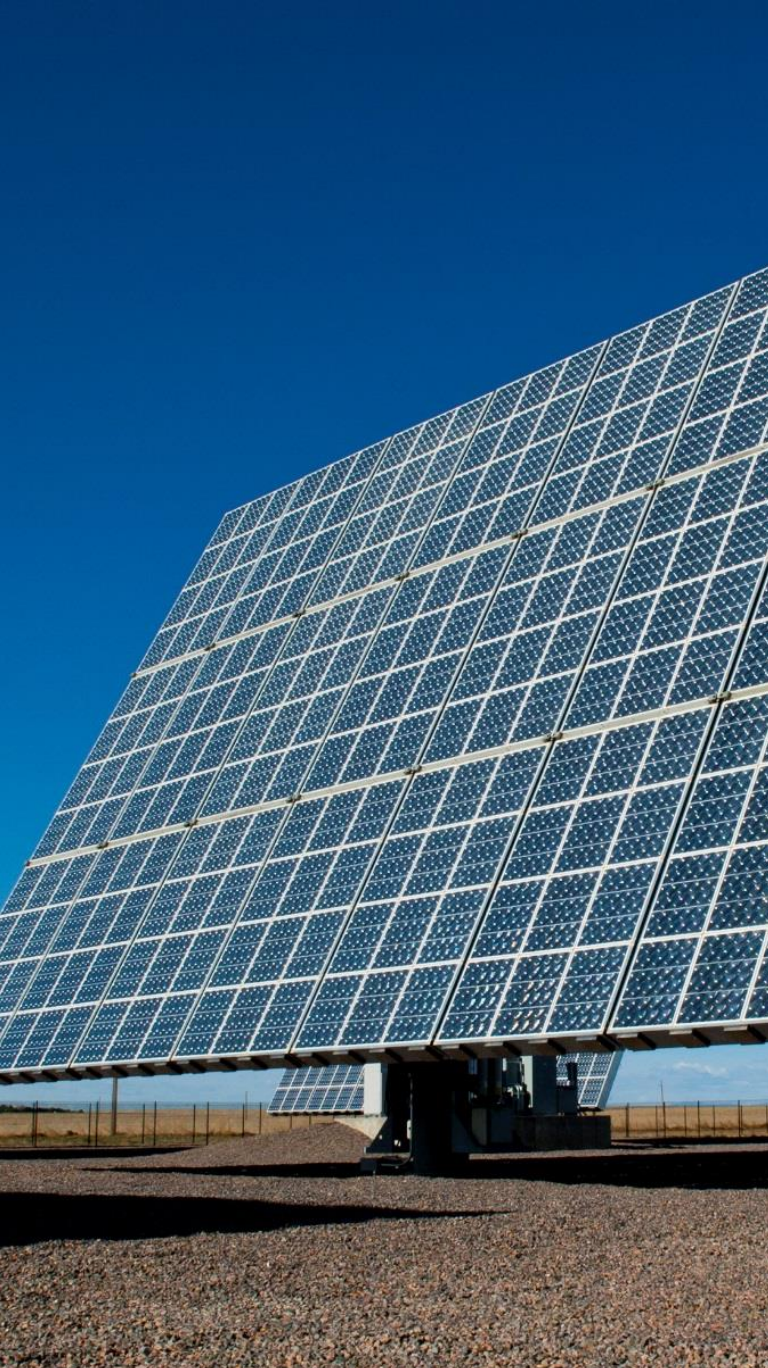
EMBRACE NEW CUSTOMERS

Most professionals also believe corporate/industrial PPA's will account for a higher proportion of the market in the future than they do today. However, Utilities are less likely to believe so.

What percent of new wind power capacity additions will be purchased by corporations in:



*Responses were similar across audiences.

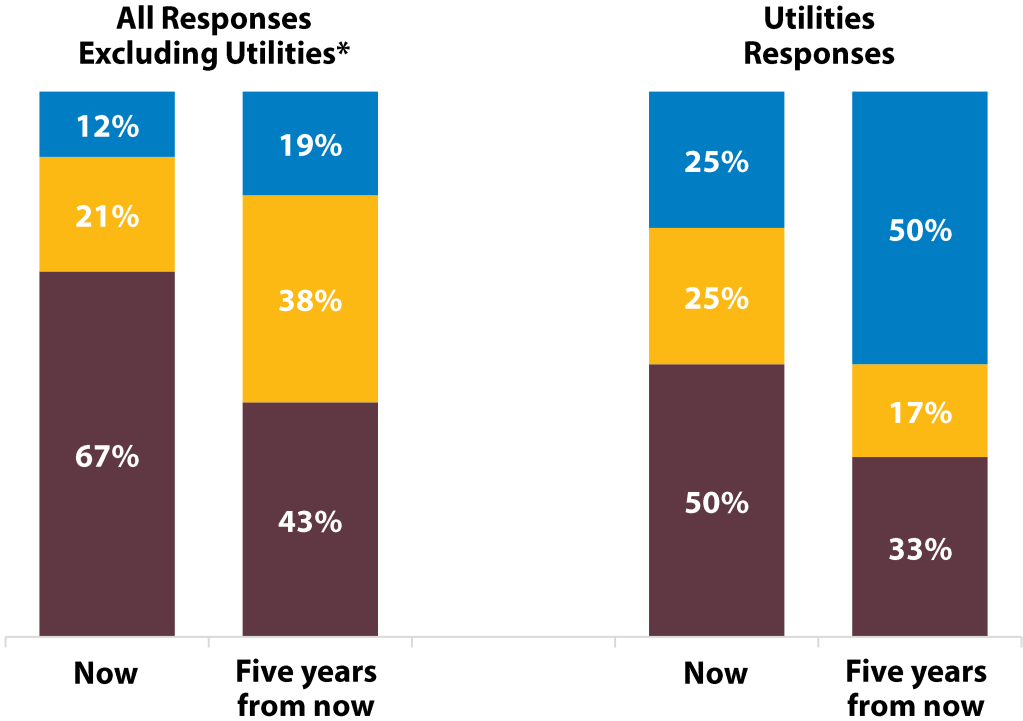


HEDGE YOUR BETS WITH SOLAR

Professionals recognize the growing competitiveness of solar. Most foresee utility scale solar gaining the most in competitiveness.

Absent of government subsidies or credits, which is the most competitive renewable energy source for new generating investments?

■ Wind ■ Utility Scale Solar ■ Distributed Solar



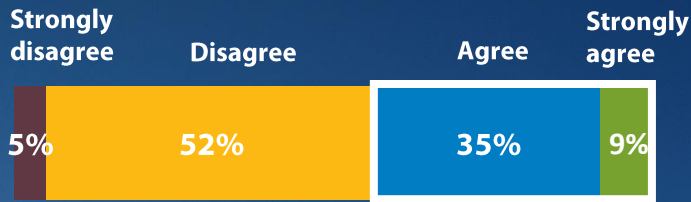
*Responses were similar across audiences.

EXPECT UNCERTAINTY

Nearly half (44%) of wind professionals expect that a disruptive technology will challenge our industry. More than anything else, these professionals feel the disruption will come from breakthrough we can't predict at this time.

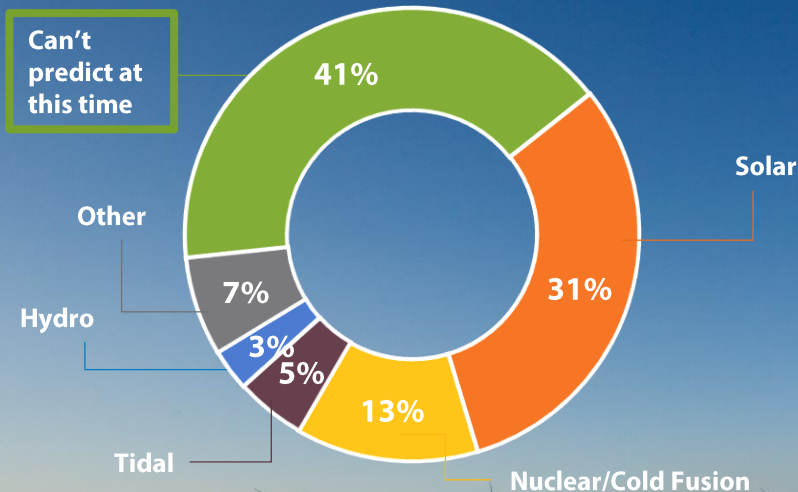
Over the next 5-10 years, a disruptive technology will meaningfully challenge the wind industry.

% of all responses*



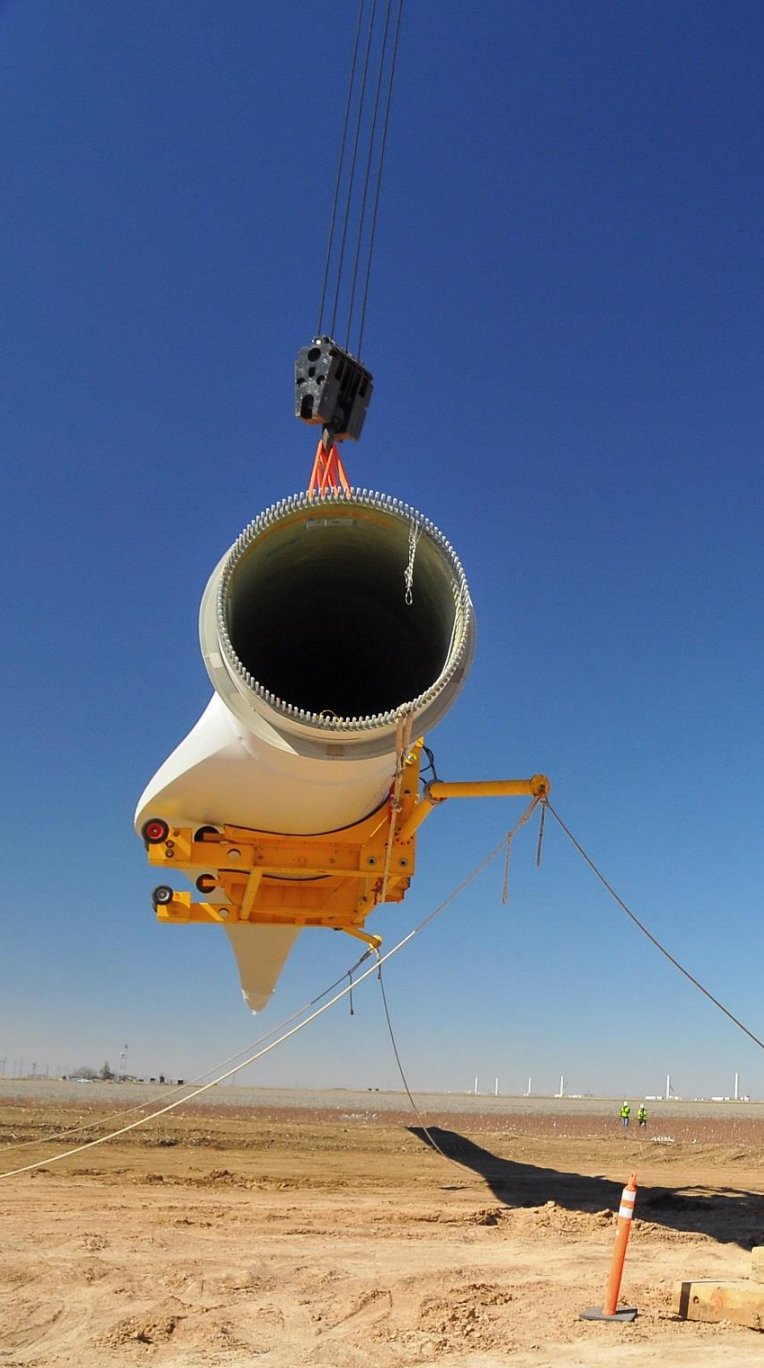
What will the disruptive technology be?***

% of all responses*



"I don't know what the technology will be, but we didn't expect fracking to make natural gas such a dominant player five years ago either."





BELIEVE IN CONTINUED GOVERNMENT SUPPORT

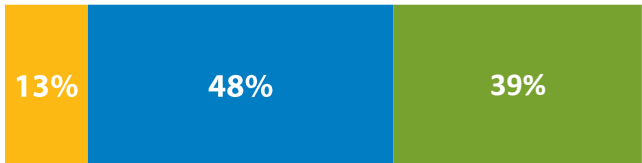
The continued evolution of government regulations and standards, and their implications for fossil fuel retirements, are seen as driving wind growth even as the PTC is phased out.

How much will future wind growth be driven by:

% of all responses*

■ None ■ Slightly ■ Moderately ■ Significantly

FOSSIL FUEL GEN RETIREMENTS



CLEAN POWER PLAN (CPP)



RENEWABLE PORTFOLIO STANDARDS (RPS)



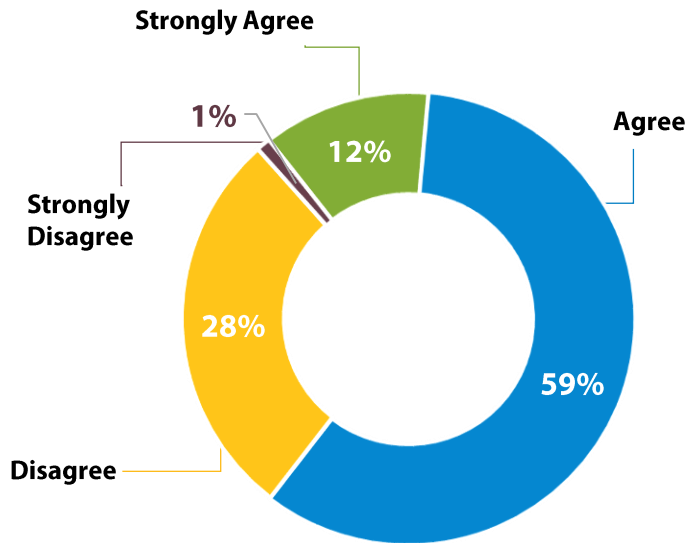
*Responses were similar across audiences.

BELIEVE IN CONTINUED GOVERNMENT SUPPORT

Strong optimism that the government will continue to support wind is perhaps best illustrated by the majority of professionals who feel some new form of tax subsidy will be passed to counteract the PTC phase out.

New legislation will be passed as the PTC is phased out keeping some form of tax subsidy in place.

% of all responses*

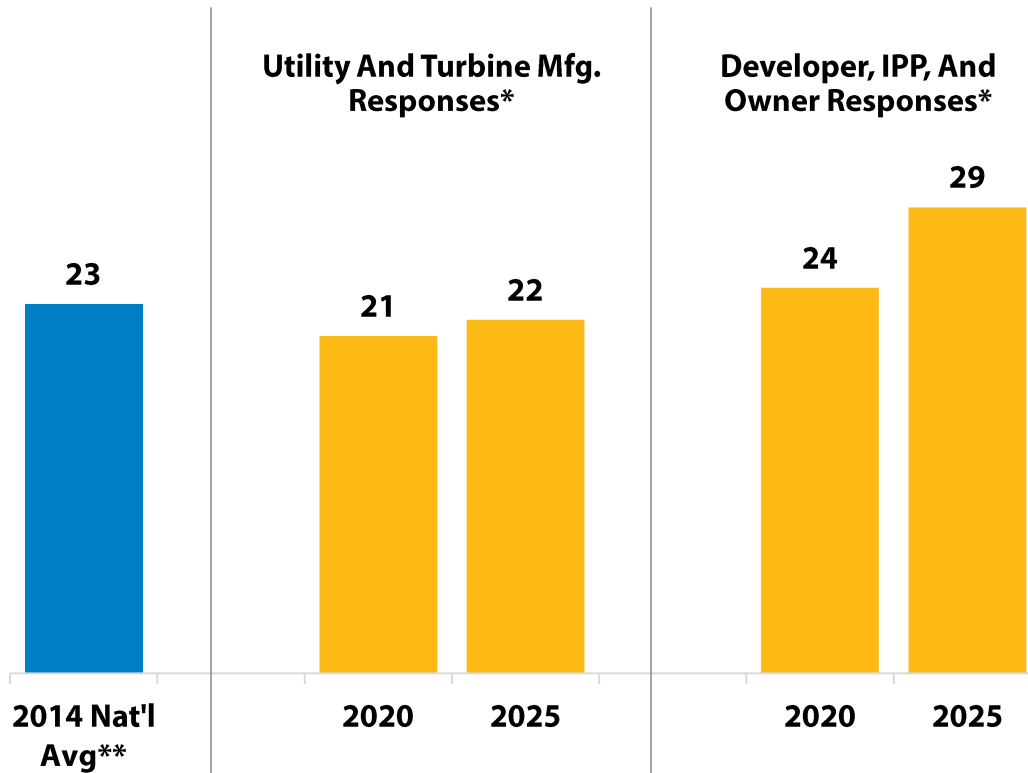


*Responses were similar across audiences.

BELIEVE IN STABLE POWER PURCHASE PRICES

Professionals believe that future power purchase prices will remain comparable to where they are now. Developers, IPPs, and Owners are more optimistic in their outlook than Utilities and Turbine Manufacturers.

What will PPA prices be in:



*Responses were similar across grouped audiences.
**2014 Wind Technologies Market Report, U.S. Dept. of Energy





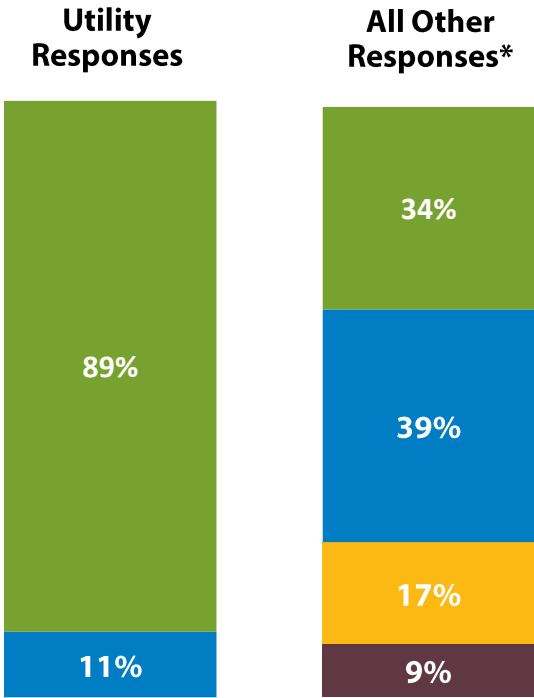
BELIEVE IN A STABLE POWER PURCHASE PRICES

Most professionals believe that gas prices will rise, which will not only help PPA prices, but also help drive wind energy growth. Utilities stand out from others in their belief in higher gas prices and the benefit they will bring to wind.

How much will future wind growth be driven by higher gas prices:

% of all responses*

■ None ■ Slightly ■ Moderately ■ Significantly



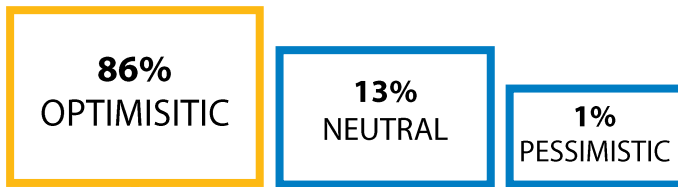
*Responses were similar across audiences.

BELIEVE IN A STRONG FUTURE

Nearly all wind professionals are optimistic for the future of our industry. Wind is competitive, and many believe the future is ours if we can continue to innovate and move forward.

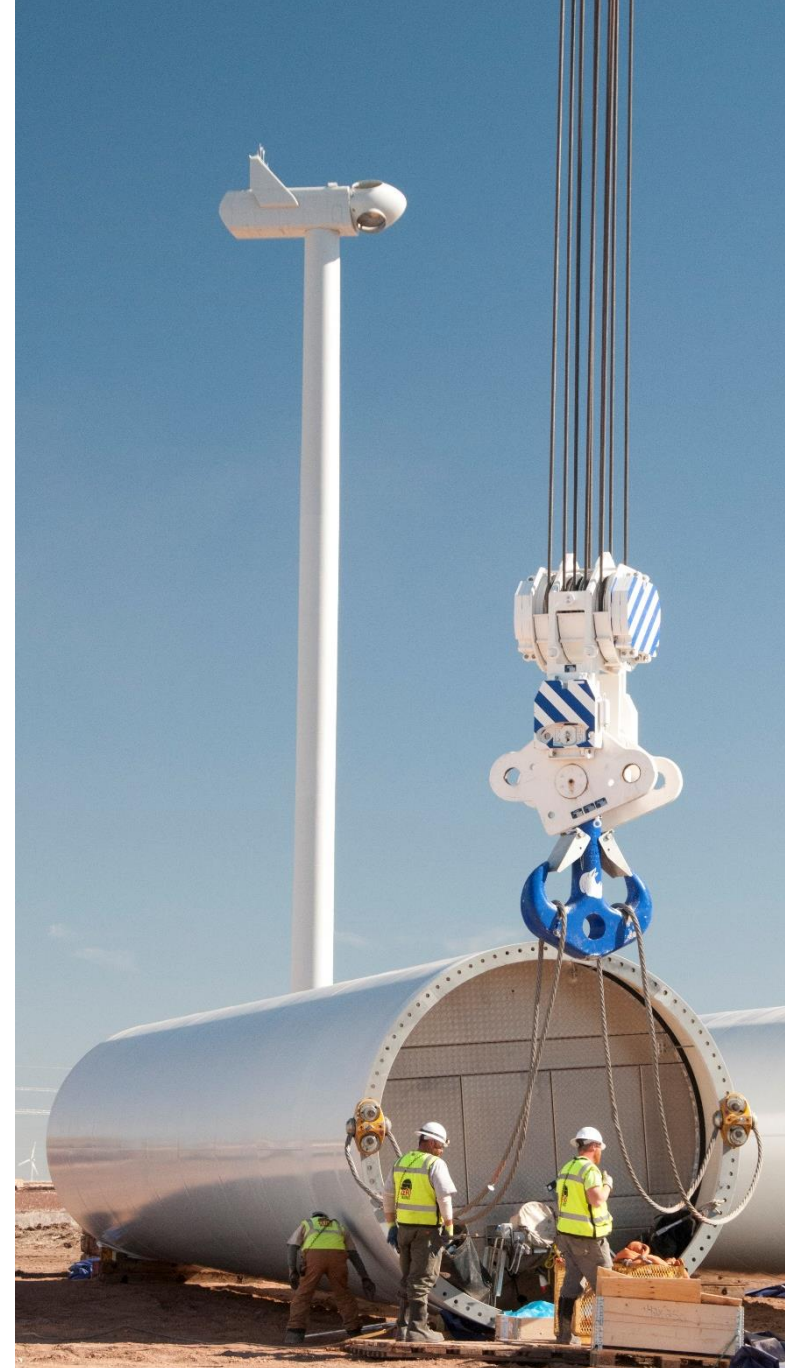
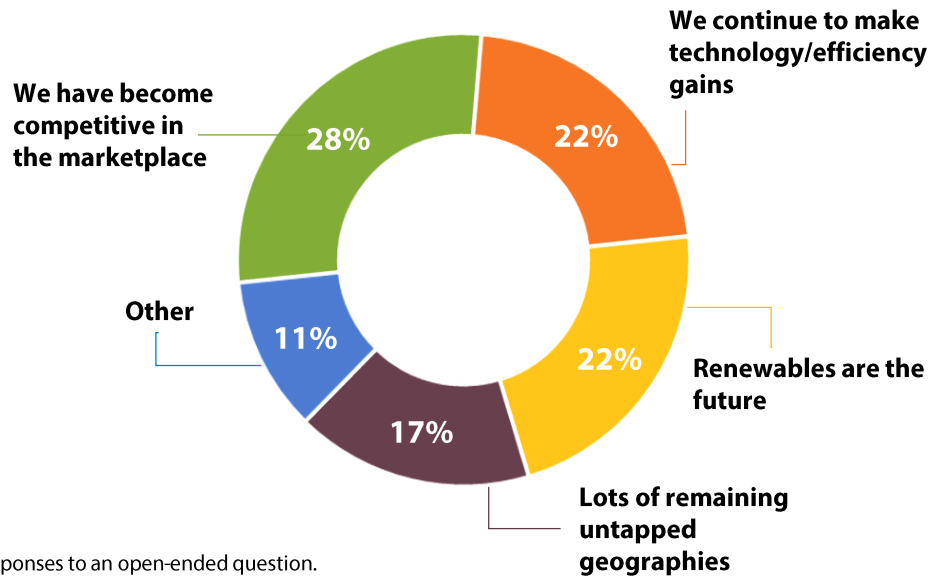
Thinking about the future of wind in America, are you:

% of all responses*



Why are you optimistic?

% of all responses*



*Coded responses to an open-ended question. Responses were similar across audiences.

BELIEVE IN A STRONG FUTURE

SELECT COMMENTS:

“We have reached a competitive price and will continue to make technology improvements.”

“Wind technology keeps getting more and more affordable.”

“There are still plenty of places and resources to add wind power.”

“Wind energy adoption is a solution to a growing environmental crisis.”

“There is an acceptance that renewables are part of the overall energy portfolio.”

“Wind energy remains a great alternative to fossil fuels and nuclear power.”





ACCEPTING THE CHALLENGE

Industry leaders are confident wind will thrive in the future. But, this will require the industry to do the following:

- High-quality, competitive, and reliable wind projects that solidify our industry's critical position within the national energy infrastructure.
- Focus on cost reductions and efficiency gains in every aspect of our supply chain, operations, and maintenance.
- Understand our customers' business and maximize emerging corporate and industrial opportunities.
- Advocate for equity in relation to fossil fuels.
- Support the development of essential transmission infrastructure.
- Form a strong partnership with the emerging energy storage industry to develop viable solutions that match generation to demand.
- Monitor technology developments across the entire energy landscape and find ways to optimize our industry's role.
- Expect change and challenge ourselves to be flexible and adapt.



THANK YOU

We sincerely thank the energy professionals who participated in this study . Your input is tremendously valued and greatly appreciated. Our aim at Mortenson is to be in lockstep with customers and partners, resulting in a service experience that's second to none.

Mortenson is a national leader in renewable and energy infrastructure projects, with more than 21 years of experience. We know what's coming next because we've been at the front end of industry change before.

We are committed to finding new innovations and new ways to deliver projects that enhance the success of our energy partners . And we're ready to push the envelope and break some conventions to help take the wind energy industry to a new level.

We welcome the opportunity to share more with you about our expertise, knowledge and unique capabilities to provide world-class service.

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