

THE DIRTY TRUTH

About Utility Climate Pledges

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EXECUTIVE SUMMARY

To protect our planet and communities from disaster, we must do everything we can to limit global warming to 1.5°C (2.7°F). This next decade is critical to our chances to decarbonize and hit an emissions pathway consistent with a 1.5°C future.

While this is a daunting timeline, the clean energy alternatives are available to make this transition on the needed time frame. There is no time to waste and no excuse for failing to act. Cleaning up the electricity sector is the key to economy-wide decarbonization, and electric utilities have a large role to play in making sure we are on the path toward a livable future. Many utilities have stated climate goals. However, those goals are meaningless greenwashing without utilities taking the necessary actions to decarbonize. There are three key things utilities must do to enable us to avoid catastrophic warming: They must retire existing coal plants by 2030, terminate plans to build new gas plants, and build clean energy much faster.

In this report, we examine utilities' performance on each of these three necessary actions. Our analysis is based on integrated resource plans (IRPs) and major announcements for the 50 utilities that remain the most invested in fossil fuel generation.³ These include investor-owned utilities, power authorities (like the Tennessee Valley Authority), generation and transmission co-ops, and large municipal utilities. Overall, we examine plans for 79 operating companies owned by 50 different parent companies, as detailed in the appendices.⁴ These 50 companies own half of all remaining coal and gas generation in the nation — 1,310 million megawatt-hours

(MWh) of coal and gas generation.⁵ We find there is a stark difference between utilities' existing coal and gas generation (1,310 million MWh) and how much clean energy they plan to add this decade (only 250 million MWh). In other words, despite 33 of these companies having a public climate goal, there is an enormous gap between utilities' current practices and what they need to do to protect people and the planet.

STUDY SCOPE

50 parent companies, comprised of 79 operating companies, which own half of all remaining coal and gas generation in the US.

We analyzed their plans as of December 1, 2020 to

- 1. Retire coal**
- 2. Stop building new gas plants**
- 3. Build clean energy in this next, crucial decade.**

We scored companies based on their plans to retire coal-fired power plants, stop building new gas plants, and build clean energy, all of which are necessary steps to keep warming under 1.5°C. We find that, apart from a few leaders, these companies are falling short on all three of these necessary actions.

KEY FINDINGS:

- We assigned a score to every utility based on its plans to retire coal, stop constructing new gas plants, and build new clean energy. The aggregate score for all companies studied was 17 out of 100.
- The companies studied account for 68 percent of remaining coal generation. They have committed to retire just 25 percent of their coal generation by 2030.
- Thirty-two of the operating companies included in this study are planning to build new gas plants — totaling over 36 gigawatts (GW) through 2030. That is over 40 percent of the total gas plants slated to be built across the US through 2030.
- The companies studied plan to add 250 million MWh of new wind and solar energy to the grid between 2020 and 2030. This is equivalent to only 19 percent of their current coal and gas generation and is therefore wholly inadequate to bring about a swift transition to a zero-carbon grid.
- The average score was 20 out of 100 for utilities with a net-zero climate pledge and 14 out of 100 for utilities without such a pledge, showing that utilities' corporate pledges mean little in terms of action.
- While electric utilities have pledged to decarbonize, they fall far short of what is necessary to protect people and the planet.

THE CLIMATE IMPERATIVE AND ROLE OF THE ELECTRIC POWER SECTOR

KEY FACTS:

- The electric sector is the cornerstone of economy-wide decarbonization.
- To maintain a livable planet and put us on a pathway consistent with a 1.5°C future, US utilities need to phase out coal and reduce greenhouse gas emissions by at least 80 percent by 2030.
- We can transition to clean energy cost-effectively: The US could achieve 90 percent zero-carbon electricity by 2035 while lowering electricity costs.
- Today, clean energy options are often cheaper than building and operating a new gas plant and are likely to be more cost-effective than continuing to run an existing gas plant by the early 2030s.

This is a pivotal decade for the future of our climate, our planet, and humanity itself. In 2018, the Intergovernmental Panel on Climate Change (IPCC) published a landmark report which concluded that to stop the worst effects of climate change, we must limit global warming to 1.5°C.⁶

To do that, we must cut planet warming emissions globally by about half by 2030. If we miss this target, the risk of “long-lasting or irreversible changes” and impacts on ecosystems, human health, and well-being increases drastically.⁷ Climate science is clear that we must make significant progress on decarbonization in the coming decade to avoid the worst impacts of climate change. According to research from Climate Analytics, to achieve a 1.5°C pathway, developed countries like the US must phase out coal by 2030 — which the Sierra Club has been demanding for more than a decade.⁸ Now public support is growing for a fully decarbonized electric sector by 2030 or 2035 at the latest.

“The next few years are probably the most important in our history.”

—DEBRA ROBERTS, Co-chair of IPCC Working Group II⁹

Carbon emissions from the electric power sector have been on a steady decline, falling 33 percent between 2005 and 2019. In contrast, carbon emissions from the transportation, buildings, and industry sectors have remained relatively constant (Figure 1).¹⁰ The key to unlocking the needed carbon emissions reductions in these sectors is electrification powered by a clean electric sector.¹¹ A clean electricity grid can unlock decarbonization of 70 to 80 percent of the entire US economy through electrification of transportation, buildings, and parts of industry.¹² Evolved Energy Research found in its November 2020 study that “To reach net-zero at the lowest overall cost to the US economy, electricity must set the pace, decarbonizing

first, fastest, and most deeply.”¹³ In *Rewiring America*, a recent analysis of how to keep warming under 1.5°C, author Saul Griffith presents a “no-regrets pathway that is most easily summarized as electrify everything ... now.”¹⁴ We must produce the needed electricity through “massive deployments of wind and solar.”¹⁵ While the political hurdles are high, the technologies needed to get us to a livable future are available. But we’ll need more than technology to get us there: Among many other steps, we’ll need ambitious, binding commitments from electric utilities to transition to clean energy.

Figure 1: Carbon dioxide emissions from energy by sector



The historic decline in carbon emissions from the electric power sector has been due to less carbon-intensive sources replacing coal generation. Although clean energy has replaced much of the retired coal generation, a significant amount of new gas generation has also come online. When including only direct carbon emissions (i.e.,

the emissions at the power plant due to the burning of fuel), gas plants are roughly half as carbon-intensive as coal-fired plants. However, that gas must be extracted, processed, and transported to the power plant. At each stage of this “upstream” process, leaks of the potent greenhouse gas methane, which is the main component of gas, can occur and greatly increase the climate warming emissions associated with the gas plant.¹⁶ On average, when these upstream emissions are included, the climate impact of a gas plant is doubled.¹⁷ Overall, the replacement of coal generation by gas generation is not good news for the climate.

Wind and solar, on the other hand, generate carbon-free electricity and are cost-effective replacements for most existing coal and proposed new gas plants. The Rocky Mountain Institute examined the costs of “clean energy portfolios” (CEPs), a combination of wind, solar, storage, and demand-side management, and found that in the past decade alone, the cost of a CEP has declined by about 80 percent.¹⁸ Today, these clean energy options are often cheaper than building and operating a new gas plant. Further, they found that a typical CEP is likely to be more cost-effective than continuing to simply run an existing gas plant by the early 2030s. Research from Energy Innovation and Vibrant Clean Energy has shown that many coal plants could be replaced by clean energy and save customers money.¹⁹ Similarly, a recent report from the Goldman School of Public Policy at the University of California, Berkeley and GridLab found that the US could transition to producing 90 percent of its electricity from zero-carbon sources by 2035 while lowering electricity costs.²⁰ These studies reflect the continued drop in wind, solar, and battery costs that have driven decarbonization in the electric sector to date.

The clean energy transition also presents economic opportunities. A recent report from the Political Economy Research Institute found that with a bold stimulus plan, we could create 3.2 million jobs per year in renewable energy and over 700,000 jobs per year in energy efficiency.²¹

Despite having known that their fossil fuel generation contributes to climate change for the past 50 years, utilities have spread climate denial and slow-walked progress toward using clean energy in the electric sector.²² While some utilities have started to decarbonize over the past decade, many of these same utilities are planning to slow down their efforts at exactly the time science demands that they accelerate. An analysis from the Energy and Policy Institute (EPI) found that about half of the highest-emitting investor-owned utilities are planning to decarbonize more slowly between now and 2030.²³ With climate impacts accelerating and clean energy now cheaper than fossil fuels, utilities’ plans to slow down decarbonization is bad for customers’ wallets, our environment, and our health.

We know that:

- 1. This next decade is critically important to our chances to decarbonize and hit an emissions pathway consistent with a 1.5°C future.**
- 2. The electric sector is the cornerstone of economy-wide decarbonization.**
- 3. Clean energy alternatives are available to make this transition cost-effectively.**

According to the University of California, Berkeley and GridLab’s “2035 Report,” 80 percent clean energy by 2030 is achievable and is consistent with a fully decarbonized electric sector by 2035.²⁴ To maintain a livable planet and put us on a pathway consistent with a 1.5°C future, utilities need to decarbonize immediately and reduce emissions by at least 80 percent this decade.

That means utilities must do the following:

- 1. Retire existing coal plants.**
- 2. Terminate plans to build any new gas plants.**
- 3. Build clean energy.**

What are electric utilities in the United States doing to meet this moment?

UTILITIES LAG ON RETIRING COAL PLANTS

KEY FINDINGS:

- The companies we studied generated 43 percent of the country’s electricity.
- These companies have only committed to retire 25 percent of their coal generation by 2030.

For this report, we analyzed utility integrated resource plans (IRPs) and major announcements for the 50 utilities that remain the most invested in fossil fuel generation.²⁵ This includes investor-owned utilities, power authorities (like the Tennessee Valley Authority), generation and transmission co-ops, and large municipal utilities. Overall, we examined plans for 79 operating companies owned by 50 different parent companies, as detailed in the appendices.²⁶

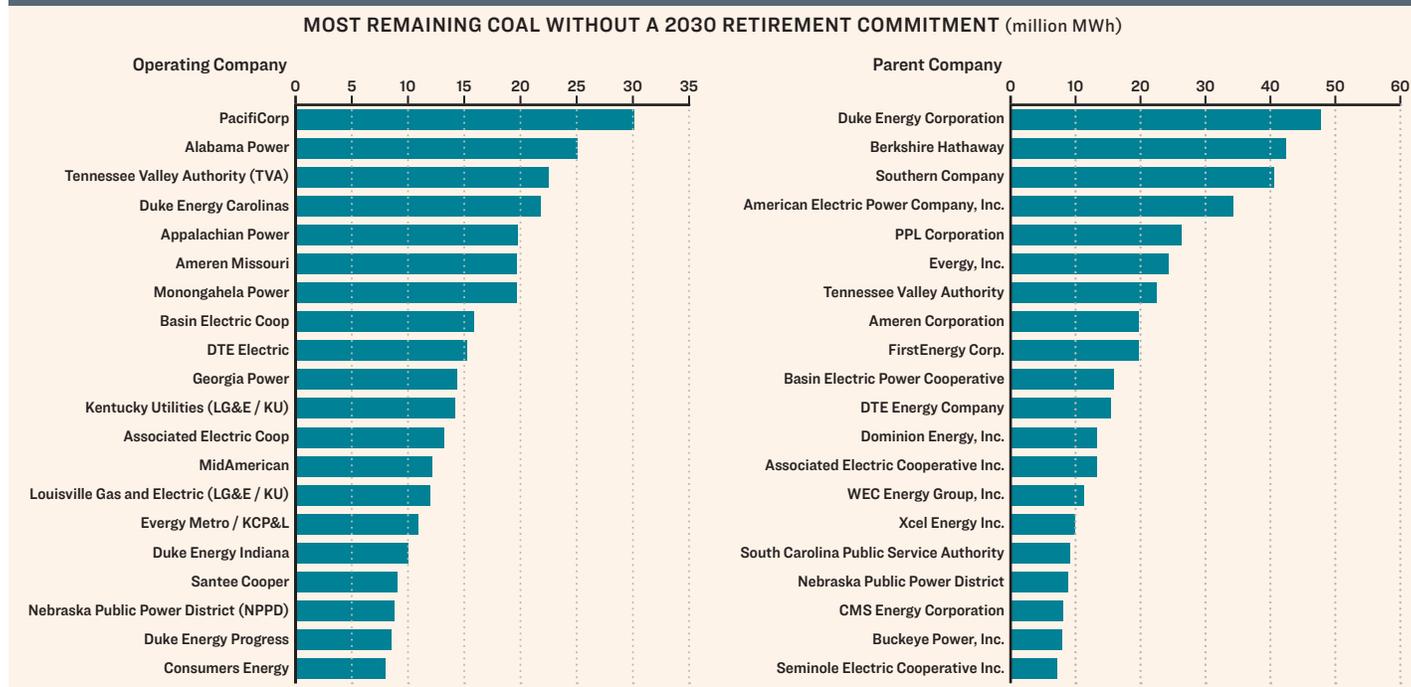
Nationally, we’ve seen a wave of coal retirements since 2010. Those retirements are the result of grassroots advocacy for cleaner air and water — often accompanied by economic arguments against continuing to rely on such a costly power source — as well as legal advocacy that forced coal plants to comply with existing climate and public health safeguards. In total, 63 percent of coal plants have been retired or are committed to retire by 2030.²⁷ Typically, merchant coal plants operated by independent power producers close sooner than those owned by regulated utilities (which are the subject of this study). In fact, regulated companies hold a whopping 70 percent of remaining coal capacity without a pre-2030 retirement date.

The 79 companies we studied generated 655 million MWh of electricity from coal in 2019, or 68 percent

of the national total. However, these companies accounted for 43 percent of all electricity generation: Their portfolios are heavy on coal.²⁸ Moreover, these companies have only committed to retire 25 percent of their coal generation by 2030 (165 million MWh of generation).²⁹

The 20 companies that generate the most power from coal have only committed to retire 17 percent of their remaining coal generation by 2030 (Figure 2). By refusing to retire the other 83 percent of their coal fleets by 2030, these companies are exacerbating the climate crisis. Rapidly phasing out coal power plants is also critical to protecting the health of people who live near them — who are disproportionately likely to be Black, Indigenous, people of color, or low-income.³⁰ Every year that a coal plant stays online is another year

Figure 2: Utilities Keeping Coal Online Past 2030



SIERRA CLUB ANALYSIS, DETAILED DATA AVAILABLE [HERE](#).

the neighboring community suffers from elevated rates of asthma, heart disease, and other health problems. If these plants retired by 2030, it would help avoid over 2,800 premature deaths, 1,700 heart attacks, and 18,000 asthma attacks every year.³¹ Utilities' refusals to close coal plants also result in higher bills for customers.

According to research from Energy Innovation and Vibrant Clean Energy, local wind and solar could replace about two-thirds of the US coal fleet at an immediate savings to customers, and that number only rises over the coming years.³²

UTILITIES CONTINUE TO PUSH TO BUILD NEW GAS PLANTS

KEY FINDINGS:

- In the last 10 years (2010-2019), over 100 GW of new gas plants have been built across the US.
- Thirty-two of the operating companies included in this study are planning to build new gas plants totaling over 36 GW through 2030. That is over 40 percent of the total planned gas across the US through 2030.

In the last 10 years (2010-2019), over 100 GW of new gas plants have been built across the US.³³ There are already large amounts of fossil fuel infrastructure that must be retired and replaced by clean generation, and utilities are making things worse by continuing to plan for and build even more gas plants. New gas generation increases emissions and misdirects funds that would be better spent on clean energy.

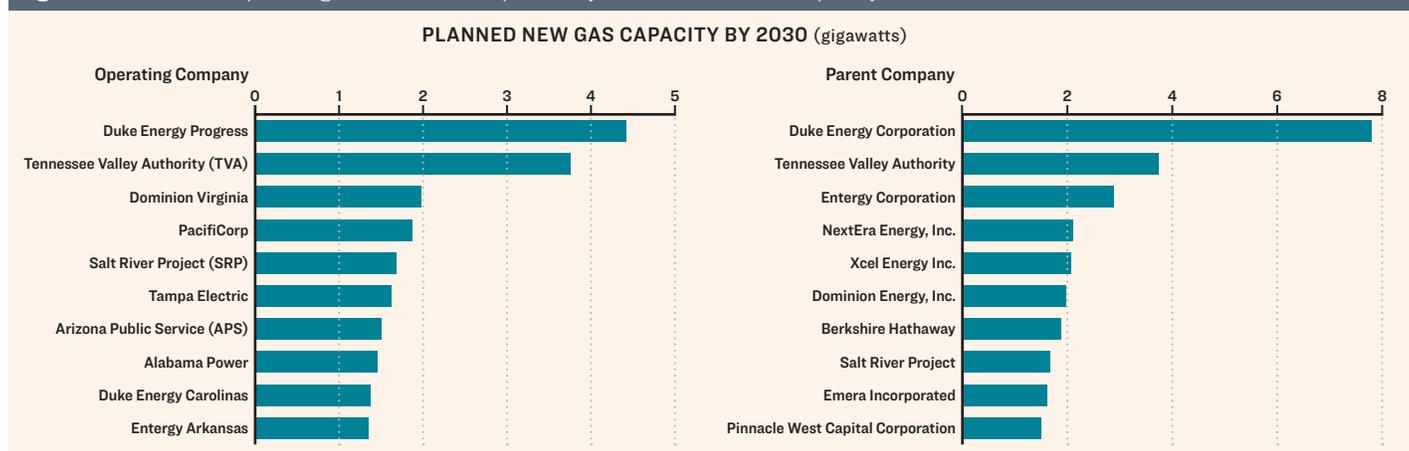
In a recent study, the Rocky Mountain Institute found that utilities and other investors are planning to invest over \$70 billion in new gas plants through 2025, even though 90 percent of those plants would be more costly than building out equivalent clean energy.³⁴ If the plants were built, they would become stranded costs within the next 15 years. By contrast, research from Emily Grubert suggests that if we stopped building new fossil fuel infrastructure today, we would face very few stranded costs in a transition to 100 percent clean energy by 2035.³⁵

Building clean energy instead of new gas plants would reduce carbon emissions by 100 million tons — about five percent of current annual emissions from the power

sector — and save customers over \$29 billion.³⁶ The gas used at a power plant also creates upstream harms, through the fracking, processing, and transportation of gas. At every stage, gas harms the environment and the communities around its infrastructure.

Despite these facts, of the 79 operating companies included in this analysis, 32 are planning to build new gas plant capacity, totaling over 36 GW through 2030. That capacity represents over 40 percent of the total planned gas capacity across the US through 2030.³⁷ Moreover, 11 companies are planning to build an additional 17 GW of gas after 2030. Figure 3 shows the 10 utilities that are planning to add the most new gas capacity by 2030.

Figure 3: The Worst Operating and Parent Companies by New Planned Gas Capacity



SOURCE: SIERRA CLUB ANALYSIS, DETAILED DATA AVAILABLE [HERE](#).

UTILITIES ARE NOT BUILDING CLEAN ENERGY FAST ENOUGH

KEY FINDING:

- The companies studied plan to add 250 million MWh of new wind and solar energy to the grid between 2020 and 2030. This is equivalent to only 19 percent of their current coal and gas generation and is therefore wholly inadequate to bring about a swift transition to a zero-carbon grid.

Are electric utilities in the United States planning for the buildout of clean energy needed to protect our future? With few exceptions, utilities' current clean energy commitments are not sufficient to solve the dual crises of climate change and pollution.

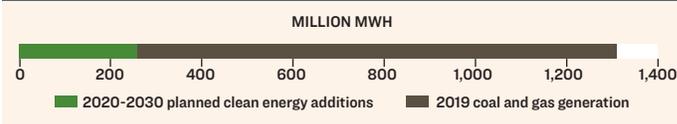
In total, the 50 parent companies we studied generated half of all remaining coal and gas generation in the nation in 2019.³⁸ In aggregate, however, the companies' plans to build clean energy are less than one-fifth as large as their current fossil fuel assets.³⁹ This lack of ambition means that there are no plans to replace 81 percent of current coal and gas generation with clean energy this decade.⁴⁰

Clearly, utilities are not planning to move anywhere near the speed necessary to avert catastrophic warming.

In the figure to the right, we show the difference between planned clean energy generation (green bar) and the existing level of coal and gas generation (gray bar) for the 50 utilities in this report. In an ideal case, this green bar

should be the same size as the gray bar. Clearly, this is not the current reality. In some cases, utilities are adding new clean energy without retiring dirty fossil fuels. For example, Iowa's MidAmerican Energy has significantly grown its wind portfolio but has not committed to closing any of its coal plants. That is why a clean energy plan has to be accompanied by a commitment to retire fossil fuels.

Figure 4: Planned Clean Energy Vs. Existing Fossil Generation Across All Utilities Studied



SOURCE: SIERRA CLUB ANALYSIS, DETAILED DATA AVAILABLE [HERE](#).



UTILITIES SCORE AN F FOR THEIR CONTRIBUTION TO A CLEAN ENERGY FUTURE

KEY FINDING:

- We assigned a score to every utility based on its plans to retire coal, construct new gas plants, and build new clean energy. The aggregate score for all companies studied is 17 out of 100.

We assigned each of the utilities a score based on its plans in three areas: **1)** commitments to retire coal by 2030, **2)** plans to build gas through 2030, **3)** plans to build or purchase clean energy by 2030. The score is on a scale of 0 to 100, with a utility earning points by committing to retire coal and adding clean energy and losing points by adding new gas. The numeric score earned determines a company’s grade of A to F, shown in the distribution below. A complete methodology can be found in Appendix B.

A ≥ 75	50 ≤ B < 75	35 ≤ C < 50	17.5 ≤ D < 35	F < 17.5
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The average score for the 50 parent utilities we studied was 17 out of 100 — an F grade — as a result of:

- Committing to retire only 25 percent of their coal-fired power plants by 2030 (12.5 points earned out of 50),
- Building new clean energy by 2030 that is only 19 percent as large as their existing fossil-fuel generation (9.5 points earned out of 50),
- Planning to build over 36 GW of gas by 2030 (five point penalty).

To be on a 1.5°C compatible path, all companies need to get an A (75 or greater). If these companies made the necessary plans to retire all of their coal by 2030, without any changes to their plans to build clean energy or gas, their aggregate score would improve to a low B (55). Retiring their coal would also stop 743 million metric tons of carbon dioxide equivalent (MMT CO₂e) pollution each year, equal to taking over 160 million cars off the road.⁴¹

If utilities also committed to not build any new gas, and doubled their plans to build clean energy, their score would increase to a high B (69). Scrapping plans to build new gas plants would avoid an estimated 81 MMT CO₂e, equivalent to keeping over 17 million cars off the road.⁴²

In order to get into the A range, these companies must retire all of their coal by 2030, stop all plans for new gas plants, and triple their plans to build clean energy, an ambitious but possible and necessary path forward; this would earn them a score of 79. Getting to a score of 100, the gold standard, would entail an over five-fold increase in clean energy additions in aggregate across the companies.

Figure 5 provides our score for the 50 parent companies and 79 affiliated operating companies analyzed. We’ve launched a dashboard with detailed data on each operating and parent company’s score available online [here](#).⁴³

Companies that received an A grade have plans to retire 100 percent of their coal and do not have plans to build any new gas. At the other end of the spectrum, companies that received an F grade have plans to retire only seven percent of their coal and plan to build nearly 23 GW of new gas, or over 60 percent of the total planned amount (see Figures 6 and 7). Notably, 22 out of 79 operating companies scored zero out of 100, with zero plans to move in the right direction.

Figure 6: Coal Committed to Retire by 2030 by Letter Grade

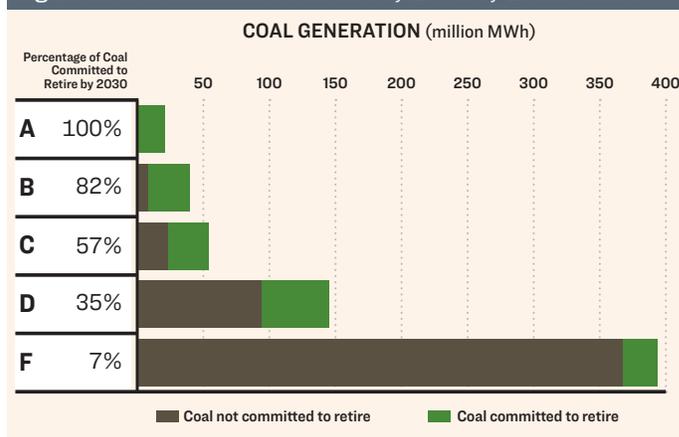
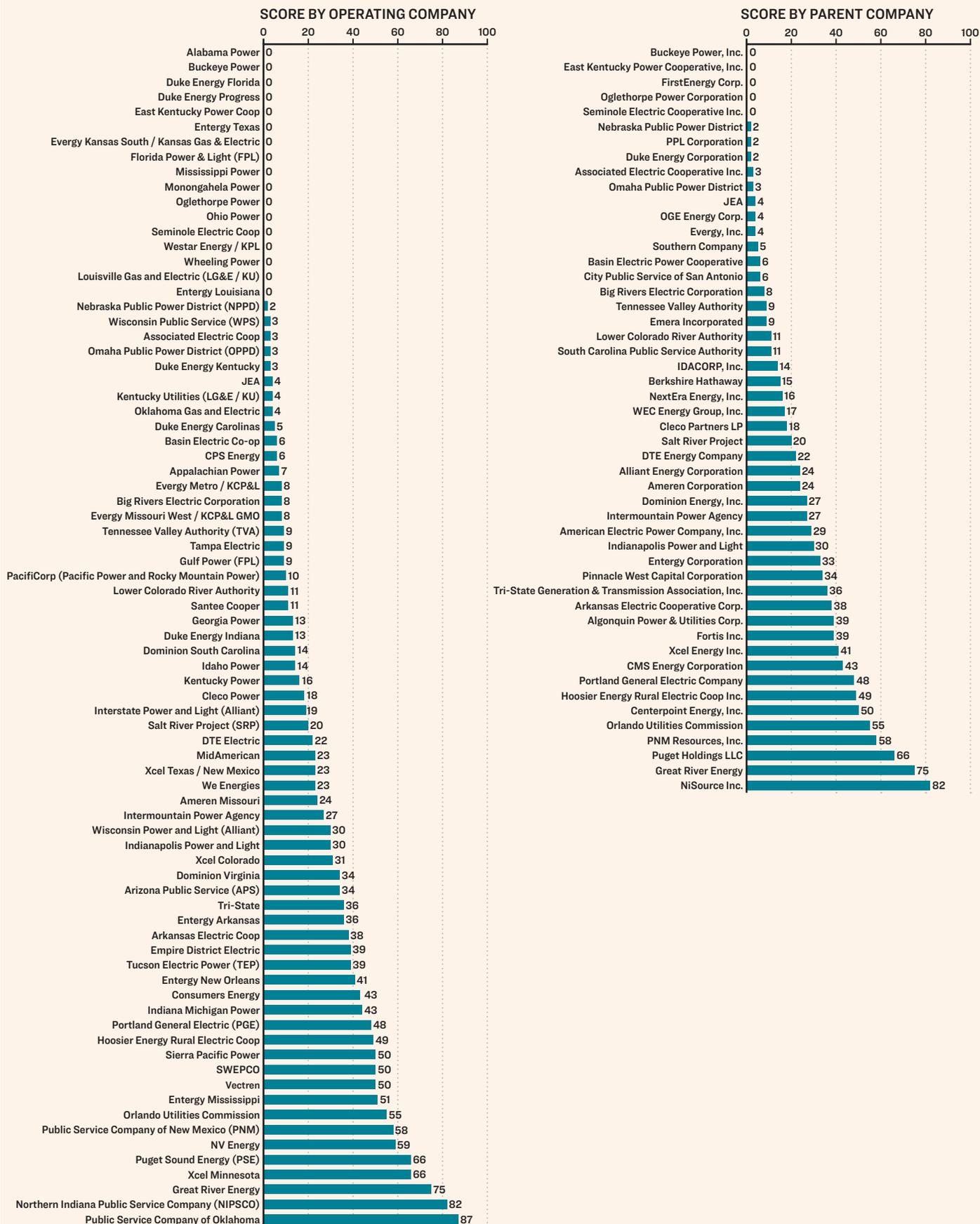
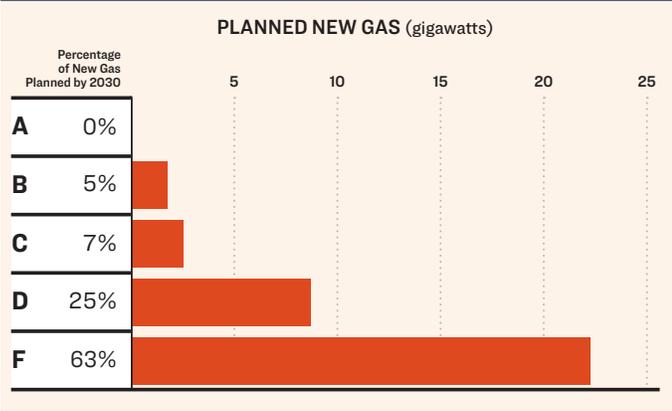


Figure 5: Utility Scores by Operating Company and Parent Company



SOURCE: SIERRA CLUB ANALYSIS, DETAILED DATA AVAILABLE [HERE](#).

Figure 7: New Gas Planned by 2030 by Letter Grade



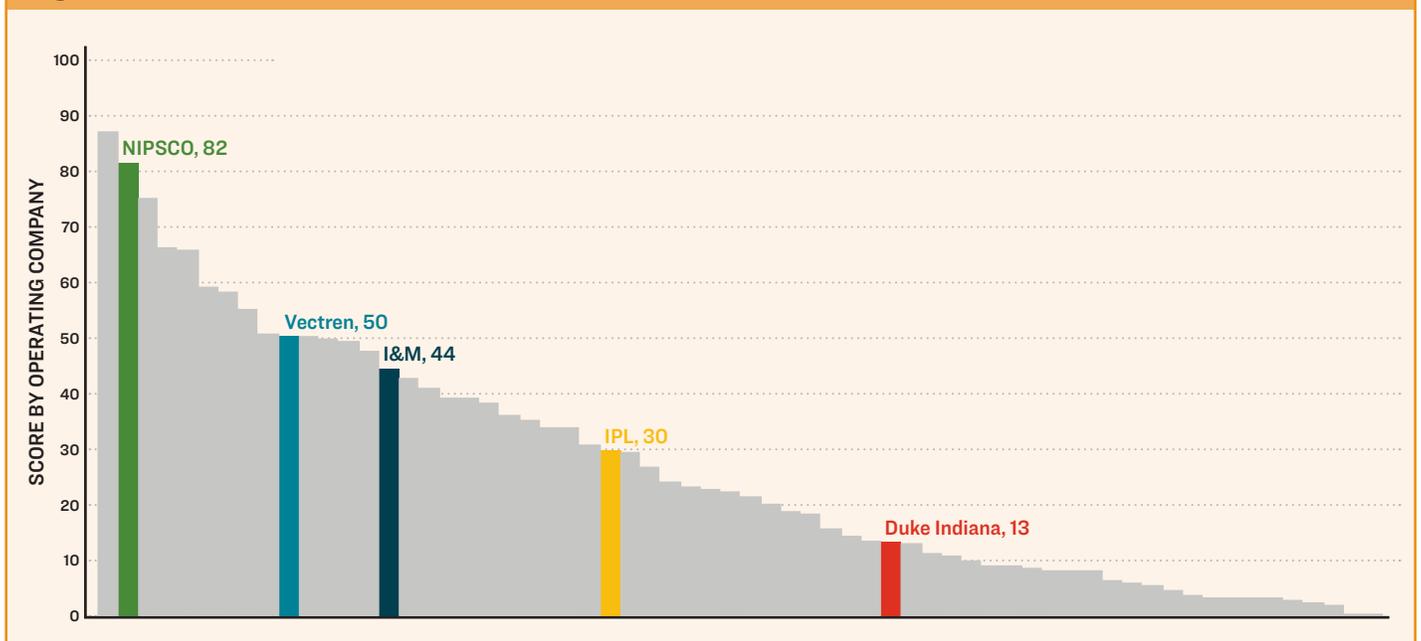
Although not incorporated into our utility scoring, we include supplemental information on the energy efficiency measures of each company in an online [dashboard](#).⁴⁴ High achievement in energy efficiency is a

critical piece of a low-carbon transition, as it means that less clean energy must be built as we electrify parts of the economy. In aggregate, we find that the companies studied are achieving the equivalent of 0.7 percent of their retail sales in energy efficiency measures.⁴⁵ An energy efficiency achievement of 0.7 percent is equivalent to a company that sells 1 million MWh of electricity helping its customers implement energy savings measures that save 7,000 MWh per year. The leading states in the nation for energy efficiency — such as New York and Massachusetts — have an energy efficiency standard of two percent or higher. Hence, utilities should be aiming to triple their energy efficiency outcomes. Higher levels of energy efficiency will not only make energy more affordable but also can help create headroom for electrification of buildings and vehicles.

CASE STUDY: INDIANA

Indiana provides a stark contrast between utilities that are moving rapidly toward a clean energy future and utilities that are stuck in the fossil fuel past. In 2018, Northern Indiana Public Service Company (NIPSCO) received accolades for its plan to retire its coal plants by 2028 and largely replace them with clean energy, without building any new gas, all while saving its customers \$4 billion.⁴⁶ NIPSCO earns an 82 on our scorecard. In contrast, Duke Energy Indiana is squarely in the F category with a score of 13, for failing to retire its coal and for planning to build new gas plants. In between these two utilities are Vectren, Indiana Michigan Power, and Indianapolis Power & Light, receiving B, C, and D grades respectively (see Figure 8 for the full distribution of utilities and scores). Each of these utilities needs to make further commitments to retire existing coal plants and build clean energy instead of gas.

Figure 8: Scores for Five Investor-Owned Utilities in Indiana



UTILITY CLIMATE GOALS FAIL THE CLIMATE TEST

KEY FINDINGS:

- While many electric utilities have pledged to decarbonize, their goals fall far short of what is necessary to protect people and the planet.
- Over half of the companies we studied have no goal or do not have a climate goal in the timeframe that is relevant for planning (this decade).
- Only five of the operating companies are legally required to meet their climate goal because of a state-level statute. Of these, only two are complete parent companies such that the entire parent company is bound by law to the company's publicly stated climate goal.
- The average score was 20 out of 100 for utilities with a net-zero climate pledge and 14 out of 100 for utilities without such a pledge, showing that the pledges have not led to any appreciable amount of near-term ambition or action.

Some utilities have begun adopting climate goals that they tout as “evidence” of their plans to decarbonize. Out of the 50 parent companies included here, 33 have a stated climate goal (Table 1).⁴⁷ In general, most companies are not incorporating their climate goal into their latest IRPs. One possible reason for this exclusion is that a common net-zero emissions goal year (2050) is 30 years away, while most IRPs only have a scope of 15 to 20 years.

A meaningful utility climate goal would:

1. Be legally binding;
2. apply to all subsidiary companies;
3. include a short-term target of reducing emissions by at least 80 percent by 2030⁴⁸ — not just long-term 2050 goals — backed by concrete IRP commitments.

Most goals are simply corporate commitments that are not legally binding, although there are some exceptions. Our study includes five operating companies that are legally required to meet their climate goal because of a state-level statute:

- PNM Resources, bound by New Mexico's Energy Transition Act requiring 50 percent renewables by 2030, 80 percent renewables by 2040, and zero-carbon by 2045.
- Puget Sound Energy, bound by Washington's Clean Energy Transformation Act requiring utilities to transition to a carbon-neutral electricity supply by 2030 and carbon-free by 2045.
- Dominion Virginia, bound by the Virginia Clean Economy Act requiring Dominion have 100 percent carbon-free energy by 2045.⁴⁹
- Nevada Power, bound by Senate Bill 358 requiring 50 percent renewables by 2030 and aiming for 100 percent carbon-free resources by 2050.

- Xcel Colorado, bound by Senate Bill 19-236 requiring 100 percent carbon-free energy by 2050.

Of these five operating companies, only PNM and Puget Sound Energy are also complete parent companies such that the entire parent company is bound by law to the company's publicly stated climate goal.⁵⁰ Dominion has a separate operating company in South Carolina that is not bound by law to meet Dominion Virginia's corporate commitment. Nevada Power's parent company Berkshire Hathaway does not have a publicly stated climate goal. Finally, Xcel Energy has operating companies in Minnesota and Texas that are not bound by Colorado's climate law.

Additionally, many utilities only have climate commitments for 2040 or 2050, well past the timeframe in which we must act to prevent the worst impacts of climate change. Of the 33 companies that have corporate targets, 10 lack commitments to address their contributions to the climate crisis by 2030 or earlier. Of the 23 companies with climate goals for 2030 or earlier, only four (NiSource, Portland General Electric, Puget, and Xcel) are aiming for at least an 80 percent emissions reduction by 2030, which would put them on track for full decarbonization by 2035.⁵¹ A recent analysis from EPI found that utilities have continued to leave the fastest reductions in emissions to the latter part of this half-century (2030–2050), rather than tackling those reductions this decade. Only one of the 24 utilities they studied, NIPSCO, which scores an A in this

analysis, was planning for emissions reductions on pace with President Biden’s goal of net-zero by 2035.⁵²

Corporate commitments mean little unless they are backed up by plans and actions. For example, Duke, Dominion, and Southern Company have all set corporate climate goals. These three companies alone own roughly 13 percent of US generation capacity and are responsible

for over 12 percent of US power sector carbon emissions.⁵³ Yet these companies’ investment plans include large amounts of new gas and lack adequate build-outs of clean energy. Duke and Southern Company both score an F in our analysis, and Dominion scores a D. All three will miss their own decarbonization targets unless they change their plans.⁵⁴

Table 1: Electric Utility Climate Commitments (Climate Commitment for the Earliest Date Shown)

Parent Company	Climate Goal	Parent Company	Climate Goal
Algonquin Power & Utilities Corp.	1 million metric tons carbon dioxide equivalent reduction by 2023 (2017 baseline).	Idacorp, Inc.	100% clean energy by 2045.
Alliant Energy Corp.	50% reduction by 2030 (2005 baseline).	Indianapolis Power & Light Co.	No goal.
Ameren Corp.	50% reduction by 2030 (2005 baseline).	Intermountain Power Agency	No goal.
American Electric Power Company, Inc.	70% reduction by 2030 (2000 baseline).	JEA	30% of energy provided is carbon neutral by 2030.
Arkansas Electric Cooperative Corp.	No goal.	Lower Colorado River Authority	No goal.
Associated Electric Cooperative Inc.	No goal.	Nebraska Public Power District	No goal.
Basin Electric Power Cooperative	No goal.	NextEra Energy, Inc.	40% reduction by 2025 (2005 baseline).
Berkshire Hathaway	No goal.	NiSource Inc.	90% reduction by 2030 (2005 baseline).
Big Rivers Electric Corp.	No goal.	OGE Energy Corp.	50% reduction by 2030 (2005 baseline).
Buckeye Power, Inc.	No goal.	Oglethorpe Power Corp.	No goal.
Centerpoint Energy, Inc.	70% reduction in operational emissions by 2035 (2005 baseline).	Omaha Public Power District	Net-zero emissions by 2050.
City Public Service of San Antonio	No goal.	Orlando Utilities Commission	50% reduction by 2030 (2005 baseline).
Cleco Partners L.P.	No goal.	Pinnacle West Capital Corp.	45% renewable by 2030.
CMS Energy Corp.	90% reduction by 2040 (2005 baseline).	PNM Resources, Inc.	100% carbon-free by 2040 (in statute).
Dominion Energy, Inc.	Net-zero emissions by 2050.	Portland General Electric Co.	80% reduction by 2030 (2010 baseline).
DTE Energy Co.	50% reduction by 2030 (2005 baseline).	PPL Corp.	70% reduction by 2040 (2010 baseline).
Duke Energy Corp.	50% reduction by 2030 (2005 baseline).	Puget Holdings LLC	Carbon neutral by 2030.
East Kentucky Power Cooperative	No goal.	Salt River Project	62% carbon emissions rate reduction by 2035 (2005 baseline).
Emera Inc.	No goal.	Seminole Electric Cooperative, Inc.	No goal.
Entergy Corp.	50% emissions intensity reduction by 2030 (2000 baseline).	South Carolina Public Service Authority	No goal.
Eversys, Inc.	80% reduction by 2050 (2005 baseline).	Southern Co.	50% reduction by 2030 (2007 baseline, not binding on subsidiary companies).
FirstEnergy Corp.	30% reduction by 2030 (2019 baseline).	Tennessee Valley Authority	70% reduction by 2030 (2005 baseline).
Fortis Inc.	80% reduction by 2035 (2020 baseline).	Tri-State Generation and Transmission Association, Inc.	90% reduction by 2030 in Colorado (2005 baseline).
Great River Energy	50% renewable energy by 2030.	WEC Energy Group	70% reduction by 2030 (2005 baseline).
Hoosier Energy Rural Electric Cooperative, Inc.	10% renewable energy by 2025.	Xcel Energy Inc.	80% reduction by 2030 (2005 baseline, in statute).

Finally, we compared the average scores for companies with net-zero pledges to those without.⁵⁵ Companies with a net-zero pledge — 19 in total — scored an average of 20 out of 100, as compared to companies without such a pledge — 31 in total — which scored an average of 14 out of 100. Though the companies with net-zero pledges are planning to build more clean energy, they are also planning to build more new gas than companies without pledges. Given that there is no meaningful difference (a high F vs. a very low D) between these two sets of companies, it's clear the pledges are not leading to meaningful action on the ground this decade.

Table 2: Comparison of Key Metrics for Companies With and Without Net-Zero Pledges

	Score (out of 100)	Percent of coal committed to retire by 2030 (%)	Ratio of planned clean energy to existing coal and gas generation (%)	Planned new gas (gigawatts)
Companies with a net-zero pledge	20	27	24	22
Companies without a net-zero pledge	14	23	13	14

CONCLUSION

Utilities across the country are failing to decarbonize in the timeframe that matters. By keeping coal plants running, planning to construct new gas plants, and failing to build out clean energy at the necessary scale and pace, these utilities are locking us into climate disaster. Here, we looked at 50 parent companies which make up 43 percent of total US generation.

The aggregate score for these companies was 17 out of 100, a failing grade. These companies' supposed climate commitments are a distraction. This is evidenced by the very similar average score for utilities with a net-zero climate pledge, 20, and for utilities without such a pledge, 14.

Utilities must decarbonize rapidly in order to preserve a habitable climate. In addition, cleaning up our electricity system provides numerous economic and environmental

benefits beyond a stable climate, as it allows other sectors to electrify and decarbonize. Utilities can become partners in the clean energy transition. By making real commitments to eliminate climate pollution — commitments that are backed up by concrete, binding plans — utilities can lead the way to a livable future with a stable climate, economic opportunities, and clean air for all.



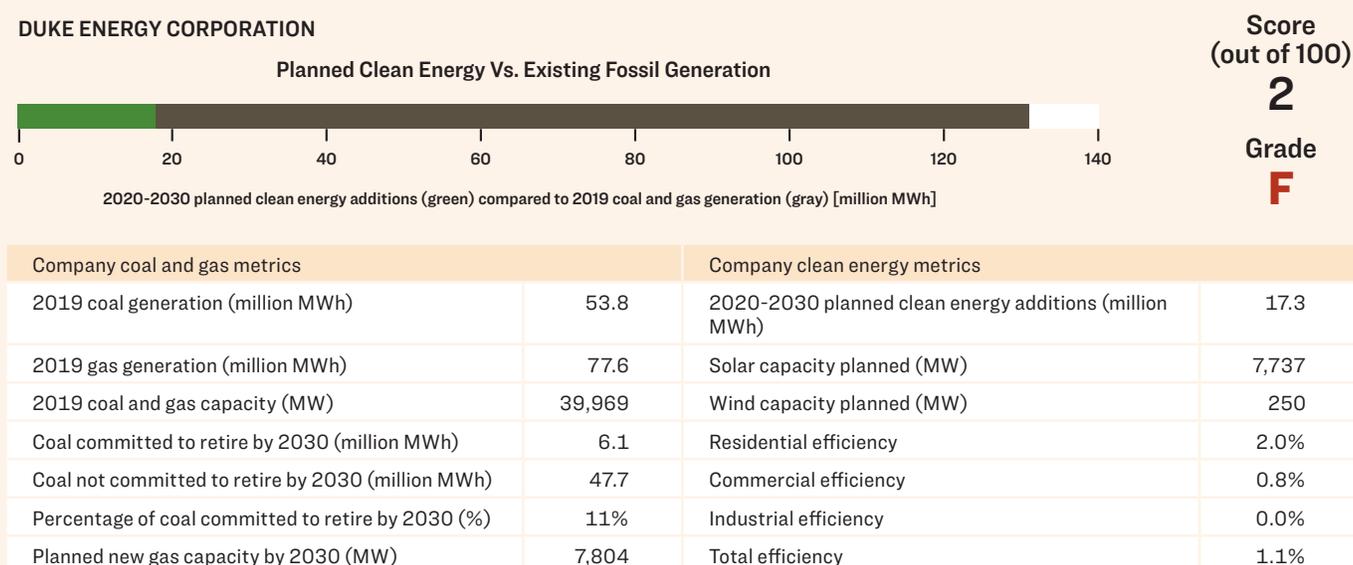
CASE STUDY: DUKE ENERGY

Duke Energy Corporation’s non-merchant subsidiaries include five investor-owned utilities: Duke Florida, Duke Indiana, Duke Kentucky, Duke Carolinas, and Duke Progress (which also operates in the Carolinas).⁵⁶ Combined, these utilities generated 131 million MWh of electricity from coal and gas in 2019 and are planning to add 17 million MWh of clean energy between 2020 and 2030.⁵⁷

Of Duke’s 54 million MWh of coal generation in 2019, only 11 percent is firmly committed to retire by the end of 2030. Duke intends to build as much as 7,800 MW of new gas by 2030, equivalent to about

a fifth of the 40,000 MW of coal and gas capacity it currently operates. As such, Duke Energy earned an aggregate score of 2 out of 100 in our analysis.

Figure 9: Duke Energy Score and Coal, Gas, and Clean Energy Metrics



At an operating company level, we find that Duke Energy Florida and Duke Energy Progress both have a score of 0; Duke Energy Kentucky has a score of 3; Duke Energy Carolinas scores 5; and Duke Energy Indiana scores 13. Nearly 75 percent of Duke’s planned gas currently sits within its Carolinas and Progress subsidiaries, which both operate in North and South Carolina. Beyond 2030, Duke plans to build an additional 5,500 MW of gas capacity. If all of Duke’s planned gas plants are built and operate similarly to how gas plants in these states have historically operated, they would generate an

estimated 46 million MWh each year.⁵⁸ This new gas capacity could generate nearly as much power as the entirety of Duke’s existing coal fleet. In other words, Duke is planning for an energy future centered on gas — not clean energy. If Duke committed to retire all of its existing coal by 2030 and stopped all plans to build new gas, its score would improve to a B (57). To score 100, Duke would need to make plans to build over seven times as much clean energy as it is currently planning in order to replace its fossil generation.

CASE STUDY: DUKE ENERGY, cont.

Table 3: Detailed Scoring for Duke's Five Operating Companies Included in the Study

	Duke Energy Carolinas	Duke Energy Florida	Duke Energy Indiana	Duke Energy Kentucky	Duke Energy Progress
Utility score	5	0	13	3	0
2019 coal generation (million MWh)	22.2	4.3	14.6	3.2	9.5
2019 gas generation (million MWh)	16.2	34.0	6.2	0.1	21.1
2019 coal and gas capacity (MW)	12,455	9,951	6,968	1,164	9,431
Coal committed to retire by 2030 (million MWh)	0.4	-	4.6	-	1.0
Coal not committed to retire by 2030 (million MWh)	21.8	4.3	10.0	3.2	8.5
Percentage of coal committed to retire by 2030 (%)	2%	0%	32%	0%	11%
Planned new gas capacity by 2030 (MW)	1,374	720	1,288	-	4,422
2020-2030 planned clean energy additions (million MWh)	7.2	2.7	2.8	0.2	4.4
Solar capacity planned (MW)	3,284	1,404	952	110	1,987
Wind capacity planned (MW)	-	-	250	-	-

Given its weak coal-retirement commitments and its oversized planned gas buildout over this next decade, Duke's plans are entirely incompatible with limiting warming to 1.5°C. While Duke is planning to build some solar capacity, the size of its commitment is paltry, especially for a company with its resources. In Duke's 2020 Climate Report, it coins a new term — "zero-emitting load-following resources" or "ZELFR" — to describe yet to be tested, zero-emissions, on-demand energy sources that it claims it needs in order to decarbonize the grid.⁵⁹ However, ZELFRs seem to be nothing more than a way for Duke to continue to operate a fossil-heavy grid while waiting for a unicorn technology. We know we can reduce carbon emissions with the technologies we already have; there is no reason for Duke to wait to stop emitting carbon pollution until new and unproved technologies come into existence.

Duke is aiming for net-zero emissions 30 years in the future. But this next decade is the one that really matters if we are to have any hope of avoiding the most damaging climate change scenarios. In March 2020, when a report⁶⁰ found that Duke's

current infrastructure investment plans will not even meet that insufficient 2050 goal, Duke responded that those plans showed an "old roadmap from its most recent integrated resource plans, which were approved prior to Duke's announcement that it would transition to net zero carbon emissions by 2050."⁶¹ If the problem was only that the roadmap was out of date, Duke had the opportunity to present a much improved, updated roadmap in its IRPs for subsidiaries Duke Energy Progress and Duke Energy Carolinas, which were released in September 2020.⁶² However, these newer IRPs still contain plans to build out numerous new gas plants and do not commit to retiring coal fast enough, demonstrating that, unfortunately, Duke is not backing up its words with actions. Duke must show a viable climate commitment by setting a goal of at least 80 percent emissions reductions by 2030 and backing this up by releasing plans to retire all of its remaining coal plants by 2030, canceling new gas plants, and building out wind and solar resources to take the place of these dirty fossil fuels.

APPENDIX A: PARENT AND OPERATING COMPANIES

The following table outlines the 50 parent companies, 79 affiliated operating companies, and 90 unique owners studied in the report. In some cases, an operating company had more than one unique owner. For example, Buckeye Power Generating LLC and Buckeye Power, Inc. are two unique owners serving one operating company. Of the 50 parent companies, 29 are investor-owned utilities (28 of which are publicly traded); 12 are generation and transmission cooperatives; three are municipal utilities; two are public power districts; four are government power agencies.

Parent Company	Operating Company	Owner (per S&P Global)
Algonquin Power & Utilities Corp.	Empire District Electric	Empire District Electric Company
Alliant Energy Corporation	Interstate Power and Light (Alliant)	Interstate Power and Light Company
	Wisconsin Power and Light (Alliant)	Wisconsin Power and Light Company
Ameren Corporation	Ameren Missouri	Union Electric Company
American Electric Power Company, Inc.	Appalachian Power	Appalachian Power Company
	Indiana Michigan Power	Indiana Michigan Power Company
	Kentucky Power	Kentucky Power Company
	Ohio Power	Ohio Power Company
	Public Service Company of Oklahoma	Public Service Company of Oklahoma
	SWEPSCO	Southwestern Electric Power Company
	Wheeling Power	Wheeling Power Company
Arkansas Electric Cooperative Corp.	Arkansas Electric Coop	Arkansas Electric Cooperative Corp.
Associated Electric Cooperative Inc.	Associated Electric Coop	Associated Electric Cooperative Inc.
Basin Electric Power Cooperative	Basin Electric Coop	Basin Electric Power Cooperative
Berkshire Hathaway	MidAmerican	MidAmerican Energy Company
	Nevada Power	Nevada Power Company
	Sierra Pacific Power	Sierra Pacific Power Company
	PacifiCorp (Pacific Power and Rocky Mountain Power)	PacifiCorp
Big Rivers Electric Corporation	Big Rivers Electric Corporation	Big Rivers Electric Corporation
Buckeye Power, Inc.	Buckeye Power	Buckeye Power Generating LLC
		Buckeye Power, Inc.
Centerpoint Energy, Inc.	Vectren	Southern Indiana Gas and Electric Company
City Public Service of San Antonio	CPS Energy	City Public Service of San Antonio
Cleco Partners LP	Cleco Power	Cleco Cajun LLC
		Cleco Power LLC
CMS Energy Corporation	Consumers Energy	Consumers Energy Company
Dominion Energy, Inc.	Dominion South Carolina	Dominion Energy South Carolina, Inc.
		South Carolina Generating Company, Inc.
	Dominion Virginia	Virginia Electric and Power Company
DTE Energy Company	DTE Electric	DTE Electric Company
		DTE Energy Services, Inc.

APPENDIX A: PARENT AND OPERATING COMPANIES, cont.

Parent Company	Operating Company	Owner (per S&P Global)
Duke Energy Corporation	Duke Energy Carolinas	Duke Energy Carolinas, LLC
	Duke Energy Florida	Duke Energy Florida, LLC
	Duke Energy Indiana	Duke Energy Indiana, LLC
	Duke Energy Kentucky	Duke Energy Kentucky, Inc.
	Duke Energy Progress	Duke Energy Progress, LLC
East Kentucky Power Cooperative, Inc.	East Kentucky Power Coop	East Kentucky Power Cooperative, Inc.
Emera Incorporated	Tampa Electric	Tampa Electric Company
Entergy Corporation	Entergy Arkansas	Entergy Arkansas, LLC
	Entergy Louisiana	Entergy Louisiana, LLC
	Entergy Mississippi	Entergy Mississippi, LLC
	Entergy New Orleans	Entergy New Orleans, LLC
	Entergy Texas	Entergy Texas, Inc.
	Entergy Arkansas	Entergy Power, LLC
	Entergy Louisiana	Entergy Power Gas Operations
Eversource Inc.	Eversource Kansas South / Kansas Gas & Electric	Eversource Kansas South, Inc.
	Eversource Metro / KCP&L	Eversource Metro, Inc.
	Eversource Missouri West / KCP&L GMO	Eversource Missouri West, Inc.
	Westar Energy / KPL	Westar Energy (KPL) Westar Generating, Inc.
FirstEnergy Corp.	Monongahela Power	Monongahela Power Company
Fortis Inc.	Tucson Electric Power (TEP)	Tucson Electric Power Company
		UNS Electric, Inc.
Great River Energy	Great River Energy	Great River Energy
Hoosier Energy Rural Electric Coop Inc.	Hoosier Energy Rural Electric Coop	Hoosier Energy Rural Electric Coop Inc.
IDACORP, Inc.	Idaho Power	Idaho Power Company
Indianapolis Power and Light	Indianapolis Power and Light	AES Corporation
		Caisse de dépôt et placement du Québec
Intermountain Power Agency	Intermountain Power Agency	Intermountain Power Agency
JEA	JEA	JEA
Lower Colorado River Authority	Lower Colorado River Authority	Lower Colorado River Authority
		GenTex Power Corporation
Nebraska Public Power District	Nebraska Public Power District (NPPD)	Nebraska Public Power District
NextEra Energy, Inc.	Florida Power & Light (FPL)	Florida Power & Light Company
	Gulf Power (FPL)	Gulf Power Company
NiSource Inc.	Northern Indiana Public Service Company (NIPSCO)	Northern Indiana Public Service Company
OGE Energy Corp.	Oklahoma Gas and Electric	Oklahoma Gas and Electric Company
Oglethorpe Power Corporation	Oglethorpe Power	Oglethorpe Power Corporation
Omaha Public Power District	Omaha Public Power District (OPPD)	Omaha Public Power District
Orlando Utilities Commission	Orlando Utilities Commission	Orlando Utilities Commission

APPENDIX A: PARENT AND OPERATING COMPANIES, cont.

Parent Company	Operating Company	Owner (per S&P Global)
Pinnacle West Capital Corporation	Arizona Public Service (APS)	Arizona Public Service Company
PNM Resources, Inc.	Public Service Company of New Mexico (PNM)	Public Service Company of New Mexico
Portland General Electric Company	Portland General Electric (PGE)	Portland General Electric Company
PPL Corporation	Kentucky Utilities (LG&E / KU)	Kentucky Utilities Company
	Louisville Gas and Electric (LG&E / KU)	Louisville Gas and Electric Company
Puget Holdings LLC	Puget Sound Energy (PSE)	Puget Sound Energy, Inc.
Salt River Project	Salt River Project (SRP)	Salt River Project
Seminole Electric Cooperative Inc.	Seminole Electric Coop	Seminole Electric Cooperative Inc.
South Carolina Public Service Authority	Santee Cooper	South Carolina Public Service Authority
Southern Company	Alabama Power	Alabama Power Company
	Georgia Power	Georgia Power Company
	Mississippi Power	Mississippi Power Company
Tennessee Valley Authority	Tennessee Valley Authority (TVA)	Tennessee Valley Authority
Tri-State Generation & Transmission Association, Inc.	Tri-State	Tri-State Generation & Transmission Association, Inc.
WEC Energy Group, Inc.	We Energies	Wisconsin Electric Power Company
	Wisconsin Public Service (WPS)	Wisconsin Public Service Corporation
Xcel Energy Inc.	Xcel Colorado	Public Service Company of Colorado
	Xcel Minnesota	Northern States Power Company - MN
		Northern States Power Company - WI
	Xcel Texas / New Mexico	Southwestern Public Service Company

APPENDIX B: METHODS

The Sierra Club has been tracking clean energy commitments for utilities across the country to help us understand how often retired coal plants are being replaced with clean energy. We analyzed investor-owned utilities, federal power authorities (such as Tennessee Valley Authority), generation and transmission cooperatives, and large municipal utilities.

These utilities all seek some form of rate recovery for their generation assets. They are all responsible for the resource adequacy of their generation supply, which means that when they plan retirements of coal and gas assets, they are responsible for building or sourcing replacement energy and capacity to comply with their resource adequacy requirements. We did not study any purely merchant generating companies.

We limited our study to the top 50 parent companies as ranked by remaining coal and gas under ownership. As of 2019, these companies accounted for roughly 50 percent of all remaining coal and gas generation in the country.⁶³ These 50 parent companies have 79 operating companies and 90 unique owners, as listed in Appendix A. Some parent companies had only one

relevant non-merchant operating company, whereas others had multiple operating companies (American Electric Power had seven operating companies for example). We only looked at coal and gas assets under direct ownership by these utilities and did not study power purchase agreements with coal and gas plants or other wholesale contracts or purchases of unspecified power. Using S&P Global Market Intelligence's database, we aggregated coal and gas generation by owner, operating company, and parent company for the calendar year 2019.

To quantify clean energy plans, we tracked the integrated resource plans for those utilities that file them publicly (IRP sources are specifically noted in the dashboard and GitHub when used) as well as

corporate announcements of clean energy projects. We included planned renewables regardless of whether the utility plans to build the project itself or buy via a power purchase agreement. We aggregated the amount of wind and solar capacity planned by each utility in 2020 through 2030. To convert capacity into generation, we used a set of state-specific capacity factors for onshore wind, offshore wind, utility solar, and distributed solar culled from sources including the Energy Information Administration (EIA) and National Renewable Energy Laboratory.⁶⁴ We assumed

that a utility operating in a given state would build its projects in that state. This may not be the case in the end, but generally technology-specific capacity factors do not vary greatly between neighboring states.

Planned gas data included any new gas capacity that had been proposed by a utility in an IRP or other publicly available source. Planned gas included new gas capacity that was in any stage before operation (i.e., included under construction). This also included coal-to-gas conversions where planned.

All data was up to date as of December 1, 2020.

The overall utility score was calculated using the following equation:

$$\text{Score} = \frac{\frac{\text{Clean planned [MWh] (2020-2030)}}{\text{Existing coal + gas [MWh] (2019)}} + \frac{\text{Coal committed to retire by 2030 [MWh]}}{\text{Existing coal [MWh] (2019)}} - \frac{\text{Planned gas by 2030 [MW]}}{\text{Existing coal + gas [MW]}}}{2} * 100$$

Points are earned by retiring coal by 2030 and building clean energy, while points are lost by building new gas. The scores are divided by two to keep it on a scale of 0 to 100. If a score is below zero due to high gas penalties, then the company simply receives a zero. While the clean energy and coal components of the score are in terms of generation (megawatt hours), the gas component of the score is in terms of capacity (megawatts), as it is unclear

how much each new gas plant would run (i.e., its capacity factor). A perfect 100 is achieved if a company commits to retiring all of its coal by 2030, to not building any new gas, and to building an amount of new clean energy commensurate with its existing fossil fuel generation. Finally, companies are assigned letter grades according to where their score lies on the following scale:

A ≥ 75	50 ≤ B < 75	35 ≤ C < 50	17.5 ≤ D < 35	F < 17.5
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The cutoff for a failing grade (17.5) is slightly above the average score of all companies studied (17.2).

We provide the following data points publicly via the [dashboard](#) and [GitHub](#).⁶⁵

- Parent company
- Operating company
- Coal generation (2019)
- Gas generation (2019)
- Coal and gas capacity (2019)
- Planned clean energy additions (2020-2030)
- Solar capacity planned
- Wind capacity planned
- Clean energy data source
- Climate goal
- Planned coal retirements
- Planned gas additions (through 2030)
- Sales and energy efficiency achievement by customer class (not available for all companies)
- State and technology-specific capacity factors

APPENDIX C: PARENT COMPANY CLIMATE GOALS

Parent Company	Climate Goal
Algonquin Power & Utilities Corp.	Reduce CO ₂ equivalent emissions by one million metric tons from 2017 levels and add 2,000 MW of new renewables capacity by 2023.
Alliant Energy Corp.	Reduce carbon emissions 50% by 2030 (2005 baseline); aspirational goal of net-zero emissions by 2050.
Ameren Corp.	Reduce carbon emissions 50% by 2030 and 85% by 2040 (2005 baseline); net-zero by 2050.
American Electric Power Company, Inc.	Reduce carbon emissions 70% by 2030 and 80% by 2050 (2000 baseline); aspirational goal of eventual net-zero emissions.
Arkansas Electric Cooperative Corp.	No goal.
Associated Electric Cooperative Inc.	No goal.
Basin Electric Power Cooperative	No goal.
Berkshire Hathaway	No goal.
Big Rivers Electric Corp.	No goal.
Buckeye Power, Inc.	No goal.
CenterPoint Energy, Inc.	Reduce company-wide operational emissions 70% by 2035 and emissions attributable to gas usage in heating, appliances, and equipment within the residential and commercial sectors by up to 30% by 2040 (2005 baseline).
City Public Service of San Antonio	No goal.
Cleco Partners L.P.	No goal.
CMS Energy Corp.	Reduce carbon emissions from electricity generation 90% by 2040 (2005 baseline); net-zero carbon emissions from that fleet by 2040. Net-zero methane emissions from gas delivery system by 2030.
Dominion Energy, Inc.	Company-wide net-zero GHG emissions by 2050.
DTE Energy Co.	Reduce carbon emissions 50% by 2030 and 80% by 2040 (2005 baseline); net-zero carbon emissions by 2050.
Duke Energy Corp.	Reduce carbon emissions 50% from the power side of its business by 2030 (2005 baseline); net-zero emissions by 2050.
East Kentucky Power Cooperative	No goal.
Emera Inc.	No goal.
Entergy Corp.	Reduce emissions intensity of utility-owned electric generation 50% by 2030 (2000 baseline); net-zero by 2050.
Eversource Energy, Inc.	Reduce carbon emissions 80% by 2050 (2005 baseline).
FirstEnergy Corp.	Reduce GHG emissions 30% by 2030 (2019 baseline); reduce carbon emissions 90% by 2045 (2005 baseline); carbon neutral by 2050.
Fortis Inc.	Reduce carbon emissions by 80 percent by 2035 (2020 baseline).
Great River Energy	Serve its all-requirements member-owner cooperatives with energy that is 50% renewable by 2030.
Hoosier Energy Rural Electric Cooperative, Inc.	Provide 10% of member-system energy requirements through renewable energy resources by 2025.
Idacorp, Inc.	100% clean energy by 2045.
Indianapolis Power & Light Co.	No goal.
Intermountain Power Agency	No goal.
JEA	30% of energy provided is carbon neutral by 2030.
Lower Colorado River Authority	No goal.
Nebraska Public Power District	No goal.

APPENDIX C: PARENT COMPANY CLIMATE GOALS, cont.

Parent Company	Climate Goal
NextEra Energy, Inc.	Reduce carbon emissions rate 67% by 2025 (2005 baseline), which is about a 40% reduction in absolute carbon emissions.
NiSource Inc.	Reduce GHG emissions from electric generation at least 90% and methane emissions from pipelines at least 50% by 2030 (2005 baseline).
OGE Energy Corp.	Expecting to reduce carbon emissions by 50% by 2030 (2005 baseline).
Oglethorpe Power Corp.	No goal.
Omaha Public Power District	Net-zero carbon emissions by 2050.
Orlando Utilities Commission	Net-zero carbon emissions by 2050; goal to reduce carbon emissions by 50% by 2030 (2005 baseline).
Pinnacle West Capital Corp.	100% carbon-free electricity by 2050 and clean energy makes up 65% of the resource mix by 2030, with 45% of that from renewable generation.
PNM Resources, Inc.	100% carbon-free electricity by 2040.
Portland General Electric Co.	Reduce GHG emissions by 80% by 2030 (2010 baseline); net-zero by 2040.
PPL Corp.	Reduce carbon emissions from electric utility business 70% by 2040 and 80% by 2050 (2010 baseline).
Puget Holdings LLC	Carbon-neutral electric system by 2030; 100% clean electricity by 2045.
Salt River Project	Reduce the amount of carbon emitted (per megawatt-hour) by 62% by 2035 (2005 baseline) and by 90% by fiscal year 2050. Reduce carbon emissions from facilities by 30% on a mass basis.
Seminole Electric Cooperative, Inc.	No goal.
South Carolina Public Service Authority	No goal.
Southern Co.	Reduce carbon emissions 50% by 2030 (2007 baseline); net-zero by 2050.
Tennessee Valley Authority	Reduce carbon emissions by 60% by 2020 and 70% by 2030 (2005 baseline).
Tri-State Generation and Transmission Association, Inc.	Reduce carbon emissions by 90% by 2030 from Colorado facilities it owns or operates (2005 baseline).
WEC Energy Group	Reduce carbon emissions 70% by 2030 (2005 baseline); net-carbon neutral by 2050.
Xcel Energy Inc.	Reduce company-wide carbon emissions 80% by 2030 (2005 baseline); 100% carbon-free electricity by 2050.

ENDNOTES

- 1 Sierra Club.
- 2 University of California, Santa Barbara (UCSB).
- 3 Ranked by remaining coal and gas generation and excluding merchant generators. Merchant generators are defined as those that are not rate regulated and where the owner of the generator is not obligated to replace the generator with an alternative power source if they choose to retire it.
- 4 See Appendix A for a list of parent and operating companies. See Appendix B for additional details on methods.
- 5 Total coal and gas net generation in 2019 was 2,551 million MWh. Source: [EIA](#), accessed 12/1/2020.
- 6 IPCC, [Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments](#), 2018.
- 7 IPCC, 2018.
- 8 Climate Analytics, [Global and regional coal phase-out requirements of the Paris Agreement: Insights from the IPCC Special Report on 1.5°C](#), 2019.
- 9 IPCC, 2018.
- 10 EIA Monthly Energy Review, [Environment Data](#).
- 11 Leah C. Stokes, [Short Circuiting Policy](#), 2020.
- 12 Leah C. Stokes, ["Cleaning up the Electricity System"](#), *Democracy Journal*, 2020.
- 13 Evolved Energy Research, [Federal Policy for Low-Carbon, High-Renewables Electricity](#), 2020.
- 14 Saul Griffith, [Rewiring America](#), 2020.
- 15 Griffith, 2020.
- 16 [IPCC 5AR WG](#), Myhre, G., D. Shindell, F.-M. Bréon, W. Collins, J. Fuglestedt, J. Huang, D. Koch, J.-F. Lamarque, D. Lee, B. Mendoza, T. Nakajima, A. Robock, G. Stephens, T. Takemura and H. Zhang, 2013: Anthropogenic and Natural Radiative Forcing. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- 17 Based on the 20 year global warming potential of methane of 86 from [IPCC 5AR WG](#), sec.8.7.1.2, pp.714, and a leakage rate of 3 percent from wellhead to power plant. For leakage rate citations see Sierra Club, [Fracked Gas: Nothing "Natural" About It](#).
- 18 The Rocky Mountain Institute, [The Growing Market for Clean Energy Portfolios](#), 2019.
- 19 Energy Innovation and Vibrant Clean Energy, [The Coal Cost Crossover](#), 2019.
- 20 Goldman School of Public Policy at the University of California, Berkeley, [2035 Report: Plummeting Solar, Wind, and Battery Costs Can Accelerate Our Clean Electricity Future](#), 2020.
- 21 Sierra Club, [Millions of Good Jobs: A Plan for Economic Renewal](#), 2020. This report was written by Ben Beachy, director of Sierra Club's Living Economy program. The job creation estimates were produced by Robert Pollin, Distinguished University Professor of Economics and codirector of the Political Economy Research Institute (PERI) at the University of Massachusetts Amherst, and Shouvik Chakraborty, Assistant Research Professor at PERI. The job creation estimates can be found in a PERI report, [Job Creation Estimates Through Proposed Economic Stimulus Measures](#). Published in May 2020.
- 22 EPI, [Utilities Knew: Documenting Electric Utilities' Early Knowledge and Ongoing Deception on Climate Change From 1968-2017](#), 2017; Leah Stokes, [Short Circuiting Policy](#), 2020.
- 23 EPI, [Utility Carbon Targets Reflect Decarbonization Slowdown In Crucial Next Decade](#), 2019.
- 24 Goldman School of Public Policy at the University of California, Berkeley, 2020.
- 25 Ranked by remaining coal and gas generation and excluding merchant generators. Merchant generators are defined as those that are not rate regulated and where the owner of the generator is not obligated to replace the generator with an alternative power source if they choose to retire it.
- 26 See Appendix A for a list of parent and operating companies. See Appendix B for additional details on methods.
- 27 Includes all coal plants that were either operating in 2010 or have been built since 2010.
- 28 Total generation from all fuels in 2019 was 4,127 million MWh, while total generation from the companies studied was 1,791 million MWh. Source: [EIA](#), accessed 10/7/2020.
- 29 The Sierra Club counts a plant as retired if it has ceased burning coal as its primary fuel type. A proposed retirement commitment is when an existing coal-fired plant has proposed to cease burning coal by the end of 2030.
- 30 NAACP, [Coal Blooded](#), 2016.
- 31 Health benefits as calculated by the [Clean Air Task Force](#) were apportioned to each of the 239 remaining coal units owned by the studied companies based on 2016 unit-level SO2 emissions.
- 32 Energy Innovation and Vibrant Clean Energy, 2019.
- 33 EIA 860, [2019 Operable Generator Data](#), accessed 9/29/2020.
- 34 The Rocky Mountain Institute, 2019.
- 35 Emily Grubert, ["Fossil electricity retirement deadlines for a just transition," Science](#), 2020.
- 36 The Rocky Mountain Institute, 2019.
- 37 Includes new gas capacity that is in the planning process from an announcement through construction.
- 38 The companies studied generated 1,310 million MWh from coal and gas. Total coal and gas net generation in the US in 2019 was 2,551 million MWh. Source: [EIA](#), accessed 12/1/2020.
- 39 These utilities only have plans to add 250 million MWh of new wind and solar to the grid by 2030. In order to decarbonize, a utility must retire its current fossil-fuel generation and replace that with new clean generation. This is a simplification but represents the basic transition each utility must make. This does not include potential changes in load or efficiency for each utility, which would shift the amount of clean energy needed to meet future demand. It also does not account for potential retirements of other forms of generation like hydro and nuclear, which would increase the amount of clean energy needed to achieve a zero-carbon power sector. This one-for-one swap of clean energy for fossil fuels is also conservative because it does not include increased load associated with electrification.
- 40 Eighty-one percent of current coal and gas generation is 1,060 million MWh.
- 41 Includes carbon emissions at the power plant as well as upstream methane emissions. Uses the 20 year global warming potential of methane of 86 from [IPCC 5AR WG](#), sec.8.7.1.2, pp.714. Cars calculation using [EPA Greenhouse Gas Equivalencies Calculator](#), accessed 12/4/2020.
- 42 Ibid.
- 43 Sierra Club, [Utility Greenwashing Online Dashboard](#), 2020.
- 44 According to company EIA-861 reporting. Data was unavailable for power cooperatives and certain investor-owned utilities.
- 45 Broken down by sector, the average annual energy efficiency achievement is 0.9 percent (residential), 0.8 percent (commercial), and 0.2 percent (industrial). These estimates are for 56 out of 79 operating companies in this report that disclose comprehensive utility-level data on their energy efficiency achievement.
- 46 NIPSCO, [Your Energy, Your Future](#), accessed 12/7/2020.
- 47 See Appendix C for a more detailed description of each utility's goal.
- 48 Using a 2005 baseline.
- 49 Appalachian Power is bound to be 100 percent carbon-free by 2050 by the Virginia Clean Economy Act. However, the company operates in both Virginia and West Virginia, and there is no such binding law in West Virginia.
- 50 PNM is in the process of being acquired by Avangrid. When this acquisition is complete, then Puget Sound Energy would be the only complete parent company bound by law to the company's stated climate goal.
- 51 Tri-State also has a goal that meets this standard, but it is only for Colorado.
- 52 David Pomerantz and Matt Kasper, Energy and Policy Institute, [Many U.S. electric utilities plan slow decarbonization over next decade, out of sync with Biden plan](#), 2020.
- 53 Synapse Energy Economics, [Investing in Failure: How Large Power Companies Are Undermining their Decarbonization Targets](#), 2020.
- 54 Synapse Energy Economics, 2020.
- 55 Includes pledges for net-zero emissions or 100 percent carbon-free electricity by any year. See Appendix C for a full list of climate goals.
- 56 Duke Energy Ohio is not included as their directly owned generation (1.0 million MWh) is very small in comparison to their annual retail sales (20.7 million MWh).
- 57 The clean energy generation was calculated by analyzing each utility's latest resource plan. Preferred scenarios were used except where there was no preferred scenario, in which case the base case was used.
- 58 This is based on a weighted average of the 2018 capacity factors of operating gas plants (as of March 2020) in the same state and of the same technology type.
- 59 Duke Energy, [Achieving a Net Zero Carbon Future: Duke Energy 2020 Climate Report](#), 2020.
- 60 Synapse Energy Economics, [Identifying Gaps Between Utility Decarbonization Targets and Actions](#), 2020.
- 61 S&P, Report: [Duke, Dominion and Southern set to miss climate targets](#), 2020.
- 62 Duke Energy Carolinas, [Integrated Resource Plan 2020 Biennial Report](#), 2020. Duke Energy Progress, [Integrated Resource Plan 2020 Biennial Report](#), 2020.
- 63 We excluded two utilities (Pacific Gas and Electric and Los Angeles Department of Water and Power) from the top 50 due to their significant amount of coal and gas purchased from power purchase agreements or bulk market purchases, which we could not account for in the scope of this study.
- 64 [Department of Energy National Renewable Energy Lab Quarterly Solar Industry Updates](#) and [EIA-923 Monthly Generation](#).
- 65 John Romankiewicz, [GitHub Repository](#), 2020.

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