

SECTION 04

Tracking Climate Action

The U.S. Utilities Decarbonization Index

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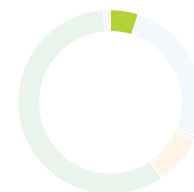


The 2022 Annual Utility Decarbonization Index, the first of its kind, tracks the decarbonization progress of the 30 largest investor-owned utilities (IOUs) in the U.S.

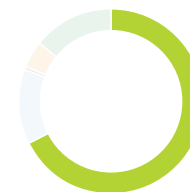
This index allows for direct comparison and evaluation of decarbonization efforts by the most prominent players in the energy sector.

What Are IOUs?

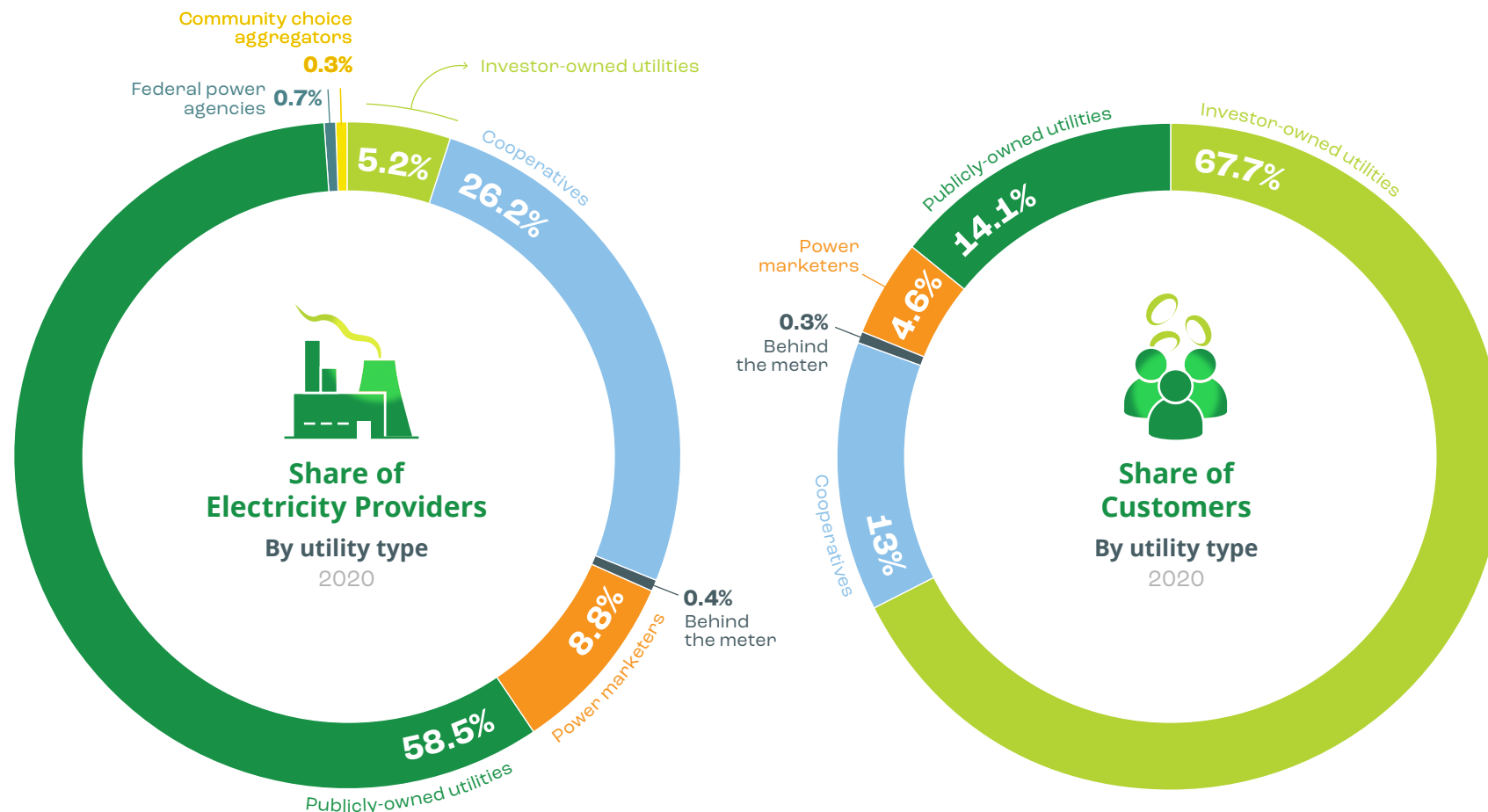
Investor-owned utilities are electric utilities that have publicly traded stock.



Of the **3,422** U.S. electric utilities, just **179** are IOUs.



Yet those 179 IOUs serve nearly **109 million**, or **68%** of all, U.S. electric customers.

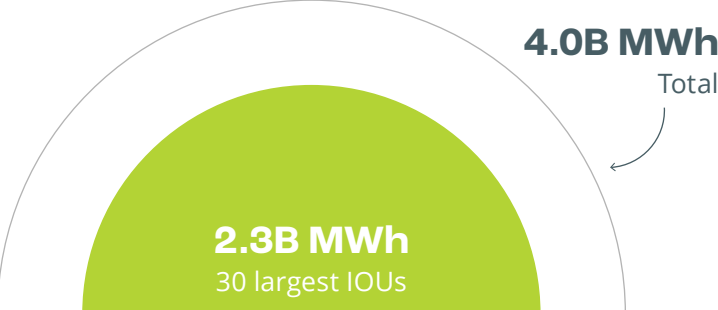


Source: EIA Form 861-2020 via APPA²⁰

The 30 Largest Investor-Owned Utilities

In 2020, the 30 largest IOUs accounted for roughly 58% of the country's net electricity generation, after taking purchased power into account.

U.S. net electricity generation 2020



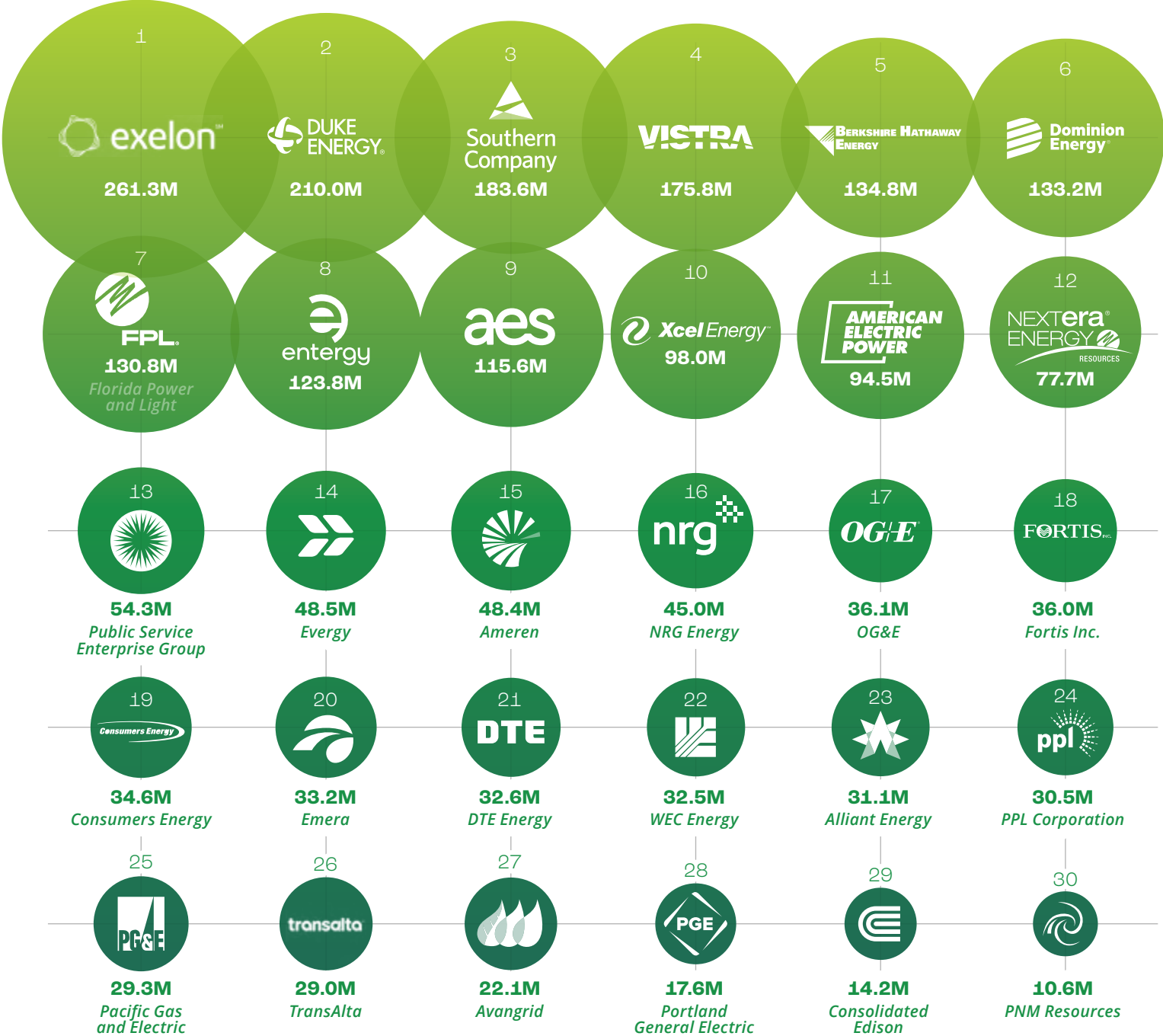
U.S. number of electric customers 2020



Source: EIA Form 861-2020 via APPA²⁰

30 Largest IOUs by Electricity Generation

Total owned & purchased net generation, MWh



Methodology

How the Utility Decarbonization Index Is Scored

The NPUC uses six metrics to track utility decarbonization.

Companies are scored on a scale of 1 (lowest) to 5 (highest) for each metric, and their overall decarbonization score is an average of these six metrics.



The Utility Decarbonization Index uses data from 2020, which was the latest available across the 30 largest IOUs as of June 2022.

A small number of utilities did not report adequate data for some of the above metrics. In such cases, we have excluded those utilities from our analysis for those metrics, which means they were ranked on five or fewer metrics.

01		Fuel Mix The share of low-carbon sources in the company's owned generation mix.	=	$\frac{\text{Owned net generation from low-carbon sources}}{\text{Total owned net generation}}$
02		CO2 Emissions Intensity The amount of CO2 emitted per megawatt-hour of electricity generated and purchased.	=	$\frac{\text{Total CO2 emissions from owned and purchased generation}}{\text{Total owned and purchased net generation}}$
03		Total CO2 Emissions The absolute CO2 emissions from owned and purchased electricity generation of each company.	=	$\frac{\text{Sum of CO2 emissions from owned and purchased generation}}{\text{Total number of retail customers}}$
04		CO2 Emissions Per Capita CO2 emissions from owned and purchased electricity generation per retail customer.	=	$\frac{\text{Total CO2 emissions from owned and purchased generation}}{\text{Total number of retail customers}}$
05		Decarbonization Goals An evaluation of the company's interim greenhouse gas reduction and net-zero targets.	=	$\frac{\text{Comparison of the company's climate goals against a baseline of 50\% GHG emissions reduction by 2030 and net-zero by 2050}}{\text{Total planned CAPEX for generation}}$
06		Low-carbon Investment The share of planned capital expenditure (CAPEX) for electricity generation dedicated to low-carbon sources.	=	$\frac{\text{Planned CAPEX for low-carbon generation}}{\text{Total planned CAPEX for generation}}$

The score indicates where they stand in reducing CO2 emissions, incorporating low-carbon generation, and setting climate targets in alignment with those set by the federal government.

The scores are based on the range of figures for each metric divided into five equal buckets. For instance, if the lowest reported CO2 emissions intensity is zero metric tons per MWh and the highest is one metric ton per MWh, companies that emit less than 0.2 metric tons per MWh will receive the highest score of 5. Those that emit between 0.2 and 0.4 metric tons of CO2 per MWh will receive a 4, and so on.

However, it's important to note that these scores are relative, and compare the top 30 utilities to each other. Therefore, a score of 5 does not indicate net-zero emissions—instead, it suggests that the utility is doing particularly well relative to its peers.

The 2022 Utility Decarbonization Index

- Leading The Way**
These utilities have the highest scores in the index, demonstrating strong leadership in decarbonization efforts.
- Accelerating Progress**
These utilities have shown significant improvement in their decarbonization efforts compared to the previous year.
- Steady Progress**
These utilities have shown consistent progress in their decarbonization efforts.
- Stagnant**
These utilities have not shown significant progress in their decarbonization efforts.
- At Risk**
These utilities have the lowest scores in the index, indicating a need for more aggressive decarbonization efforts.



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The data is presented as a grid, with each cell representing a utility's score in a specific category. The color scale ranges from green (highest score) to orange (lowest score).

The 2022 Utility Decarbonization Index

Top 30 Companies

CRU



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CRU
2022

Top of the Chart



Performance is the highest level of achievement, indicating that the organization has met or exceeded its goals. This is a result of strong leadership, clear communication, and a focus on continuous improvement.



Leadership is the highest level of achievement, indicating that the organization has met or exceeded its goals. This is a result of strong leadership, clear communication, and a focus on continuous improvement.



Results is the highest level of achievement, indicating that the organization has met or exceeded its goals. This is a result of strong leadership, clear communication, and a focus on continuous improvement.

Room for Improvement



Performance is the lowest level of achievement, indicating that the organization has not met its goals. This is a result of weak leadership, poor communication, and a lack of focus on continuous improvement.



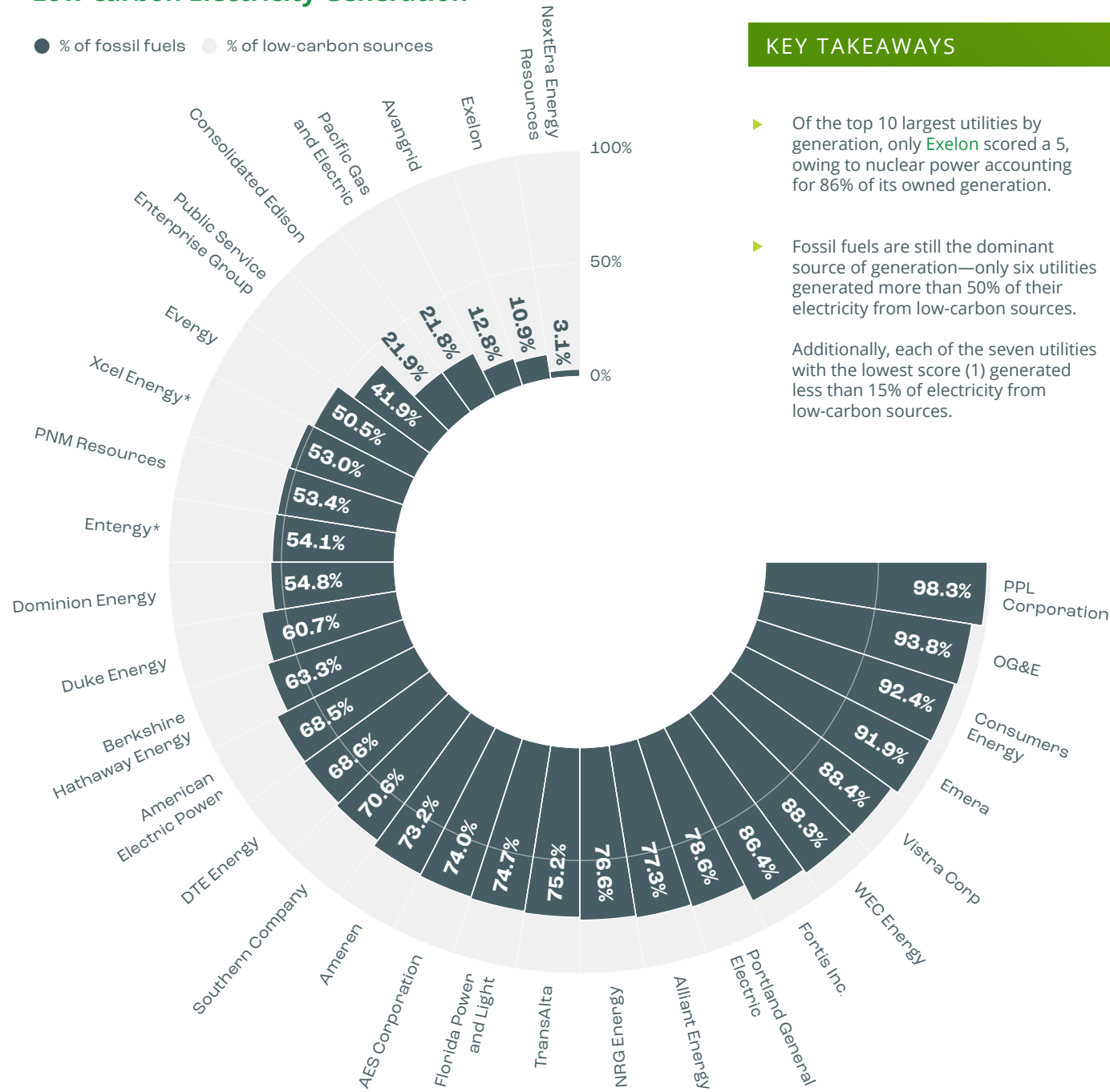
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Metric 01 Fuel Mix

The fuel mix score is based on the share of low-carbon sources in a utility's owned net generation. Low-carbon sources include renewables, nuclear power, and fuel cells, while fossil fuels include coal, natural gas, petroleum, and petroleum coke.

Top 30 Utilities by Share of Low-carbon Electricity Generation

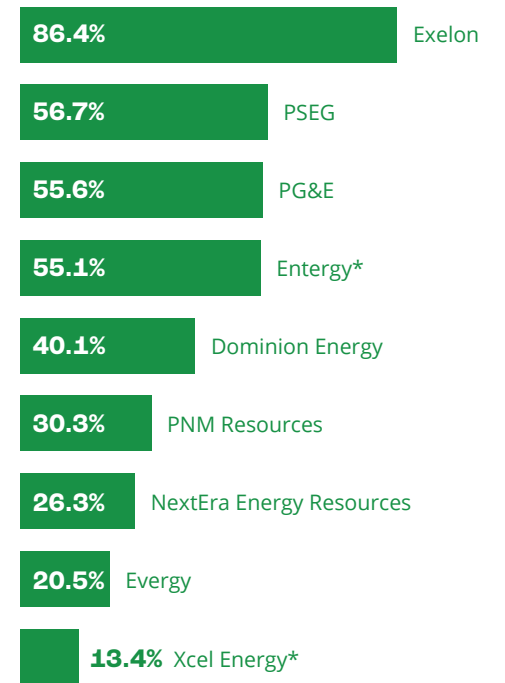


KEY TAKEAWAYS

- ▶ Of the top 10 largest utilities by generation, only **Exelon** scored a 5, owing to nuclear power accounting for 86% of its owned generation.
- ▶ Fossil fuels are still the dominant source of generation—only six utilities generated more than 50% of their electricity from low-carbon sources.
- ▶ Nuclear was the largest source of low-carbon electricity generation overall, accounting for 30% of the total generation of the top 30 utilities. Wind was the second-largest source with an 11% share.
- ▶ Among utilities that scored 3 or more, a larger share of nuclear generation was a common theme:

Additionally, each of the seven utilities with the lowest score (1) generated less than 15% of electricity from low-carbon sources.

Share of Nuclear in Owned Net Electricity Generation



Share of low-carbon sources in owned electricity generation

Fuel mix score

Less than 20%	1
20–40%	2
40–60%	3
60–80%	4
More than 80%	5

*Xcel Energy and Entergy did not report owned net electricity generation separately. Therefore, their fuel mix includes purchased power.

Metric 02

CO2 Emissions Intensity

The emissions intensity is calculated by dividing the total CO2 emissions by the total revenue. This metric is used to compare the emissions intensity of different companies. The lower the emissions intensity, the better the company is performing in terms of reducing its CO2 emissions.

The emissions intensity is a key performance indicator (KPI) for companies. It is used to track the progress of the company's decarbonization strategy. The emissions intensity is also used to benchmark the company's performance against its peers in the industry.

Company	CO2 Emissions Intensity
Company A	1.2
Company B	1.5
Company C	1.8
Company D	2.1
Company E	2.5
Company F	3.0

Source: Sustainability Report 2023
Data as of 31 December 2023



The emissions intensity is calculated by dividing the total CO2 emissions by the total revenue.

The emissions intensity is a key performance indicator (KPI) for companies.

Download Report

- Download the full report for more details on our CO2 emissions intensity and other sustainability metrics.
- Access the report for free or purchase a premium version with additional insights and data.

Download Report

Source: Sustainability Report 2023
Data as of 31 December 2023

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Metric 03 Total CO2 Emissions

The scope 1 & 2 emissions represent the direct and indirect emissions from sources owned or controlled by the company. Scope 3 emissions represent the indirect emissions from sources not owned or controlled by the company, but from which the company is responsible.

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The Breakdown by Sector



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Year	CO2 Emissions (tonnes)
2020	100,000
2021	120,000
2022	150,000
2023	180,000
2024	200,000
2025	220,000

- Increased energy efficiency in manufacturing plants.
- Renewable energy adoption in retail stores.
- Optimized logistics routes to reduce fuel consumption.



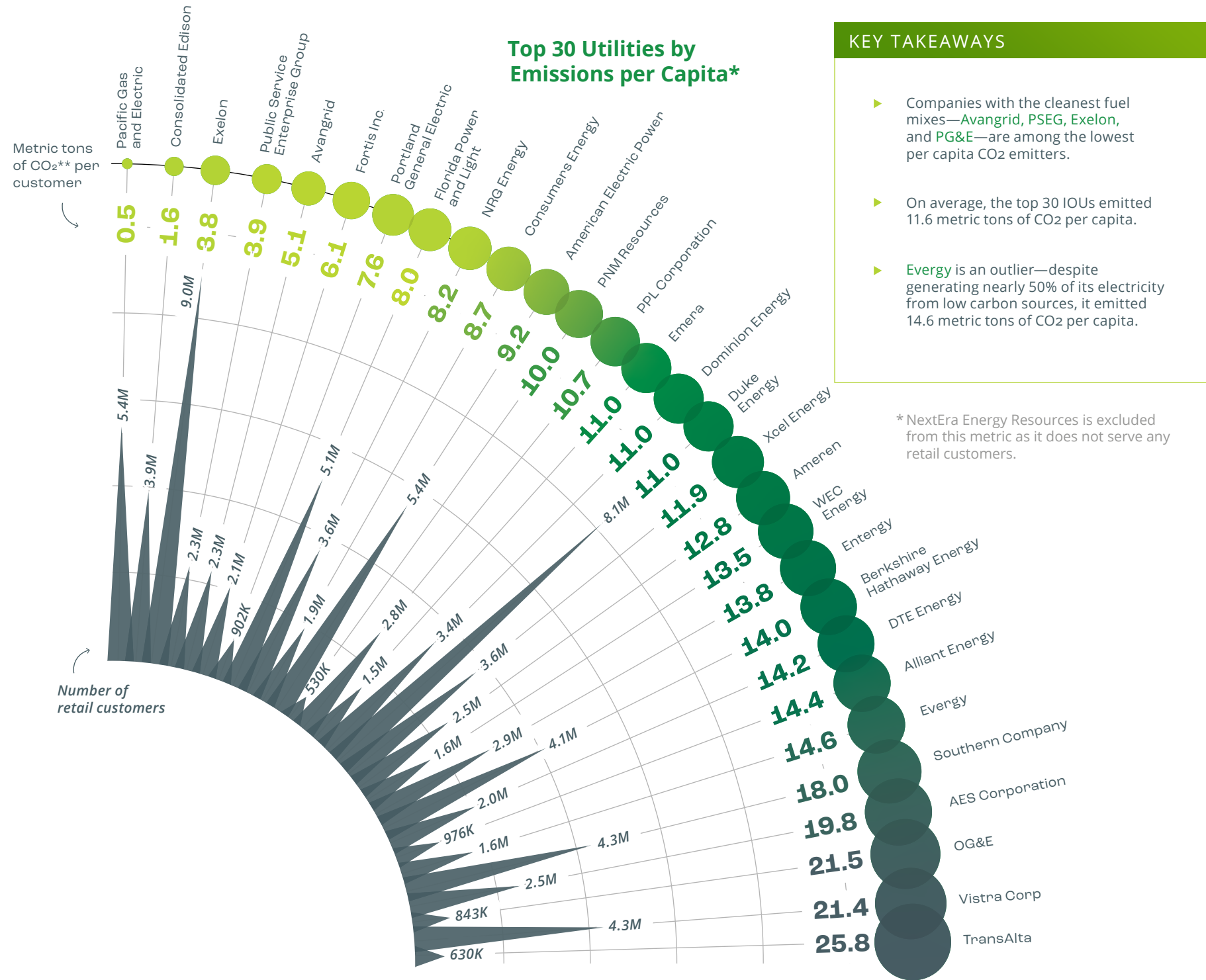
Metric 04

CO₂ Emissions per Capita

The CO₂ emissions per capita metric measures how many metric tons of CO₂ a utility emits for every retail customer served, accounting for the differences in sizes of the 30 largest IOUs.

For context, the number of customers served ranges from around 530,000 for the smallest utility to over nearly 9 million for the largest. However, it's also important to note that some of these customers are industrial and consume much more energy than the average household.

Total metric tons of CO ₂ emissions per customer	CO ₂ emissions per capita score
More than 20Mt	1
20–15Mt	2
15–10Mt	3
10–5Mt	4
Less than 5Mt	5



KEY TAKEAWAYS

- ▶ Companies with the cleanest fuel mixes—Avangrid, PSEG, Exelon, and PG&E—are among the lowest per capita CO₂ emitters.
- ▶ On average, the top 30 IOUs emitted 11.6 metric tons of CO₂ per capita.
- ▶ **Eversource** is an outlier—despite generating nearly 50% of its electricity from low carbon sources, it emitted 14.6 metric tons of CO₂ per capita.

* NextEra Energy Resources is excluded from this metric as it does not serve any retail customers.

**Based on CO₂-equivalent emissions for companies that didn't report CO₂ emissions separately.

Decarbonization Goals



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Metric 06

Low-carbon Investment

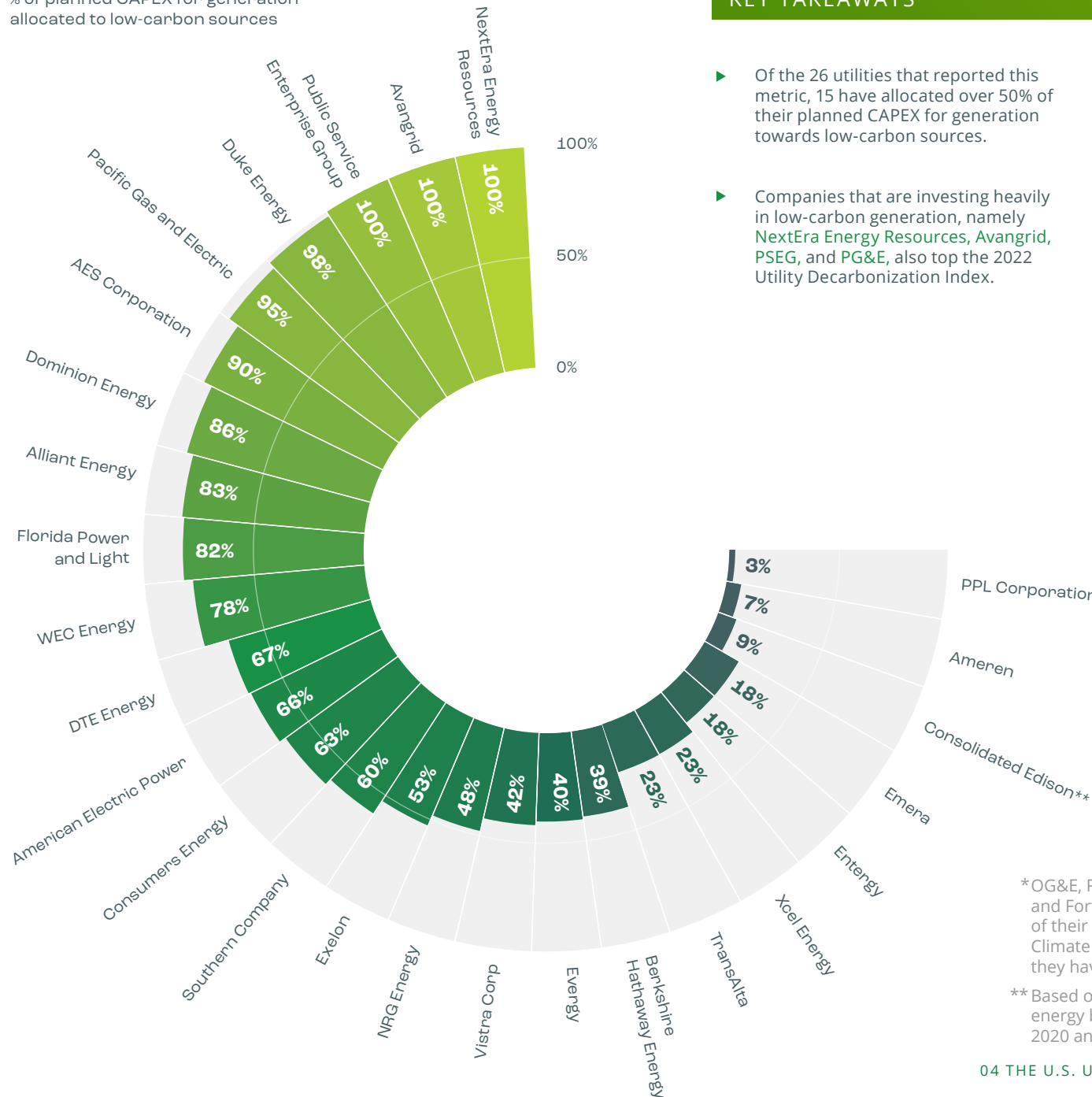
To achieve long-term emissions targets, utilities may need to strategize and allocate funds toward expanding their clean electricity generation.

The low-carbon investment metric measures the share of each utility's planned capital expenditure (CAPEX) for electricity generation dedicated to low-carbon sources. It uses data from annual reports and the Climate Disclosure Project's (CDP) climate change questionnaire for 2021, where utilities provide a breakdown of their planned CAPEX.²¹

Share of planned generation CAPEX for low-carbon sources	Low-carbon investment score
Less than 20%	1
20–40%	2
40–60%	3
60–80%	4
More than 80%	5

Top 30 Utilities by Low-carbon Investment*

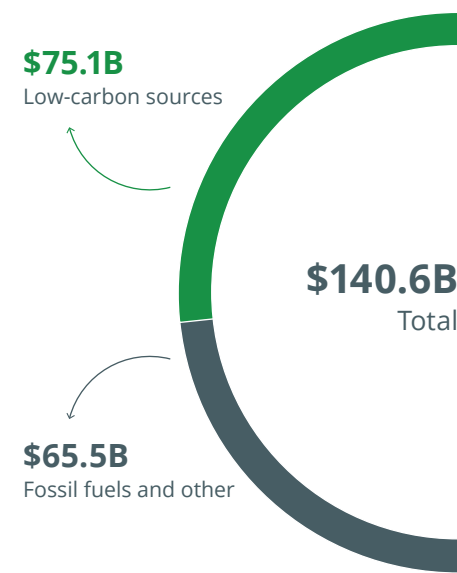
% of planned CAPEX for generation allocated to low-carbon sources



KEY TAKEAWAYS

- Of the 26 utilities that reported this metric, 15 have allocated over 50% of their planned CAPEX for generation towards low-carbon sources.
- Companies that are investing heavily in low-carbon generation, namely NextEra Energy Resources, Avangrid, PSEG, and PG&E, also top the 2022 Utility Decarbonization Index.
- Several utilities that are lagging in other metrics, like WEC Energy, DTE Energy, and Southern Company, are dedicating the majority of their planned expenditure to low-carbon sources.
- By contrast, 11 utilities have dedicated over 50% of their planned generation CAPEX toward fossil fuels, either for expansion or maintenance of existing assets.

Total (30 IOUs) Planned CAPEX for Generation through 2026



*OG&E, PNM Resources, Portland General Electric, and Fortis Inc. either did not provide breakdowns of their planned CAPEX or did not submit the CDP Climate Change questionnaire. For this reason, they have been excluded from this metric.

**Based on the amount allocated to clean energy businesses in Consolidated Edison's 2020 annual report.