

EEI INVESTOR ESG REPORT

2022



CONTENTS

SECTION 1: QUALITATIVE REPORT

- 04** About AEP
- 05** AEP's Decarbonization Strategy
- 07** Just Transition
- 08** Human Capital Management
- 09** Diversity, Equity & Inclusion
- 10** Securing the Grid
- 10** Sustainability & ESG Strategy

SECTION 2: QUANTITATIVE REPORT

- 15** American Electric Power
- 25** Appalachian Power
- 32** Kentucky Power
- 39** Indiana Michigan Power
- 46** Wheeling Power
- 53** Public Service Company of Oklahoma
- 60** Southwestern Electric Power Company
- 67** Ohio Power Company
- 74** Energy Supply
- 81** Appendix

Section 1

QUALITATIVE REPORT

About AEP

American Electric Power, based in Columbus, Ohio, is powering a cleaner, brighter energy future for its customers and communities. AEP's approximately 16,700 employees operate and maintain the nation's largest electricity transmission system and more than 224,000 miles of distribution lines to safely deliver reliable and affordable power to 5.5 million regulated customers in 11 states. AEP also is one of the nation's largest electricity producers with approximately 31,000 megawatts of diverse generating capacity, including more than 7,100 megawatts of renewable energy. The company's plans include growing its renewable generation portfolio to approximately 50% of total capacity by 2030. AEP is on track to reach an 80% reduction in carbon dioxide emissions from 2000 levels by 2030 and has committed to achieving net-zero by 2050. AEP is recognized consistently for its focus on sustainability, community engagement, and diversity, equity and inclusion. AEP's family of companies includes utilities AEP Ohio, AEP Texas, Appalachian Power (in Virginia and West Virginia), AEP Appalachian Power (in Tennessee), Indiana Michigan Power, Kentucky Power, Public Service Company of Oklahoma, and Southwestern Electric Power Company (in Arkansas, Louisiana, east Texas and the Texas Panhandle). AEP also owns AEP Energy, which provides innovative competitive energy solutions nationwide.

For more information, visit [aep.com](https://www.aep.com).



AEP's Decarbonization Strategy

Strong financial and operational performance is inextricably linked to robust environmental, social and governance (ESG) practices and strategy. Awareness of how ESG impacts the full value chain helps to inform business decisions while delivering results. Whether aligning our capital investments with our decarbonization and grid modernization strategy, or our commitment to a strong safety culture and governance practices, AEP's efforts to integrate ESG into the business deliver short- and long-term value for all stakeholders.

In 2021, we set new carbon reduction goals – our goal is to reduce AEP's carbon emissions from directly owned generation (scope 1) 80% by 2030 compared to 2000 levels and to achieve net-zero emissions by 2050 (scopes 1 and 2). The climate scenarios we conducted showed that we can reach more than 95% toward zero by 2050 with conventional technologies, and we remain hopeful that emerging technologies such as advanced nuclear, carbon capture, hydrogen and energy storage will help us close that gap. Through the end of 2021, AEP has reduced its carbon emissions 70% from 2000 levels. We are committed to periodically reviewing these goals as we work toward a clean energy future.

In total, from 2011 to 2021, AEP has retired or sold more than 13,700 MW of coal-fueled generation, and we have plans to retire another 5,300 MW between 2022 and 2028. That will leave five remaining coal plants on our system totaling 6,500 MW. The timing for full retirement of coal-fueled generation assets will be based on a combination of factors, including expected investments for operations, overall economics, useful asset life and depreciation rates, and reliability factors highlighted in our integrated resource plans. In addition, we rely on our partnerships with our state regulators and local communities to assess the economics, timing and impacts.

AEP's goals and our strategy for transitioning are driven by our integrated resource plans, which are overseen by state regulators.

AEP's Carbon Emission Reduction Goals

NET-ZERO BY 2050

80% reduction by 2030*

*From a 2000 baseline



Increasingly, we have seen renewables become more cost competitive, enabling AEP to invest in economical clean energy resources that also reduce our carbon footprint. In addition, many of our customers want clean energy for their homes and businesses. Our strategy is to meet that demand where regulators support it.

2021 marked an important milestone in AEP's clean energy transition when the company announced a plan to shift our generation portfolio from majority fossil fuel to majority renewables by the end of this decade. The strategy proposes adding approximately 16 gigawatts of new regulated renewable resources by 2030. This includes the 1,484 MW North Central Energy Facilities which were completed in March 2022 and are now delivering lower-cost, clean energy to our customers in Oklahoma, Louisiana, and Arkansas.

Our capital investment strategy is critical in supporting our decarbonization and renewable energy strategy. From 2022 through 2026, AEP plans to invest \$38 billion in capital with an emphasis on transmission, distribution and regulated renewable energy with the ability to shift capital as needed. This includes investing \$8.2 billion in regulated renewable generation. Additionally, we eliminated growth

capital in the Generation & Marketing segment as we have begun the process to sell some or all of our unregulated renewable assets. This will provide additional capital to invest in our core regulated businesses to support rebuilding and reinforcing the grid and enhancing service for customers.

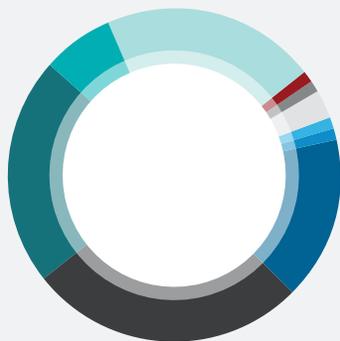
Having a modern, reliable, resilient and secure grid is vital to our clean energy transformation. Investing in the grid enables AEP's decarbonization strategy as we prepare to accommodate new, cleaner

grid resources, grow load in our service territory, and open the door to future customer-driven growth opportunities. This is essential to serving evolving societal, economic and customer needs as well as meeting our net-zero carbon goals.

Decarbonizing our generating fleet is only part of our story. Electric utilities play a vital role in decarbonizing and electrifying our economy. This includes investing in smart grid technologies to support Electric Vehicle (EV) charging infrastructure, deploying cost-saving customer

Capital Forecast - 2022-2026

In billions



- **7%** IT/Workplace Services - \$2.5
- **21%** Regulated Renewables - \$8.2
- **1%** Nuclear Generation - \$0.3
- **1%** Regulated Environmental Generation - \$0.6
- **3%** Regulated Fossil/Hydro Generation - \$1.0
- **1%** Regulated New Generation - \$0.4
- **1%** Generation & Marketing - \$0.4
- **16%** AEP Transmission Holdco - \$6.1
- **27%** Distribution - \$10.4
- **22%** Transmission - \$8.3

Capital Forecast Emphasizes Investment in Wires and Renewables



of capital allocated to regulated businesses



allocated to wires - \$24.8B



allocated to regulated renewables - \$8.2B

programs, and influencing public policies to support the continued growth of electric transportation options. AEP's electric transportation initiatives are critical to supporting this growth, including providing customers with accessible and affordable charging options and identifying and supporting EV-ready sites for our customers and communities to support this transition.

Investing in the strength and resilience of our communities is essential to serving evolving societal needs. This includes investing in infrastructure to support our growing telecommunication needs. Over the past five years, we've expanded and modernized our telecommunications system to support our growth. We now have one of the largest private networks in the United States. We continue to explore opportunities to leverage our system to support broadband expansion in rural and underserved areas. Broadband technology has proven to be critical to the economic development and well-being of rural America and other underserved areas, especially as businesses and schools continue to move toward an increased remote working environment. Learn more about our broadband initiatives in the [Broadband Accessibility section](#).

Just Transition

More often than not, the transition to a clean energy economy focuses on carbon emissions reductions as the leading indicator of success in slowing the effects of climate change. But climate change is as much a structural change to our economy as it is an environmental issue. As we transition to cleaner forms of energy, there are impacts to people, communities and society at large that must be considered and thoughtfully managed. The low-carbon transition is a double-edge sword with lasting socio-economic effects, especially for communities dependent on the fossil fuel industry for jobs, taxes and corporate philanthropic support. At AEP, we are establishing a new model for enabling a Just Transition that is collaborative, inclusive and community-driven.



Advancing AEP's Clean Energy Transformation



Add Clean Wind & Solar Generation

Proposing to add ~16,000 MW (2021-2030)



Increase Renewable Generating Portfolio

Our renewable portfolio will represent ~50% of our total capacity by 2030



Modernize the Energy Grid

65% of our capital allocated to wires (2022-2026)



Reduce Carbon Emissions

Achieve net-zero emissions by 2050



Reduce Coal Capacity

~5,300 MW planned reduction (2022-2028)

Human Capital Management

Human capital management (HCM) is one of the most significant corporate governance issues today. Hiring, training and retaining top talent is a critical enabler of business value. This includes having the right corporate practices and policies in place for safety and health, compensation, diversity, equity and inclusion, well-being and culture. This is even more critical as we shift and plan for the workforce of the future – one that is digital, distributed and diverse.

Culture serves as the foundation for success at AEP. An engaged, collaborative and appreciated workforce is an empowered workforce. We continue to measure our culture journey and progress through our annual employee culture survey. 2021 marks our eighth consecutive year of formally surveying employees about their experiences with culture at AEP. Our 2021 culture scores improved across the organization, showing that we continue to make in-roads, even during difficult circumstances. For the third consecutive year, AEP has earned the 2022 Gallup Exceptional Workplace Award, which recognizes organizations that incorporate employee engagement into core business values.



As we prepare our workforce for the future, we are fostering an environment that encourages collaboration, innovation and communication no matter where we work. Through training, development and growth opportunities, employees are acquiring the skills needed to align with our strategy for a clean energy future. This is especially important as we embrace a digital and more distributed work model that requires a flexible, innovative and diverse workforce.

In 2021, AEP Ohio partnered with local community non-profit agencies to design and pilot the Women in Linework (WiL) Program. As part of a recruiting effort to address an industry-wide shortage of female lineworkers, the development program will offer qualified participants a direct path into AEP's apprenticeship program, offering technical and foundational training, career prep and the opportunity to earn credentials. Through the creation of pathways, WiL is designed to remove historical biases that hinder women from entering line work. The 14-month program provides technical training, career readiness, mentoring, wrap-around support services, and pre-apprentice educational assistance that will potentially lead women to full-time employment with AEP as lineworkers. The participants will also obtain a Class A Commercial Driver's License. This not only sets the stage for long-term career success but also positively impacts the economic stability and prosperity of women within the communities served by AEP.



Diversity, Equity & Inclusion

AEP is committed to cultivating a diverse and inclusive environment that supports the development and advancement of all. We foster an inclusive workplace that celebrates and values all forms of diversity including culture, background and diversity of thought, while actively working to eliminate unconscious biases. In addition, we believe our workforce should generally reflect the diversity of our customers and the communities we serve so that we may better understand how to tailor our services to meet their expectations. We continue to work on our Diversity, Equity & Inclusion Strategic Plan Roadmap to 2025 and we are making progress. The Roadmap sets goals and targets to increase the inclusion and advancement of underrepresented groups, such as women and people of color, and establishes leadership accountability. Our DEI progress is tied to enterprise, business unit and operating company annual incentive compensation objectives, which is measured through our annual employee culture survey. We also monitor progress through our support and participation in a number of external partnerships and DEI commitments. In addition, the Human Resources Committee of the Board of Directors provides oversight of our compensation and human resources policies and practices, including an annual review of our diversity, equity and inclusion strategy, results of our culture survey and compliance with equal opportunity laws.

AEP's DEI Efforts

- **Social and Racial Justice Grant Program** - The American Electric Power Foundation created the Delivering On The Dream grant program to help dismantle systemic racism and prejudice while prioritizing diversity, equity and inclusion. This five-year, \$5 million initial investment funds organizations with programs dedicated to advancing social and racial justice in the communities we serve.

- **Pay Equity Study** - AEP analyzes pay variances for female and minority employees after controlling for factors such as job title, years of service (time in job and time outside of job), estimated prior experience and average performance ratings. Potential individual female and minority employee wage disparities are further investigated, and if an acceptable basis for the disparity is not identified, their pay is increased to address the disparity.
- **Safe Space Conversations** - We continued to facilitate virtual "Safe Space Conversations" for employees to discuss how current race and equity issues impact them in the workplace and in their personal lives. In 2021, AEP's CEO participated in an Anti-Asian Hate Safe Space Conversation hosted by our Asian American employee resource group.
- **DEI Training** - AEP's "Mitigating Bias in Candidate Selection" eLearning course is an interactive, self-paced course that focuses on bias and its impact on the candidate selection process. This self-paced course is required for all supervisors with a direct report and employees involved in interviewing candidates.
- **Dedicated Faith/Meditation Rooms** - In an effort to celebrate diverse religions and beliefs, AEP created dedicated faith or meditation rooms at several of our locations.
- **Affirmative Action Program** - In 2021, AEP's Human Resources team developed more than 110 affirmative action plans for all AEP sites with more than 50 employees. Each plan contains goals and guidance for leaders to utilize to diversify their workforce at their respective facility.



Securing the Grid

As one of the largest electric utilities in the U.S., we have a responsibility to keep our customers' lights on 24/7. The nation's power grid is subject to an array of threats including extreme weather, vandalism, terrorism, cyberattacks and insider risks, all of which have the potential to jeopardize reliability, safety and data security. The growing reality of cyber and physical threats to our industry's infrastructure requires companies to implement leading security practices, policies and oversight to prevent, protect against or reduce the impacts of cyber and physical attacks. The need to protect the power grid from these threats is especially heightened in light of current geopolitical events.

AEP continually evaluates cyber and physical security risks enterprise-wide using our comprehensive security strategy known as "Defense in Depth." Using a risk management approach, this strategy assumes a broad range of threat possibilities, such as physical theft, unauthorized access to data, third-party risk and incidental threats that do not specifically target protected systems or assets. Leveraging a more comprehensive approach to understanding and managing these risks in relation to other enterprise risks enables us to make decisions based on the level of acceptable risk while informing our priorities and resource needs.

Strong governance, oversight and regulations are vital to the strength and resilience of our bulk electric system (BES). The cyber and physical security of the BES is highly regulated by the federal government through North American Electric Reliability Corporation's (NERC) Critical Infrastructure Protection (CIP) Standards. In addition to regulatory oversight, AEP has a multi-level governance structure that focuses on managing security risk across the entire system. In 2021, AEP's Board of Directors formed a Technology Committee that provides review and oversight of issues related to setting information technology (IT) and cybersecurity strategy.

Sustainability & ESG Strategy

For more than a decade, AEP has been monitoring and managing material ESG-related risks and opportunities. This includes responding to ESG surveys, ratings and rankings; disclosing metrics relevant to our industry and company; and engaging with diverse stakeholders who are interested in our ESG efforts and performance. We developed a robust disclosure strategy to help drive our goal of being transparent and accessible, guided by our ESG Materiality Assessment, which serves as the foundation for defining AEP's material issues. Through Datamaran's cloud-based AI software platform, we are leveraging data-driven insights to continuously identify and monitor new or emerging issues that may impact our company. This serves as a critical input for our corporate strategy, risk management, and disclosure and engagement, as well as meeting growing stakeholder expectations.

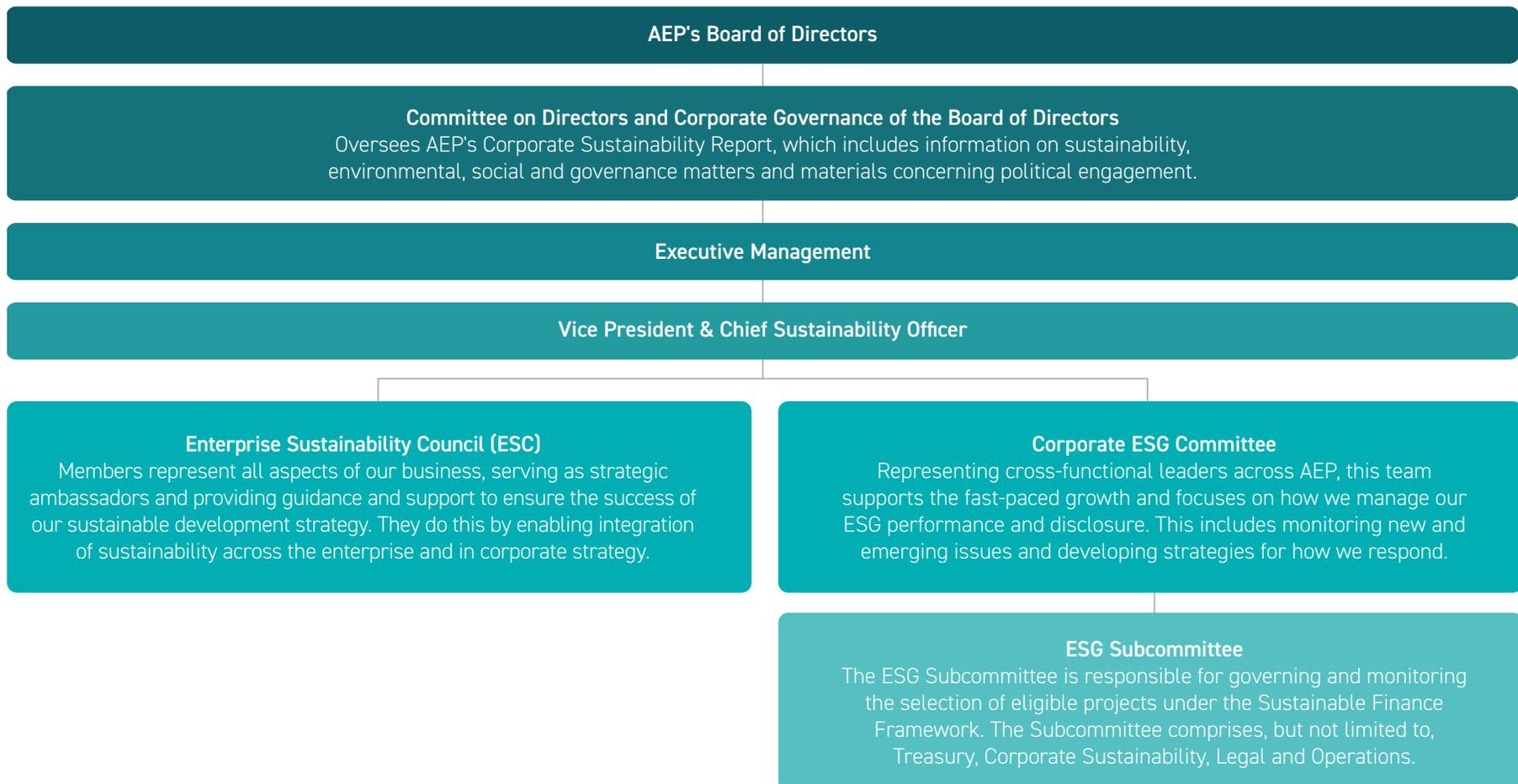


Sustainability & ESG Governance

Solid ESG performance is a reflection of strong governance. Leadership and governance are foundational to building and strengthening sustained business value and ensuring transparency, fairness and accountability, while providing structure to ethically manage the challenges of a changing society. At AEP, we are committed to strong governance practices that protect the long-term interests of our stakeholders.

Our Board of Directors works closely with our executive team to ensure we continually meet or exceed the highest standards of performance, ethics and service. In addition, the Board receives educational presentations from outside experts, and Board members attend educational sessions on their own.

AEP's ESG Governance Structure



How and where sustainability fits into the corporate structure can reveal a company's priorities. At AEP, we've created structured oversight to support sustainability, ESG performance and disclosure. This includes an Enterprise Sustainability Council, Corporate ESG Committee, ESG Subcommittee and AEP's Committee on Directors and Corporate Governance of the Board of Directors, which has responsibility for overseeing the company's ESG/sustainability initiatives. In addition, since 2010, AEP's internal Audit Services team has conducted a limited review of select company performance statements in our annual Corporate Sustainability Report.

While sustainability and ESG issues are discussed by the Board of Directors throughout the year, we report to the Committee on Directors and Corporate Governance on our sustainability-related activities at least twice per year. In addition, the Lead Director of AEP's Board of Directors conducts annual outreach with our largest institutional shareholders on important ESG matters. The Chairman of the Board also engages on these issues throughout the year with investors and other stakeholders.

The combined internal audit and governance through the Board of Directors, executive management and the Enterprise Sustainability Council helps us ensure our disclosure undergoes a disciplined review and validation process.

[Learn more about AEP's Corporate Governance](#) as well as Climate Governance in our [Climate Impact Analysis Report](#).

Governance & Oversight - AEP Material Issues

Material ESG Issues	Board Oversight	Management Oversight
Environmental		
Carbon Emissions Reductions	●	●
Non-emitting Generation Capacity Growth	●	●
Environmental Compliance	●	●
Social		
Safety, Health & Well-being	●	●
Diversity, Equity & Inclusion	●	●
Culture	●	●
Supplier Diversity	●	●
Governance		
Reliability Compliance	●	●
Enterprise Risk Management	●	●
Cyber & Physical Risk	●	●
Sustainability	●	●
Political Engagement	●	●
Ethics & Compliance	●	●

Index of Links

Environment

[Climate Impact Analysis Report](#)

[Decarbonization Strategy](#)

[Emissions](#)

[New Source Review](#)

[Water Management](#)

Social

[Diversity & Inclusion](#)

[Safety & Health](#)

[Human Capital Management](#)

[Economic Impact](#)

[Customer Experience](#)

[Community Support](#)

[Environmental & Social Justice](#)

[Broadband Accessibility](#)

Governance

[Political Engagement](#)

[Enterprise Security](#)

[Risk Management](#)

[Supply Chain Management](#)

[Ethics & Compliance](#)

Other ESG Disclosures

[Chairman's Message](#)

[Investor Relations ESG Website](#)

[2021 Coal Generation Rate Base](#)

[2021 Revenues from Coal](#)

[AEP's ESG Data Center](#)

[AEP's TCFD Climate Impact Analysis Report](#)

[ESG Reports \(SASB, GRI, CDP\)](#)

[AEP's ESG Performance Scorecard](#)

Contacts

Darcy Reese

Vice President, Investor Relations

American Electric Power

dreese@aep.com

614-716-2840

Sandy Nessing

Vice President & Chief

Sustainability Officer

American Electric Power

smnessing@aep.com

614-716-2570

Section 2

QUANTITATIVE REPORT

American Electric Power

Ref. No.	Portfolio	Baseline Year		
		2000	2020	2021
1	Owned Nameplate Generation Capacity at End of Year (MW)	37,369	25,496	24,857
1.1	Coal	25,556	13,230	11,858
1.2	Natural Gas	8,195	7,684	7,615
1.3	Nuclear	2,740	2,288	2,296
1.4	Petroleum	36	0	0
1.5	Total Renewable Energy Resources	842	2,294	3,088
1.5.1	Biomass/Biogas	0	0	0
1.5.2	Geothermal	0	0	0
1.5.3	Hydroelectric	842	853	805
1.5.4	Solar	0	229	362
1.5.5	Wind	0	1,212	1,921
1.6	Other	0	0	0

American Electric Power

Ref. No.	Portfolio	Baseline Year		
		2000	2020	2021
2	Net Generation for the Data Year (MWh)	196,942,749	94,529,102	98,993,037
2.1	Coal	160,080,902	42,595,308	49,601,849
2.2	Natural Gas	26,388,802	18,530,960	16,046,688
2.3	Nuclear	9,745,654	18,268,937	17,960,716
2.4	Petroleum	44	0	0
2.5	Total Renewable Energy Resources	727,347	15,133,897	15,383,784
2.5.1	Biomass/Biogas	0	0	0
2.5.2	Geothermal	0	0	0
2.5.3	Hydroelectric	727,347	1,356,104	999,943
2.5.4	Solar	0	547,025	769,830
2.5.5	Wind	0	13,230,768	13,614,011
2.6	Other	0	0	0

American Electric Power

Ref. No.	Portfolio	Baseline Year		
		2000	2020	2021
2.i	Owned Net Generation for the Data Year (MWh)	196,942,749	76,459,882	82,567,070
2.1.i	Coal	160,080,902	38,184,507	45,052,460
2.2.i	Natural Gas	26,388,802	14,175,228	13,077,646
2.3.i	Nuclear	9,745,654	18,268,937	17,960,716
2.4.i	Petroleum	44	0	0
2.5.i	Total Renewable Energy Resources	727,347	5,831,210	6,476,248
2.5.1.i	Biomass/Biogas	0	0	0
2.5.2.i	Geothermal	0	0	0
2.5.3.i	Hydroelectric	727,347	1,121,235	860,163
2.5.4.i	Solar	0	535,200	745,647
2.5.5.i	Wind	0	4,174,775	4,870,438
2.6.i	Other	0	0	0

American Electric Power

Ref. No.	Portfolio	Baseline Year		
		2000	2020	2021
2.ii	Purchased Net Generation for the Data Year (MWh)	-	18,069,220	16,425,967
2.1.ii	Coal	-	4,410,801	4,549,389
2.2.ii	Natural Gas	-	4,355,732	2,969,042
2.3.ii	Nuclear	-	0	0
2.4.ii	Petroleum	-	0	0
2.5.ii	Total Renewable Energy Resources	-	9,302,687	8,907,536
2.5.1.ii	Biomass/Biogas	-	0	0
2.5.2.ii	Geothermal	-	0	0
2.5.3.ii	Hydroelectric	-	234,869	139,780
2.5.4.ii	Solar	-	11,825	24,183
2.5.5.ii	Wind	-	9,055,993	8,743,573
2.6.ii	Other	-	0	0

American Electric Power

Ref. No.	Portfolio	Baseline Year		
		2000	2020	2021
3	Investing in the Future: Capital Expenditures, Energy Efficiency (EE) & Smart Meters			
3.1	Total Annual Capital Expenditures (Nominal Dollars)	–	\$5,893,000,000	\$7,567,000,000
3.2	Incremental Annual Electricity Savings from EE Measures (MWh)	–	1,148,334	406,737
3.3	Incremental Annual Investment in Electric EE Programs (Nominal Dollars)	–	\$150,299,080	\$95,681,983
3.4	Percent of Total Electric Customers with Smart Meters (At End of Year)	–	60%	63%
4	Retail Electric Customer Count (At End of Year)	–	5,507,770	5,543,467
4.1	Commercial	–	721,900	732,211
4.2	Industrial	–	46,576	45,741
4.3	Residential	–	4,709,111	4,735,221
4.4	Other	–	30,183	30,294

American Electric Power

Ref. No.	Emissions	Baseline Year		
		2000	2020	2021
5	GHG Emissions: Carbon Dioxide (CO₂) & Carbon Dioxide Equivalent (CO₂e) The alternatives available below are intended to provide flexibility in reporting GHG emissions, and should be used to the extent appropriate for each company.			
5.1	Owned Generation^{1,2}			
5.1.1	Carbon Dioxide (CO₂)			
5.1.1.1	Total Owned Generation CO ₂ Emissions (MT)	167,100,561	44,495,585	50,991,159
5.1.1.2	Total Owned Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.848	0.582	0.618
5.1.2	Carbon Dioxide Equivalent (CO₂e)			
5.1.2.1	Total Owned Generation CO ₂ e Emissions (MT)	168,470,786	44,902,836	51,554,092
5.1.2.2	Total Owned Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.855	0.587	0.624

¹ Generation and emissions are adjusted for equity ownership share to reflect the percentage of output owned by reporting entity.

² As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subparts C and D).

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

American Electric Power

Ref. No.	Emissions	Baseline Year		
		2000	2020	2021
5.2	Purchased Power^{3,4}			
5.2.1	Carbon Dioxide (CO₂)			
5.2.1.1	Total Purchased Generation CO ₂ Emissions (MT)	0	6,398,498	5,646,927
5.2.1.2	Total Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0	0.354	0.344
5.2.2	Carbon Dioxide Equivalent (CO₂e)			
5.2.2.1	Total Purchased Generation CO ₂ e Emissions (MT)	0	6,440,084	5,693,567
5.2.2.2	Total Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0	0.356	0.347
5.3	Owned Generation + Purchased Power			
5.3.1	Carbon Dioxide (CO₂)			
5.3.1.1	Total Owned + Purchased Generation CO ₂ Emissions (MT)	167,100,56	50,894,083	56,638,086
5.3.1.2	Total Owned + Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.848	0.538	0.572
5.3.2	Carbon Dioxide Equivalent (CO₂e)			
5.3.2.1	Total Owned + Purchased Generation CO ₂ e Emissions (MT)	168,470,786	51,342,920	57,247,659
5.3.2.2	Total Owned + Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.855	0.543	0.578

³ Purchased power emissions have been calculated using the most relevant and accurate method:

- Direct emissions data as reported to EPA for direct purchases, such as PPAs
- E-Grid Emission Factors used

⁴ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart DD).
Left blank if not required to report.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

American Electric Power

Ref. No.	Emissions	Baseline Year		
		2000	2020	2021
5.4	Non-Generation CO₂e Emissions of Sulfur Hexafluoride (SF₆)			
5.4.1	Total CO ₂ e Emissions of SF ₆ (MT) ^{5,6}	123,140	498,826	399,391
5.4.2	Leak Rate of CO ₂ e Emissions of SF ₆ (MT/Net MWh) ⁶	0	0.006524	0.004837
6	Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)			
6.1	Generation Basis for Calculation ⁷	Total	Total	Total
6.2	Nitrogen Oxide (NO_x)			
6.2.1	Total NO _x Emissions (MT)	417,826	28,112	29,929
6.2.2	Total NO _x Emissions Intensity (MT/Net MWh)	0.002122	0.000368	0.000362
6.3	Sulfur Dioxide (SO₂)			
6.3.1	Total SO ₂ Emissions (MT)	929,796	32,138	36,761
6.3.2	Total SO ₂ Emissions Intensity (MT/Net MWh)	0.004721	0.000420	0.000445
6.4	Mercury (Hg)			
6.4.1	Total Hg Emissions (kg)	4,289.0	96.5	106.0
6.4.2	Total Hg Emissions Intensity (kg/Net MWh)	0.000022	0.000001	0.000001

⁵ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart W).
If not required to report, leave blank.

⁶ 2020 SF₆ emissions were restated in the 2022 reporting year due to an inventory calculation correction.

⁷ Owned and purchased generation.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

American Electric Power

Ref. No.	Resources	Baseline Year		
		2000	2020	2021
7	Human Resources			
7.1	Total Number of Employees	19,998	16,864	16,688
7.2	Percentage of Women in Total Workforce	-	20%	20%
7.3	Percentage of Minorities in Total Workforce	-	19%	19%
7.4	Total Number on Board of Directors/Trustees	11	12	12
7.5	Percentage of Women on Board of Directors/Trustees	-	33.33%	33.33%
7.6	Percentage of Minorities on Board of Directors/Trustees	-	25%	25%
7.7	Employee Safety Metrics			
7.7.1	Recordable Incident Rate	2.35	0.576	0.648
7.7.2	Lost-Time Case Rate	0.60	0.245	0.329
7.7.3	Days Away, Restricted, and Transfer (DART) Rate	0.96	0.310	0.430
7.7.4	Work-Related Fatalities	1	0	0

American Electric Power

Ref. No.	Resources	Baseline Year		
		2000	2020	2021
8	Fresh Water Resources			
8.1	Water Withdrawals – Consumptive (Millions of Gallons)	–	55,840	58,702
8.2	Water Withdrawals – Non-Consumptive (Millions of Gallons)	–	1,471,962	1,560,629
8.3	Water Withdrawals – Consumptive Rate (Millions of Gallons/Net MWh)	–	0.0005907	0.0005930
8.4	Water Withdrawals – Non-Consumptive Rate (Millions of Gallons/Net MWh)	–	0.0155715	0.0157650
9	Waste Products			
9.1	Amount of Hazardous Waste Manifested for Disposal (Metric Ton)	–	19.40	237
9.2	Percent of Coal Combustion Products Beneficially Used	–	35%	31%

Appalachian Power

Ref. No.	Portfolio	2020	2021
1	Owned Nameplate Generation Capacity at End of Year (MW)	6,629	6,681
1.1	Coal	4,250	4,250
1.2	Natural Gas	1,594	1,646
1.3	Nuclear	0	0
1.4	Petroleum	0	0
1.5	Total Renewable Energy Resources	785	785
1.5.1	Biomass/Biogas	0	0
1.5.2	Geothermal	0	0
1.5.3	Hydroelectric	785	785
1.5.4	Solar	0	0
1.5.5	Wind	0	0
1.6	Other	0	0

Appalachian Power

Ref. No.	Portfolio	2020	2021
2	Net Generation for the Data Year (MWh)	24,756,215	27,301,130
2.1	Coal	17,320,245	20,786,041
2.2	Natural Gas	4,996,751	4,558,792
2.3	Nuclear	0	0
2.4	Petroleum	0	0
2.5	Total Renewable Energy Resources	2,439,219	1,956,297
2.5.1	Biomass/Biogas	0	0
2.5.2	Geothermal	0	0
2.5.3	Hydroelectric	1,138,117	708,195
2.5.4	Solar	0	11,018
2.5.5	Wind	1,301,102	1,237,084
2.6	Other	0	0

Appalachian Power

Ref. No.	Portfolio	2020	2021
2.i	Owned Net Generation for the Data Year (MWh)	21,628,098	24,271,076
2.1.i	Coal	15,728,099	19,143,869
2.2.i	Natural Gas	4,996,751	4,558,792
2.3.i	Nuclear	0	0
2.4.i	Petroleum	0	0
2.5.i	Total Renewable Energy Resources	903,248	568,415
2.5.1.i	Biomass/Biogas	0	0
2.5.2.i	Geothermal	0	0
2.5.3.i	Hydroelectric	903,248	568,415
2.5.4.i	Solar	0	0
2.5.5.i	Wind	0	0
2.6.i	Other	0	0

Appalachian Power

Ref. No.	Portfolio	2020	2021
2.ii	Purchased Net Generation for the Data Year (MWh)	3,128,117	3,030,054
2.1.ii	Coal	1,592,146	1,642,172
2.2.ii	Natural Gas	0	0
2.3.ii	Nuclear	0	0
2.4.ii	Petroleum	0	0
2.5.ii	Total Renewable Energy Resources	1,535,971	1,387,882
2.5.1.ii	Biomass/Biogas	0	0
2.5.2.ii	Geothermal	0	0
2.5.3.ii	Hydroelectric	234,869	139,780
2.5.4.ii	Solar	0	11,018
2.5.5.ii	Wind	1,301,102	1,237,084
2.6.ii	Other	0	0

Appalachian Power

Ref. No.	Emissions	2020	2021
5	GHG Emissions: Carbon Dioxide (CO₂) & Carbon Dioxide Equivalent (CO₂e) The alternatives available below are intended to provide flexibility in reporting GHG emissions, and should be used to the extent appropriate for each company.		
5.1	Owned Generation^{1,2}		
5.1.1	Carbon Dioxide (CO₂)		
5.1.1.1	Total Owned Generation CO ₂ Emissions (MT)	17,100,611	19,935,285
5.1.1.2	Total Owned Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.791	0.821
5.1.2	Carbon Dioxide Equivalent (CO₂e)		
5.1.2.1	Total Owned Generation CO ₂ e Emissions (MT)	17,224,888	20,283,362
5.1.2.2	Total Owned Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.796	0.836

¹ Generation and emissions are adjusted for equity ownership share to reflect the percentage of output owned by reporting entity.

² As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subparts C and D).

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Appalachian Power

Ref. No.	Emissions	2020	2021
5.2	Purchased Power^{3,4}		
5.2.1	Carbon Dioxide (CO₂)		
5.2.1.1	Total Purchased Generation CO ₂ Emissions (MT)	1,467,531	1,621,557
5.2.1.2	Total Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.469	0.535
5.2.2	Carbon Dioxide Equivalent (CO₂e)		
5.2.2.1	Total Purchased Generation CO ₂ e Emissions (MT)	1,479,259	1,634,513
5.2.2.2	Total Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.473	0.539
5.3	Owned Generation + Purchased Power		
5.3.1	Carbon Dioxide (CO₂)		
5.3.1.1	Total Owned + Purchased Generation CO ₂ Emissions (MT)	18,568,142	21,556,842
5.3.1.2	Total Owned + Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.750	0.790
5.3.2	Carbon Dioxide Equivalent (CO₂e)		
5.3.2.1	Total Owned + Purchased Generation CO ₂ e Emissions (MT)	18,704,147	21,917,875
5.3.2.2	Total Owned + Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.756	0.803

³ Purchased power emissions have been calculated using the most relevant and accurate method:

- Direct emissions data as reported to EPA for direct purchases, such as PPAs
- E-Grid Emission Factors used

⁴ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart DD).
Left blank if not required to report.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Appalachian Power

Ref. No.	Emissions	2020	2021
5.4	Non-Generation CO₂e Emissions of Sulfur Hexafluoride (SF₆)		
5.4.1	Total CO ₂ e Emissions of SF ₆ (MT) ^{5,6}	107,737	86,789
5.4.2	Leak Rate of CO ₂ e Emissions of SF ₆ (MT/Net MWh) ⁶	0.004981	0.003576
6	Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)		
6.1	Generation Basis for Calculation ⁷	Total	Total
6.2	Nitrogen Oxide (NO_x)		
6.2.1	Total NO _x Emissions (MT)	8,427	8,783
6.2.2	Total NO _x Emissions Intensity (MT/Net MWh)	0.000340	0.000322
6.3	Sulfur Dioxide (SO₂)		
6.3.1	Total SO ₂ Emissions (MT)	7,129	9,512
6.3.2	Total SO ₂ Emissions Intensity (MT/Net MWh)	0.000288	0.000348
6.4	Mercury (Hg)		
6.4.1	Total Hg Emissions (kg)	30.8	31.1
6.4.2	Total Hg Emissions Intensity (kg/Net MWh)	0.000001	0.000001

⁵ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart W).

If not required to report, leave blank.

⁶ 2020 SF₆ emissions were restated in the 2022 reporting year due to an inventory calculation correction.

⁷ Owned and purchased generation.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Kentucky Power

Ref. No.	Portfolio	2020	2021
1	Owned Nameplate Generation Capacity at End of Year (MW)	1,453	1,468
1.1	Coal	1,173	1,173
1.2	Natural Gas	280	295
1.3	Nuclear	0	0
1.4	Petroleum	0	0
1.5	Total Renewable Energy Resources	0	0
1.5.1	Biomass/Biogas	0	0
1.5.2	Geothermal	0	0
1.5.3	Hydroelectric	0	0
1.5.4	Solar	0	0
1.5.5	Wind	0	0
1.6	Other	0	0

Kentucky Power

Ref. No.	Portfolio	2020	2021
2	Net Generation for the Data Year (MWh)	3,324,794	3,655,418
2.1	Coal	2,412,157	3,104,878
2.2	Natural Gas	912,637	550,540
2.3	Nuclear	0	0
2.4	Petroleum	0	0
2.5	Total Renewable Energy Resources	0	0
2.5.1	Biomass/Biogas	0	0
2.5.2	Geothermal	0	0
2.5.3	Hydroelectric	0	0
2.5.4	Solar	0	0
2.5.5	Wind	0	0
2.6	Other	0	0

Kentucky Power

Ref. No.	Portfolio	2020	2021
2.i	Owned Net Generation for the Data Year (MWh)	3,324,794	3,655,418
2.1.i	Coal	2,412,157	3,104,878
2.2.i	Natural Gas	912,637	550,540
2.3.i	Nuclear	0	0
2.4.i	Petroleum	0	0
2.5.i	Total Renewable Energy Resources	0	0
2.5.1.i	Biomass/Biogas	0	0
2.5.2.i	Geothermal	0	0
2.5.3.i	Hydroelectric	0	0
2.5.4.i	Solar	0	0
2.5.5.i	Wind	0	0
2.6.i	Other	0	0

Kentucky Power

Ref. No.	Portfolio	2020	2021
2.ii	Purchased Net Generation for the Data Year (MWh)	0	0
2.1.ii	Coal	0	0
2.2.ii	Natural Gas	0	0
2.3.ii	Nuclear	0	0
2.4.ii	Petroleum	0	0
2.5.ii	Total Renewable Energy Resources	0	0
2.5.1.ii	Biomass/Biogas	0	0
2.5.2.ii	Geothermal	0	0
2.5.3.ii	Hydroelectric	0	0
2.5.4.ii	Solar	0	0
2.5.5.ii	Wind	0	0
2.6.ii	Other	0	0

Kentucky Power

Ref. No.	Emissions	2020	2021
5	GHG Emissions: Carbon Dioxide (CO₂) & Carbon Dioxide Equivalent (CO₂e) The alternatives available below are intended to provide flexibility in reporting GHG emissions, and should be used to the extent appropriate for each company.		
5.1	Owned Generation^{1,2}		
5.1.1	Carbon Dioxide (CO₂)		
5.1.1.1	Total Owned Generation CO ₂ Emissions (MT)	2,911,207	3,399,868
5.1.1.2	Total Owned Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.876	0.930
5.1.2	Carbon Dioxide Equivalent (CO₂e)		
5.1.2.1	Total Owned Generation CO ₂ e Emissions (MT)	2,931,114	3,424,938
5.1.2.2	Total Owned Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.882	0.937

¹ Generation and emissions are adjusted for equity ownership share to reflect the percentage of output owned by reporting entity.

² As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subparts C and D).

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Kentucky Power

Ref. No.	Emissions	2020	2021
5.2	Purchased Power^{3,4}		
5.2.1	Carbon Dioxide (CO₂)		
5.2.1.1	Total Purchased Generation CO ₂ Emissions (MT)	0	0
5.2.1.2	Total Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0	0
5.2.2	Carbon Dioxide Equivalent (CO₂e)		
5.2.2.1	Total Purchased Generation CO ₂ e Emissions (MT)	0	0
5.2.2.2	Total Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0	0
5.3	Owned Generation + Purchased Power		
5.3.1	Carbon Dioxide (CO₂)		
5.3.1.1	Total Owned + Purchased Generation CO ₂ Emissions (MT)	2,911,207	3,399,868
5.3.1.2	Total Owned + Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.876	0.930
5.3.2	Carbon Dioxide Equivalent (CO₂e)		
5.3.2.1	Total Owned + Purchased Generation CO ₂ e Emissions (MT)	2,931,114	3,424,938
5.3.2.2	Total Owned + Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.882	0.937

³ Purchased power emissions have been calculated using the most relevant and accurate method:

- Direct emissions data as reported to EPA for direct purchases, such as PPAs
- E-Grid Emission Factors used

⁴ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart DD). Left blank if not required to report.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Kentucky Power

Ref. No.	Emissions	2020	2021
5.4	Non-Generation CO₂e Emissions of Sulfur Hexafluoride (SF₆)		
5.4.1	Total CO ₂ e Emissions of SF ₆ (MT) ^{5,6}	22,902	18,367
5.4.2	Leak Rate of CO ₂ e Emissions of SF ₆ (MT/Net MWh) ⁶	0.006888	0.005025
6	Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)		
6.1	Generation Basis for Calculation ⁷	Total	Total
6.2	Nitrogen Oxide (NO_x)		
6.2.1	Total NO _x Emissions (MT)	1,625	1,519
6.2.2	Total NO _x Emissions Intensity (MT/Net MWh)	0.000489	0.000415
6.3	Sulfur Dioxide (SO₂)		
6.3.1	Total SO ₂ Emissions (MT)	1,318	1,269
6.3.2	Total SO ₂ Emissions Intensity (MT/Net MWh)	0.000396	0.000347
6.4	Mercury (Hg)		
6.4.1	Total Hg Emissions (kg)	4.5	6.6
6.4.2	Total Hg Emissions Intensity (kg/Net MWh)	0.000001	0.000002

⁵ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart W).

If not required to report, leave blank.

⁶ 2020 SF₆ emissions were restated in the 2022 reporting year due to an inventory calculation correction.

⁷ Owned and purchased generation.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Indiana Michigan Power

Ref. No.	Portfolio	2020	2021
1	Owned Nameplate Generation Capacity at End of Year (MW)	4,551	4,579
1.1	Coal	2,227	2,227
1.2	Natural Gas	0	0
1.3	Nuclear	2,288	2,296
1.4	Petroleum	0	0
1.5	Total Renewable Energy Resources	36	56
1.5.1	Biomass/Biogas	0	0
1.5.2	Geothermal	0	0
1.5.3	Hydroelectric	20	20
1.5.4	Solar	16	36
1.5.5	Wind	0	0
1.6	Other	0	0

Indiana Michigan Power

Ref. No.	Portfolio	2020	2021
2	Net Generation for the Data Year (MWh)	23,886,073	24,125,573
2.1	Coal	4,229,799	4,902,926
2.2	Natural Gas	0	0
2.3	Nuclear	18,268,937	17,960,716
2.4	Petroleum	0	0
2.5	Total Renewable Energy Resources	1,387,337	1,261,931
2.5.1	Biomass/Biogas	0	0
2.5.2	Geothermal	0	0
2.5.3	Hydroelectric	93,393	83,918
2.5.4	Solar	19,355	48,550
2.5.5	Wind	1,274,589	1,129,463
2.6	Other	0	0

Indiana Michigan Power

Ref. No.	Portfolio	2020	2021
2.i	Owned Net Generation for the Data Year (MWh)	21,815,411	22,175,024
2.1.i	Coal	3,433,726	4,081,840
2.2.i	Natural Gas	0	0
2.3.i	Nuclear	18,268,937	17,960,716
2.4.i	Petroleum	0	0
2.5.i	Total Renewable Energy Resources	112,748	132,468
2.5.1.i	Biomass/Biogas	0	0
2.5.2.i	Geothermal	0	0
2.5.3.i	Hydroelectric	93,393	83,918
2.5.4.i	Solar	19,355	48,550
2.5.5.i	Wind	0	0
2.6.i	Other	0	0

Indiana Michigan Power

Ref. No.	Portfolio	2020	2021
2.ii	Purchased Net Generation for the Data Year (MWh)	2,070,662	1,950,549
2.1.ii	Coal	796,073	821,086
2.2.ii	Natural Gas	0	0
2.3.ii	Nuclear	0	0
2.4.ii	Petroleum	0	0
2.5.ii	Total Renewable Energy Resources	1,274,589	1,129,463
2.5.1.ii	Biomass/Biogas	0	0
2.5.2.ii	Geothermal	0	0
2.5.3.ii	Hydroelectric	0	0
2.5.4.ii	Solar	0	0
2.5.5.ii	Wind	1,274,589	1,129,463
2.6.ii	Other	0	0

Indiana Michigan Power

Ref. No.	Emissions	2020	2021
5	GHG Emissions: Carbon Dioxide (CO₂) & Carbon Dioxide Equivalent (CO₂e) The alternatives available below are intended to provide flexibility in reporting GHG emissions, and should be used to the extent appropriate for each company.		
5.1	Owned Generation^{1,2}		
5.1.1	Carbon Dioxide (CO₂)		
5.1.1.1	Total Owned Generation CO ₂ Emissions (MT)	3,409,865	4,337,693
5.1.1.2	Total Owned Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.156	0.196
5.1.2	Carbon Dioxide Equivalent (CO₂e)		
5.1.2.1	Total Owned Generation CO ₂ e Emissions (MT)	3,436,683	4,371,884
5.1.2.2	Total Owned Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.158	0.197

¹ Generation and emissions are adjusted for equity ownership share to reflect the percentage of output owned by reporting entity.

² As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subparts C and D).

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Indiana Michigan Power

Ref. No.	Emissions	2020	2021
5.2	Purchased Power^{3,4}		
5.2.1	Carbon Dioxide (CO₂)		
5.2.1.1	Total Purchased Generation CO ₂ Emissions (MT)	733,765	810,779
5.2.1.2	Total Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.354	0.416
5.2.2	Carbon Dioxide Equivalent (CO₂e)		
5.2.2.1	Total Purchased Generation CO ₂ e Emissions (MT)	739,630	817,257
5.2.2.2	Total Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.357	0.419
5.3	Owned Generation + Purchased Power		
5.3.1	Carbon Dioxide (CO₂)		
5.3.1.1	Total Owned + Purchased Generation CO ₂ Emissions (MT)	4,143,630	5,148,472
5.3.1.2	Total Owned + Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.173	0.213
5.3.2	Carbon Dioxide Equivalent (CO₂e)		
5.3.2.1	Total Owned + Purchased Generation CO ₂ e Emissions (MT)	4,176,313	5,189,141
5.3.2.2	Total Owned + Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.175	0.215

³ Purchased power emissions have been calculated using the most relevant and accurate method:

- Direct emissions data as reported to EPA for direct purchases, such as PPAs
- E-Grid Emission Factors used

⁴ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart DD). Left blank if not required to report.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Indiana Michigan Power

Ref. No.	Emissions	2020	2021
5.4	Non-Generation CO₂e Emissions of Sulfur Hexafluoride (SF₆)		
5.4.1	Total CO ₂ e Emissions of SF ₆ (MT) ^{5,6}	84,492	66,357
5.4.2	Leak Rate of CO ₂ e Emissions of SF ₆ (MT/Net MWh) ⁶	0.003873	0.002992
6	Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)		
6.1	Generation Basis for Calculation ⁷	Total	Total
6.2	Nitrogen Oxide (NO_x)		
6.2.1	Total NO _x Emissions (MT)	2,070	1,953
6.2.2	Total NO _x Emissions Intensity (MT/Net MWh)	0.000087	0.000081
6.3	Sulfur Dioxide (SO₂)		
6.3.1	Total SO ₂ Emissions (MT)	5,672	2,646
6.3.2	Total SO ₂ Emissions Intensity (MT/Net MWh)	0.000237	0.000110
6.4	Mercury (Hg)		
6.4.1	Total Hg Emissions (kg)	4.7	7.6
6.4.2	Total Hg Emissions Intensity (kg/Net MWh)	0.000000	0.000000

⁵ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart W).
If not required to report, leave blank.

⁶ 2020 SF₆ emissions were restated in the 2022 reporting year due to an inventory calculation correction.

⁷ Owned and purchased generation.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Wheeling Power

Ref. No.	Portfolio	2020	2021
1	Owned Nameplate Generation Capacity at End of Year (MW)	780	780
1.1	Coal	780	780
1.2	Natural Gas	0	0
1.3	Nuclear	0	0
1.4	Petroleum	0	0
1.5	Total Renewable Energy Resources	0	0
1.5.1	Biomass/Biogas	0	0
1.5.2	Geothermal	0	0
1.5.3	Hydroelectric	0	0
1.5.4	Solar	0	0
1.5.5	Wind	0	0
1.6	Other	0	0

Wheeling Power

Ref. No.	Portfolio	2020	2021
2	Net Generation for the Data Year (MWh)	1,806,206	2,384,122
2.1	Coal	1,806,206	2,384,122
2.2	Natural Gas	0	0
2.3	Nuclear	0	0
2.4	Petroleum	0	0
2.5	Total Renewable Energy Resources	0	0
2.5.1	Biomass/Biogas	0	0
2.5.2	Geothermal	0	0
2.5.3	Hydroelectric	0	0
2.5.4	Solar	0	0
2.5.5	Wind	0	0
2.6	Other	0	0

Wheeling Power

Ref. No.	Portfolio	2020	2021
2.i	Owned Net Generation for the Data Year (MWh)	1,806,206	2,384,122
2.1.i	Coal	1,806,206	2,384,122
2.2.i	Natural Gas	0	0
2.3.i	Nuclear	0	0
2.4.i	Petroleum	0	0
2.5.i	Total Renewable Energy Resources	0	0
2.5.1.i	Biomass/Biogas	0	0
2.5.2.i	Geothermal	0	0
2.5.3.i	Hydroelectric	0	0
2.5.4.i	Solar	0	0
2.5.5.i	Wind	0	0
2.6.i	Other	0	0

Wheeling Power

Ref. No.	Portfolio	2020	2021
2.ii	Purchased Net Generation for the Data Year (MWh)	0	0
2.1.ii	Coal	0	0
2.2.ii	Natural Gas	0	0
2.3.ii	Nuclear	0	0
2.4.ii	Petroleum	0	0
2.5.ii	Total Renewable Energy Resources	0	0
2.5.1.ii	Biomass/Biogas	0	0
2.5.2.ii	Geothermal	0	0
2.5.3.ii	Hydroelectric	0	0
2.5.4.ii	Solar	0	0
2.5.5.ii	Wind	0	0
2.6.ii	Other	0	0

Wheeling Power

Ref. No.	Emissions	2020	2021
5	GHG Emissions: Carbon Dioxide (CO₂) & Carbon Dioxide Equivalent (CO₂e) The alternatives available below are intended to provide flexibility in reporting GHG emissions, and should be used to the extent appropriate for each company.		
5.1	Owned Generation^{1,2}		
5.1.1	Carbon Dioxide (CO₂)		
5.1.1.1	Total Owned Generation CO ₂ Emissions (MT)	1,820,004	2,327,533
5.1.1.2	Total Owned Generation CO ₂ Emissions Intensity (MT/Net MWh)	1.008	0.976
5.1.2	Carbon Dioxide Equivalent (CO₂e)		
5.1.2.1	Total Owned Generation CO ₂ e Emissions (MT)	1,834,679	2,346,258
5.1.2.2	Total Owned Generation CO ₂ e Emissions Intensity (MT/Net MWh)	1.016	0.984

¹ Generation and emissions are adjusted for equity ownership share to reflect the percentage of output owned by reporting entity.

² As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subparts C and D).

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Wheeling Power

Ref. No.	Emissions	2020	2021
5.2	Purchased Power^{3,4}		
5.2.1	Carbon Dioxide (CO₂)		
5.2.1.1	Total Purchased Generation CO ₂ Emissions (MT)	0	0
5.2.1.2	Total Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0	0
5.2.2	Carbon Dioxide Equivalent (CO₂e)		
5.2.2.1	Total Purchased Generation CO ₂ e Emissions (MT)	0	0
5.2.2.2	Total Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0	0
5.3	Owned Generation + Purchased Power		
5.3.1	Carbon Dioxide (CO₂)		
5.3.1.1	Total Owned + Purchased Generation CO ₂ Emissions (MT)	1,820,004	2,327,533
5.3.1.2	Total Owned + Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	1.008	0.976
5.3.2	Carbon Dioxide Equivalent (CO₂e)		
5.3.2.1	Total Owned + Purchased Generation CO ₂ e Emissions (MT)	1,834,679	2,346,258
5.3.2.2	Total Owned + Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	1.016	0.984

³ Purchased power emissions have been calculated using the most relevant and accurate method:

- Direct emissions data as reported to EPA for direct purchases, such as PPAs
- E-Grid Emission Factors used

⁴ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart DD). Left blank if not required to report.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:

CO ₂ = 1	N ₂ O = 298
CH ₄ = 25	SF ₆ = 22,800

Wheeling Power

Ref. No.	Emissions	2020	2021
5.4	Non-Generation CO₂e Emissions of Sulfur Hexafluoride (SF₆)		
5.4.1	Total CO ₂ e Emissions of SF ₆ (MT) ^{5,6}	5,532	4,334
5.4.2	Leak Rate of CO ₂ e Emissions of SF ₆ (MT/Net MWh) ⁶	0.003063	0.001818
6	Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)		
6.1	Generation Basis for Calculation ⁷	Total	Total
6.2	Nitrogen Oxide (NO_x)		
6.2.1	Total NO _x Emissions (MT)	684	867
6.2.2	Total NO _x Emissions Intensity (MT/Net MWh)	0.000379	0.000364
6.3	Sulfur Dioxide (SO₂)		
6.3.1	Total SO ₂ Emissions (MT)	369	873
6.3.2	Total SO ₂ Emissions Intensity (MT/Net MWh)	0.000204	0.000366
6.4	Mercury (Hg)		
6.4.1	Total Hg Emissions (kg)	3.7	5.2
6.4.2	Total Hg Emissions Intensity (kg/Net MWh)	0.000002	0.000002

⁵ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart W).
If not required to report, leave blank.

⁶ 2020 SF₆ emissions were restated in the 2022 reporting year due to an inventory calculation correction.

⁷ Owned and purchased generation.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Public Service Company of Oklahoma

Ref. No.	Portfolio	2020	2021
1	Owned Nameplate Generation Capacity at End of Year (MW)	3,833	3,931
1.1	Coal	574	465
1.2	Natural Gas	3,259	3,244
1.3	Nuclear	0	0
1.4	Petroleum	0	0
1.5	Total Renewable Energy Resources	0	222
1.5.1	Biomass/Biogas	0	0
1.5.2	Geothermal	0	0
1.5.3	Hydroelectric	0	0
1.5.4	Solar	0	0
1.5.5	Wind	0	222
1.6	Other	0	0

Public Service Company of Oklahoma

Ref. No.	Portfolio	2020	2021
2	Net Generation for the Data Year (MWh)	13,457,164	13,234,076
2.1	Coal	1,317,989	2,327,362
2.2	Natural Gas	8,156,916	6,734,261
2.3	Nuclear	0	0
2.4	Petroleum	0	0
2.5	Total Renewable Energy Resources	3,982,259	4,172,453
2.5.1	Biomass/Biogas	0	0
2.5.2	Geothermal	0	0
2.5.3	Hydroelectric	0	0
2.5.4	Solar	0	0
2.5.5	Wind	3,982,259	4,172,453
2.6	Other	0	0

Public Service Company of Oklahoma

Ref. No.	Portfolio	2020	2021
2.i	Owned Net Generation for the Data Year (MWh)	5,119,173	6,362,646
2.1.i	Coal	1,317,989	2,327,362
2.2.i	Natural Gas	3,801,184	3,783,419
2.3.i	Nuclear	0	0
2.4.i	Petroleum	0	0
2.5.i	Total Renewable Energy Resources	0	251,865
2.5.1.i	Biomass/Biogas	0	0
2.5.2.i	Geothermal	0	0
2.5.3.i	Hydroelectric	0	0
2.5.4.i	Solar	0	0
2.5.5.i	Wind	0	251,865
2.6.i	Other	0	0

Public Service Company of Oklahoma

Ref. No.	Portfolio	2020	2021
2.ii	Purchased Net Generation for the Data Year (MWh)	8,337,991	6,871,430
2.1.ii	Coal	0	0
2.2.ii	Natural Gas	4,355,732	2,950,842
2.3.ii	Nuclear	0	0
2.4.ii	Petroleum	0	0
2.5.ii	Total Renewable Energy Resources	3,982,259	3,920,588
2.5.1.ii	Biomass/Biogas	0	0
2.5.2.ii	Geothermal	0	0
2.5.3.ii	Hydroelectric	0	0
2.5.4.ii	Solar	0	0
2.5.5.ii	Wind	3,982,259	3,920,588
2.6.ii	Other	0	0

Public Service Company of Oklahoma

Ref. No.	Emissions	2020	2021
5	GHG Emissions: Carbon Dioxide (CO₂) & Carbon Dioxide Equivalent (CO₂e) The alternatives available below are intended to provide flexibility in reporting GHG emissions, and should be used to the extent appropriate for each company.		
5.1	Owned Generation^{1,2}		
5.1.1	Carbon Dioxide (CO₂)		
5.1.1.1	Total Owned Generation CO ₂ Emissions (MT)	3,500,782	4,630,135
5.1.1.2	Total Owned Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.684	0.728
5.1.2	Carbon Dioxide Equivalent (CO₂e)		
5.1.2.1	Total Owned Generation CO ₂ e Emissions (MT)	3,514,429	4,652,410
5.1.2.2	Total Owned Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.687	0.731

¹ Generation and emissions are adjusted for equity ownership share to reflect the percentage of output owned by reporting entity.

² As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subparts C and D).

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Public Service Company of Oklahoma

Ref. No.	Emissions	2020	2021
5.2	Purchased Power^{3,4}		
5.2.1	Carbon Dioxide (CO₂)		
5.2.1.1	Total Purchased Generation CO ₂ Emissions (MT)	2,332,926	1,147,454
5.2.1.2	Total Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.280	0.167
5.2.2	Carbon Dioxide Equivalent (CO₂e)		
5.2.2.1	Total Purchased Generation CO ₂ e Emissions (MT)	2,342,020	1,158,134
5.2.2.2	Total Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.281	0.169
5.3	Owned Generation + Purchased Power		
5.3.1	Carbon Dioxide (CO₂)		
5.3.1.1	Total Owned + Purchased Generation CO ₂ Emissions (MT)	5,833,708	5,777,589
5.3.1.2	Total Owned + Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.434	0.437
5.3.2	Carbon Dioxide Equivalent (CO₂e)		
5.3.2.1	Total Owned + Purchased Generation CO ₂ e Emissions (MT)	5,856,449	5,810,544
5.3.2.2	Total Owned + Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.435	0.439

³ Purchased power emissions have been calculated using the most relevant and accurate method:

- Direct emissions data as reported to EPA for direct purchases, such as PPAs
- E-Grid Emission Factors used

⁴ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart DD).
Left blank if not required to report.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Public Service Company of Oklahoma

Ref. No.	Emissions	2020	2021
5.4	Non-Generation CO₂e Emissions of Sulfur Hexafluoride (SF₆)		
5.4.1	Total CO ₂ e Emissions of SF ₆ (MT) ^{5,6}	53,067	41,591
5.4.2	Leak Rate of CO ₂ e Emissions of SF ₆ (MT/Net MWh) ⁶	0.010366	0.006537
6	Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)		
6.1	Generation Basis for Calculation ⁷	Total	Total
6.2	Nitrogen Oxide (NO_x)		
6.2.1	Total NO _x Emissions (MT)	3,179	3,846
6.2.2	Total NO _x Emissions Intensity (MT/Net MWh)	0.000236	0.000291
6.3	Sulfur Dioxide (SO₂)		
6.3.1	Total SO ₂ Emissions (MT)	2,184	4,150
6.3.2	Total SO ₂ Emissions Intensity (MT/Net MWh)	0.000162	0.000314
6.4	Mercury (Hg)		
6.4.1	Total Hg Emissions (kg)	2.4	4.1
6.4.2	Total Hg Emissions Intensity (kg/Net MWh)	0.000000	0.000000

⁵ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart W).
If not required to report, leave blank.

⁶ 2020 SF₆ emissions were restated in the 2022 reporting year due to an inventory calculation correction.

⁷ Owned and purchased generation.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Southwestern Electric Power Company

Ref. No.	Portfolio	2020	2021
1	Owned Nameplate Generation Capacity at End of Year (MW)	5,169	5,040
1.1	Coal	2,625	2,368
1.2	Natural Gas	2,544	2,408
1.3	Nuclear	0	0
1.4	Petroleum	0	0
1.5	Total Renewable Energy Resources	0	264
1.5.1	Biomass/Biogas	0	0
1.5.2	Geothermal	0	0
1.5.3	Hydroelectric	0	0
1.5.4	Solar	0	0
1.5.5	Wind	0	264
1.6	Other	0	0

Southwestern Electric Power Company

Ref. No.	Portfolio	2020	2021
2	Net Generation for the Data Year (MWh)	15,049,398	17,100,625
2.1	Coal	8,917,927	10,949,398
2.2	Natural Gas	4,464,159	4,166,052
2.3	Nuclear	0	0
2.4	Petroleum	0	0
2.5	Total Renewable Energy Resources	1,667,312	1,985,175
2.5.1	Biomass/Biogas	0	0
2.5.2	Geothermal	0	0
2.5.3	Hydroelectric	0	0
2.5.4	Solar	0	0
2.5.5	Wind	1,667,312	1,985,175
2.6	Other	0	0

Southwestern Electric Power Company

Ref. No.	Portfolio	2020	2021
2.i	Owned Net Generation for the Data Year (MWh)	13,382,086	15,398,934
2.1.i	Coal	8,917,927	10,949,398
2.2.i	Natural Gas	4,464,159	4,147,852
2.3.i	Nuclear	0	0
2.4.i	Petroleum	0	0
2.5.i	Total Renewable Energy Resources	0	301,684
2.5.1.i	Biomass/Biogas	0	0
2.5.2.i	Geothermal	0	0
2.5.3.i	Hydroelectric	0	0
2.5.4.i	Solar	0	0
2.5.5.i	Wind	0	301,684
2.6.i	Other	0	0

Southwestern Electric Power Company

Ref. No.	Portfolio	2020	2021
2.ii	Purchased Net Generation for the Data Year (MWh)	1,667,312	1,701,691
2.1.ii	Coal	0	0
2.2.ii	Natural Gas	0	18,200
2.3.ii	Nuclear	0	0
2.4.ii	Petroleum	0	0
2.5.ii	Total Renewable Energy Resources	1,667,312	1,683,491
2.5.1.ii	Biomass/Biogas	0	0
2.5.2.ii	Geothermal	0	0
2.5.3.ii	Hydroelectric	0	0
2.5.4.ii	Solar	0	0
2.5.5.ii	Wind	1,667,312	1,683,491
2.6.ii	Other	0	0

Southwestern Electric Power Company

Ref. No.	Emissions	2020	2021
5	GHG Emissions: Carbon Dioxide (CO₂) & Carbon Dioxide Equivalent (CO₂e) The alternatives available below are intended to provide flexibility in reporting GHG emissions, and should be used to the extent appropriate for each company.		
5.1	Owned Generation^{1,2}		
5.1.1	Carbon Dioxide (CO₂)		
5.1.1.1	Total Owned Generation CO ₂ Emissions (MT)	11,027,434	13,463,512
5.1.1.2	Total Owned Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.824	0.874
5.1.2	Carbon Dioxide Equivalent (CO₂e)		
5.1.2.1	Total Owned Generation CO ₂ e Emissions (MT)	11,100,244	13,554,725
5.1.2.2	Total Owned Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.829	0.880

¹ Generation and emissions are adjusted for equity ownership share to reflect the percentage of output owned by reporting entity.

² As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subparts C and D).

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Southwestern Electric Power Company

Ref. No.	Emissions	2020	2021
5.2	Purchased Power^{3,4}		
5.2.1	Carbon Dioxide (CO₂)		
5.2.1.1	Total Purchased Generation CO ₂ Emissions (MT)	0	7,194
5.2.1.2	Total Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0	0.004
5.2.2	Carbon Dioxide Equivalent (CO₂e)		
5.2.2.1	Total Purchased Generation CO ₂ e Emissions (MT)	0	7,261
5.2.2.2	Total Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0	0.004
5.3	Owned Generation + Purchased Power		
5.3.1	Carbon Dioxide (CO₂)		
5.3.1.1	Total Owned + Purchased Generation CO ₂ Emissions (MT)	11,027,434	13,470,706
5.3.1.2	Total Owned + Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.733	0.788
5.3.2	Carbon Dioxide Equivalent (CO₂e)		
5.3.2.1	Total Owned + Purchased Generation CO ₂ e Emissions (MT)	11,100,244	13,561,986
5.3.2.2	Total Owned + Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.738	0.793

³ Purchased power emissions have been calculated using the most relevant and accurate method:

- Direct emissions data as reported to EPA for direct purchases, such as PPAs
- E-Grid Emission Factors used

⁴ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart DD).
Left blank if not required to report.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Southwestern Electric Power Company

Ref. No.	Emissions	2020	2021
5.4	Non-Generation CO₂e Emissions of Sulfur Hexafluoride (SF₆)		
5.4.1	Total CO ₂ e Emissions of SF ₆ (MT) ^{5,6}	74,311	60,002
5.4.2	Leak Rate of CO ₂ e Emissions of SF ₆ (MT/Net MWh) ⁶	0.005553	0.003896
6	Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)		
6.1	Generation Basis for Calculation ⁷	Total	Total
6.2	Nitrogen Oxide (NO_x)		
6.2.1	Total NO _x Emissions (MT)	7,486	10,312
6.2.2	Total NO _x Emissions Intensity (MT/Net MWh)	0.000497	0.000603
6.3	Sulfur Dioxide (SO₂)		
6.3.1	Total SO ₂ Emissions (MT)	10,646	14,037
6.3.2	Total SO ₂ Emissions Intensity (MT/Net MWh)	0.000707	0.000821
6.4	Mercury (Hg)		
6.4.1	Total Hg Emissions (kg)	32.4	44.0
6.4.2	Total Hg Emissions Intensity (kg/Net MWh)	0.000002	0.000003

⁵ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart W).

If not required to report, leave blank.

⁶ 2020 SF₆ emissions were restated in the 2022 reporting year due to an inventory calculation correction.

⁷ Owned and purchased generation.

MT = metric tons =tonne

1 lb = 453.59 grams

1 tonne = 1,000,000 grams

1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:

CO₂ = 1 N₂O = 298

CH₄ = 25 SF₆ = 22,800

Ohio Power Company

Ref. No.	Portfolio	2020	2021
1	Owned Nameplate Generation Capacity at End of Year (MW)	0	0
1.1	Coal	0	0
1.2	Natural Gas	0	0
1.3	Nuclear	0	0
1.4	Petroleum	0	0
1.5	Total Renewable Energy Resources	0	0
1.5.1	Biomass/Biogas	0	0
1.5.2	Geothermal	0	0
1.5.3	Hydroelectric	0	0
1.5.4	Solar	0	0
1.5.5	Wind	0	0
1.6	Other	0	0

Ohio Power Company

Ref. No.	Portfolio	2020	2021
2	Net Generation for the Data Year (MWh)	2,598,814	2,605,449
2.1	Coal	2,022,581	2,086,131
2.2	Natural Gas	0	0
2.3	Nuclear	0	0
2.4	Petroleum	0	0
2.5	Total Renewable Energy Resources	576,233	519,318
2.5.1	Biomass/Biogas	0	0
2.5.2	Geothermal	0	0
2.5.3	Hydroelectric	0	0
2.5.4	Solar	11,825	13,165
2.5.5	Wind	564,408	506,153
2.6	Other	0	0

Ohio Power Company

Ref. No.	Portfolio	2020	2021
2.i	Owned Net Generation for the Data Year (MWh)	0	0
2.1.i	Coal	0	0
2.2.i	Natural Gas	0	0
2.3.i	Nuclear	0	0
2.4.i	Petroleum	0	0
2.5.i	Total Renewable Energy Resources	0	0
2.5.1.i	Biomass/Biogas	0	0
2.5.2.i	Geothermal	0	0
2.5.3.i	Hydroelectric	0	0
2.5.4.i	Solar	0	0
2.5.5.i	Wind	0	0
2.6.i	Other	0	0

Ohio Power Company

Ref. No.	Portfolio	2020	2021
2.ii	Purchased Net Generation for the Data Year (MWh)	2,598,814	2,605,449
2.1.ii	Coal	2,022,581	2,086,131
2.2.ii	Natural Gas	0	0
2.3.ii	Nuclear	0	0
2.4.ii	Petroleum	0	0
2.5.ii	Total Renewable Energy Resources	576,233	519,318
2.5.1.ii	Biomass/Biogas	0	0
2.5.2.ii	Geothermal	0	0
2.5.3.ii	Hydroelectric	0	0
2.5.4.ii	Solar	11,825	13,165
2.5.5.ii	Wind	564,408	506,153
2.6.ii	Other	0	0

Ohio Power Company

Ref. No.	Emissions	2020	2021
5	GHG Emissions: Carbon Dioxide (CO₂) & Carbon Dioxide Equivalent (CO₂e) The alternatives available below are intended to provide flexibility in reporting GHG emissions, and should be used to the extent appropriate for each company.		
5.1	Owned Generation^{1,2}		
5.1.1	Carbon Dioxide (CO₂)		
5.1.1.1	Total Owned Generation CO ₂ Emissions (MT)	0	0
5.1.1.2	Total Owned Generation CO ₂ Emissions Intensity (MT/Net MWh)	0	0
5.1.2	Carbon Dioxide Equivalent (CO₂e)		
5.1.2.1	Total Owned Generation CO ₂ e Emissions (MT)	0	0
5.1.2.2	Total Owned Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0	0

¹ Generation and emissions are adjusted for equity ownership share to reflect the percentage of output owned by reporting entity.

² As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subparts C and D).

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Ohio Power Company

Ref. No.	Emissions	2020	2021
5.2	Purchased Power^{3,4}		
5.2.1	Carbon Dioxide (CO₂)		
5.2.1.1	Total Purchased Generation CO ₂ Emissions (MT)	1,864,276	2,059,943
5.2.1.2	Total Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.717	0.791
5.2.2	Carbon Dioxide Equivalent (CO₂e)		
5.2.2.1	Total Purchased Generation CO ₂ e Emissions (MT)	1,879,175	2,076,402
5.2.2.2	Total Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.723	0.797
5.3	Owned Generation + Purchased Power		
5.3.1	Carbon Dioxide (CO₂)		
5.3.1.1	Total Owned + Purchased Generation CO ₂ Emissions (MT)	1,864,276	2,059,943
5.3.1.2	Total Owned + Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.717	0.791
5.3.2	Carbon Dioxide Equivalent (CO₂e)		
5.3.2.1	Total Owned + Purchased Generation CO ₂ e Emissions (MT)	1,879,175	2,076,402
5.3.2.2	Total Owned + Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.723	0.797

³ Purchased power emissions have been calculated using the most relevant and accurate method:

- Direct emissions data as reported to EPA for direct purchases, such as PPAs
- E-Grid Emission Factors used

⁴ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart DD).
Left blank if not required to report.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Ohio Power Company

Ref. No.	Emissions	2020	2021
5.4	Non-Generation CO₂e Emissions of Sulfur Hexafluoride (SF₆)		
5.4.1	Total CO ₂ e Emissions of SF ₆ (MT) ^{5,6}	0	0
5.4.2	Leak Rate of CO ₂ e Emissions of SF ₆ (MT/Net MWh) ⁶	0	0
6	Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)		
6.1	Generation Basis for Calculation ⁷	Total	Total
6.2	Nitrogen Oxide (NO_x)		
6.2.1	Total NO _x Emissions (MT)	1,990	1,450
6.2.2	Total NO _x Emissions Intensity (MT/Net MWh)	0.000766	0.000557
6.3	Sulfur Dioxide (SO₂)		
6.3.1	Total SO ₂ Emissions (MT)	1,167	1,339
6.3.2	Total SO ₂ Emissions Intensity (MT/Net MWh)	0.000449	0.000514
6.4	Mercury (Hg)		
6.4.1	Total Hg Emissions (kg)	0	0
6.4.2	Total Hg Emissions Intensity (kg/Net MWh)	0	0

⁵ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart W).

If not required to report, leave blank.

⁶ 2020 SF₆ emissions were restated in the 2022 reporting year due to an inventory calculation correction.

⁷ Owned and purchased generation.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Energy Supply

Ref. No.	Portfolio	2020	2021
1	Owned Nameplate Generation Capacity at End of Year (MW)	3,081	2,378
1.1	Coal	1,601	595
1.2	Natural Gas	7	22
1.3	Nuclear	0	0
1.4	Petroleum	0	0
1.5	Total Renewable Energy Resources	1,473	1,761
1.5.1	Biomass/Biogas	0	0
1.5.2	Geothermal	0	0
1.5.3	Hydroelectric	48	0
1.5.4	Solar	213	326
1.5.5	Wind	1,212	1,435
1.6	Other	0	0

Energy Supply

Ref. No.	Portfolio	2020	2021
2	Net Generation for the Data Year (MWh)	9,650,437	8,586,644
2.1	Coal	4,568,403	3,060,991
2.2	Natural Gas	497	37,043
2.3	Nuclear	0	0
2.4	Petroleum	0	0
2.5	Total Renewable Energy Resources	5,081,537	5,488,610
2.5.1	Biomass/Biogas	0	0
2.5.2	Geothermal	0	0
2.5.3	Hydroelectric	124,594	207,830
2.5.4	Solar	515,845	697,097
2.5.5	Wind	4,441,098	4,583,683
2.6	Other	0	0

Energy Supply

Ref. No.	Portfolio	2020	2021
2.i	Owned Net Generation for the Data Year (MWh)	9,384,114	8,319,850
2.1.i	Coal	4,568,403	3,060,991
2.2.i	Natural Gas	497	37,043
2.3.i	Nuclear	0	0
2.4.i	Petroleum	0	0
2.5.i	Total Renewable Energy Resources	4,815,214	5,221,816
2.5.1.i	Biomass/Biogas	0	0
2.5.2.i	Geothermal	0	0
2.5.3.i	Hydroelectric	124,594	207,830
2.5.4.i	Solar	515,845	697,097
2.5.5.i	Wind	4,174,775	4,316,889
2.6.i	Other	0	0

Energy Supply

Ref. No.	Portfolio	2020	2021
2.ii	Purchased Net Generation for the Data Year (MWh)	266,323	266,794
2.1.ii	Coal	0	0
2.2.ii	Natural Gas	0	0
2.3.ii	Nuclear	0	0
2.4.ii	Petroleum	0	0
2.5.ii	Total Renewable Energy Resources	266,323	266,794
2.5.1.ii	Biomass/Biogas	0	0
2.5.2.ii	Geothermal	0	0
2.5.3.ii	Hydroelectric	0	0
2.5.4.ii	Solar	0	0
2.5.5.ii	Wind	266,323	266,794
2.6.ii	Other	0	0

Energy Supply

Ref. No.	Emissions	2020	2021
5	GHG Emissions: Carbon Dioxide (CO₂) & Carbon Dioxide Equivalent (CO₂e) The alternatives available below are intended to provide flexibility in reporting GHG emissions, and should be used to the extent appropriate for each company.		
5.1	Owned Generation^{1,2}		
5.1.1	Carbon Dioxide (CO₂)		
5.1.1.1	Total Owned Generation CO ₂ Emissions (MT)	4,725,682	2,897,133
5.1.1.2	Total Owned Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.504	0.348
5.1.2	Carbon Dioxide Equivalent (CO₂e)		
5.1.2.1	Total Owned Generation CO ₂ e Emissions (MT)	4,860,799	2,920,515
5.1.2.2	Total Owned Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.518	0.351

¹ Generation and emissions are adjusted for equity ownership share to reflect the percentage of output owned by reporting entity.

² As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subparts C and D).

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Energy Supply

Ref. No.	Emissions	2020	2021
5.2	Purchased Power^{3,4}		
5.2.1	Carbon Dioxide (CO₂)		
5.2.1.1	Total Purchased Generation CO ₂ Emissions (MT)	0	0
5.2.1.2	Total Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0	0
5.2.2	Carbon Dioxide Equivalent (CO₂e)		
5.2.2.1	Total Purchased Generation CO ₂ e Emissions (MT)	0	0
5.2.2.2	Total Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0	0
5.3	Owned Generation + Purchased Power		
5.3.1	Carbon Dioxide (CO₂)		
5.3.1.1	Total Owned + Purchased Generation CO ₂ Emissions (MT)	4,725,682	2,897,133
5.3.1.2	Total Owned + Purchased Generation CO ₂ Emissions Intensity (MT/Net MWh)	0.490	0.337
5.3.2	Carbon Dioxide Equivalent (CO₂e)		
5.3.2.1	Total Owned + Purchased Generation CO ₂ e Emissions (MT)	4,860,799	2,920,515
5.3.2.2	Total Owned + Purchased Generation CO ₂ e Emissions Intensity (MT/Net MWh)	0.504	0.340

³ Purchased power emissions have been calculated using the most relevant and accurate method:

- Direct emissions data as reported to EPA for direct purchases, such as PPAs
- E-Grid Emission Factors used

⁴ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart DD). Left blank if not required to report.

MT = metric tons = tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:

CO ₂ = 1	N ₂ O = 298
CH ₄ = 25	SF ₆ = 22,800

Energy Supply

Ref. No.	Emissions	2020	2021
5.4	Non-Generation CO₂e Emissions of Sulfur Hexafluoride (SF₆)		
5.4.1	Total CO ₂ e Emissions of SF ₆ (MT) ^{5,6}	150,785	121,952
5.4.2	Leak Rate of CO ₂ e Emissions of SF ₆ (MT/Net MWh) ⁶	0.016068	0.014658
6	Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)		
6.1	Generation Basis for Calculation ⁷	Total	Total
6.2	Nitrogen Oxide (NO_x)		
6.2.1	Total NO _x Emissions (MT)	2,652	1,199
6.2.2	Total NO _x Emissions Intensity (MT/Net MWh)	0.000275	0.000140
6.3	Sulfur Dioxide (SO₂)		
6.3.1	Total SO ₂ Emissions (MT)	3,652	2,934
6.3.2	Total SO ₂ Emissions Intensity (MT/Net MWh)	0.000378	0.000342
6.4	Mercury (Hg)		
6.4.1	Total Hg Emissions (kg)	3.0	6.8
6.4.2	Total Hg Emissions Intensity (kg/Net MWh)	0.000000	0.000001

⁵ As reported to EPA under the mandatory GHG Reporting Protocols (40 CFR Part 98, Subpart W).

If not required to report, leave blank.

⁶ 2020 SF₆ emissions were restated in the 2022 reporting year due to an inventory calculation correction.

⁷ Owned and purchased generation.

MT = metric tons =tonne
 1 lb = 453.59 grams
 1 tonne = 1,000,000 grams
 1 metric ton = 1.1023 short tons

CO₂e is calculated using the following global warming potentials (GWPs) from the IPCC Fourth Assessment Report:
 CO₂ = 1 N₂O = 298
 CH₄ = 25 SF₆ = 22,800

Appendix

Ref. No.	Metric: Portfolio	Definition	Units	Period	Source
1	Owned Nameplate Generation Capacity at End of Year (MW)	Provide generation capacity data that is consistent with other external reporting by your company. The alternative default is to use the summation of the nameplate capacity of installed owned generation in the company portfolio, as reported to the U.S. Energy Information Administration (EIA) on Form 860 Generator Information. Note that data should be provided in terms of equity ownership for shared facilities. Nameplate capacity is defined as the maximum rated output of a generator, prime mover, or other electric power production equipment under specific conditions designated by the manufacturer. Installed generator nameplate capacity is commonly expressed in megawatts (MW) and is usually indicated on a nameplate physically attached to the generator.	Megawatt (MW): One million watts of electricity	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary Form 860 Instructions: www.eia.gov/survey/form/eia_860/instructions.pdf
1.1	Coal	Nameplate capacity of generation resources that produce electricity through the combustion of coal (a readily combustible black or brownish-black rock whose composition, including inherent moisture, consists of more than 50 percent by weight and more than 70 percent by volume of carbonaceous material. It is formed from plant remains that have been compacted, hardened, chemically altered, and metamorphosed by heat and pressure over geologic time).	MW	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary

Appendix

Ref. No.	Metric: Portfolio	Definitions	Units	Period	Source
1.2	Natural Gas	Nameplate capacity of generation resources that produce electricity through the combustion of natural gas (a gaseous mixture of hydrocarbon compounds, the primary one being methane).	MW	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
1.3	Nuclear	Nameplate capacity of generation resources that produce electricity through the use of thermal energy released from the fission of nuclear fuel in a reactor.	MW	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
1.4	Petroleum	Nameplate capacity of generation resources that produce electricity through the combustion of petroleum (a broadly defined class of liquid hydrocarbon mixtures. Included are crude oil, lease condensate, unfinished oils, refined products obtained from the processing of crude oil, and natural gas plant liquids).	MW	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary

Appendix

Ref. No.	Metric: Portfolio	Definitions	Units	Period	Source
1.5	Total Renewable Energy Resources	Energy resources that are naturally replenishing but flow-limited. They are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Renewable energy resources include biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, and tidal action.	MW	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
1.5.1	Biomass/ Biogas	Nameplate capacity of generation resources that produce electricity through the combustion of biomass (an organic non-fossil material of biological origin constituting a renewable energy source).	MW	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
1.5.2	Geothermal	Nameplate capacity of generation resources that produce electricity through the use of thermal energy released from hot water or steam extracted from geothermal reservoirs in the earth's crust.	MW	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
1.5.3	Hydroelectric	Nameplate capacity of generation resources that produce electricity through the use of flowing water.	MW	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary

Appendix

Ref. No.	Metric: Portfolio	Definitions	Units	Period	Source
1.5.4	Solar	Nameplate capacity of generation resources that produce electricity through the use of the radiant energy of the sun, which can be converted into other forms of energy, such as heat or electricity.	MW	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
1.5.5	Wind	Nameplate capacity of generation resources that produce electricity through the use of kinetic energy present in wind motion that can be converted to mechanical energy for driving pumps, mills, and electric power generators.	MW	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
1.6	Other	Nameplate capacity of generation resources that are not defined above.	MW	End of Year	

Appendix

Ref. No.	Metric: Portfolio	Definition	Units	Period	Source
2	Net Generation for the data year (MWh)	<p>Net generation is defined as the summation of the amount of gross generation less the electrical energy consumed at the generating station(s) for station service or auxiliaries. Data can be provided in terms of total, owned, and/or purchased, depending on how the company prefers to disseminate data in this template. Provide net generation data that is consistent with other external reporting by your company. The alternative default is to provide owned generation data as reported to EIA on Form 923 Schedule 3 and align purchased power data with the Federal Energy Regulatory Commission (FERC) Form 1 Purchased Power Schedule, Reference Pages numbers 326-327. Note: Electricity required for pumping at pumped-storage plants is regarded as electricity for station service and is deducted from gross generation.</p>	<p>Megawatt hour (MWh): One thousand kilowatt-hours or one million watt-hours</p>	Annual	<p>U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary</p> <p>Form 923 Instructions: www.eia.gov/survey/form/eia_923/instructions.pdf</p>
2.1	Coal	<p>Net electricity generated by the combustion of coal (a readily combustible black or brownish-black rock whose composition, including inherent moisture, consists of more than 50 percent by weight and more than 70 percent by volume of carbonaceous material. It is formed from plant remains that have been compacted, hardened, chemically altered, and metamorphosed by heat and pressure over geologic time).</p>	MWh	Annual	<p>U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary</p>

Appendix

Ref. No.	Metric: Portfolio	Definition	Units	Period	Source
2.2	Natural Gas	Net electricity generated by the combustion of natural gas (a gaseous mixture of hydrocarbon compounds, the primary one being methane).	MWh	Annual	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
2.3	Nuclear	Net electricity generated by the use of the thermal energy released from the fission of nuclear fuel in a reactor.	MWh	Annual	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
2.4	Petroleum	Net electricity generated by the combustion of petroleum (a broadly defined class of liquid hydrocarbon mixtures. Included are crude oil, lease condensate, unfinished oils, refined products obtained from the processing of crude oil, and natural gas plant liquids).	MWh	Annual	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary

Appendix

Ref. No.	Metric: Portfolio	Definition	Units	Period	Source
2.5	Total Renewable Energy Resources	Energy resources that are naturally replenishing but flow-limited. They are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Renewable energy resources include biomass, hydro, geothermal, solar, wind, ocean thermal, wave action, and tidal action.	MWh	Annual	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
2.5.1	Biomass/ Biogas	Net electricity generated by the combustion of biomass (an organic non-fossil material of biological origin constituting a renewable energy source).	MWh	Annual	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
2.5.2	Geothermal	Net electricity generated by the use of thermal energy released from hot water or steam extracted from geothermal reservoirs in the earth's crust.	MWh	Annual	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
2.5.3	Hydroelectric	Net electricity generated by the use of flowing water.	MWh	Annual	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary

Appendix

Ref. No.	Metric: Portfolio	Definition	Units	Period	Source
2.5.4	Solar	Net electricity generated by the use of the radiant energy of the sun, which can be converted into other forms of energy, such as heat or electricity.	MWh	Annual	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
2.5.5	Wind	Net electricity generated by the use of kinetic energy present in wind motion that can be converted to mechanical energy for driving pumps, mills, and electric power generators.	MWh	Annual	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
2.6	Other	Net electricity generated by other resources that are not defined above. If applicable, this metric should also include market purchases where the generation resource is unknown.	MWh	Annual	

Appendix

Ref. No.	Metric: Portfolio	Definition	Units	Period	Source
3	Investing in the Future: Capital Expenditures, Energy Efficiency (EE), and Smart Meters				
3.1	Total Annual Capital Expenditures	Align annual capital expenditures with data reported in recent investor presentations. A capital expenditure is the use of funds or assumption of a liability in order to obtain physical assets that are to be used for productive purposes for at least one year. This type of expenditure is made in order to expand the productive or competitive posture of a business.	Nominal Dollars	Annual	Accounting Tools, Q&A: www.accountingtools.com/questions-and-answers/what-is-a-capital-expenditure
3.2	Incremental Annual Electricity Savings from EE Measures (MWh)	Incremental Annual Electricity Savings for the reporting year as reported to EIA on Form 861. Incremental Annual Savings for the reporting year are those changes in energy use caused in the current reporting year by: (1) new participants in DSM programs that operated in the previous reporting year, and (2) participants in new DSM programs that operated for the first time in the current reporting year. A "New program" is a program for which the reporting year is the first year the program achieved savings, regardless of when program development and expenditures began.	MWh	End of Year	U.S. Energy Information Administration, Form EIA-861 Annual Electric Power Industry Report Instructions: www.eia.gov/survey/form/eia_861/instructions.pdf

Appendix

Ref. No.	Metric: Portfolio	Definition	Units	Period	Source
3.3	Incremental Annual Investment in Electric EE Programs (Nominal Dollars)	Total annual investment in electric energy efficiency programs as reported to EIA on Form 861.	Nominal Dollars	End of Year	U.S. Energy Information Administration, Form EIA-861 Annual Electric Power Industry Report Instructions: www.eia.gov/survey/form/eia_861/instructions.pdf
3.4	Percent of Total Electric Customers with Smart Meters (At End of Year)	Number of electric smart meters installed at end-use customer locations, divided by number of total electric meters installed at end-use customer locations. Smart meters are defined as electricity meters that measure and record usage data at a minimum, in hourly intervals, and provide usage data to both consumers and energy companies at least once daily. Align reporting with EIA Form 861 meter data, which lists all types of meter technology used in the system as well as total meters in the system.	Percent	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary

Appendix

Ref. No.	Metric: Portfolio	Definition	Units	Period	Source
4	Retail Electric Customer Count (At End of Year)	Electric customer counts should be aligned with the data provided to EIA on Form 861 - Sales to Utility Customers.			U.S. Energy Information Administration, Form EIA-861 Annual Electric Power Industry Report Instructions: www.eia.gov/survey/form/eia_861/instructions.pdf
4.1	Commercial	An energy-consuming sector that consists of service-providing facilities and equipment of businesses; Federal, State, and local governments; and other private and public organizations, such as religious, social, or fraternal groups. The commercial sector includes institutional living quarters. It also includes sewage treatment facilities. Common uses of energy associated with this sector include space heating, water heating, air conditioning, lighting, refrigeration, cooking, and running a wide variety of other equipment. Note: This sector includes generators that produce electricity and/or useful thermal output primarily to support the activities of the above-mentioned commercial establishments.	Number of end-use retail customers receiving electricity (individual homes and businesses count as one)	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary

Appendix

Ref. No.	Metric: Portfolio	Definition	Units	Period	Source
4.2	Industrial	An energy-consuming sector that consists of all facilities and equipment used for producing, processing, or assembling goods. The industrial sector encompasses the following types of activity manufacturing (NAICS codes 31-33); agriculture, forestry, fishing and hunting (NAICS code 11); mining, including oil and gas extraction (NAICS code 21); and construction (NAICS code 23). Overall energy use in this sector is largely for process heat and cooling and powering machinery, with lesser amounts used for facility heating, air conditioning, and lighting. Fossil fuels are also used as raw material inputs to manufactured products. Note: This sector includes generators that produce electricity and/or useful thermal output primarily to support the above-mentioned industrial activities. Various EIA programs differ in sectoral coverage.	Number of end-use retail customers receiving electricity (individual homes and businesses count as one)	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary
4.3	Commercial	An energy-consuming sector that consists of living quarters for private households. Common uses of energy associated with this sector include space heating, water heating, air conditioning, lighting, refrigeration, cooking, and running a variety of other appliances. The residential sector excludes institutional living quarters. Note: Various EIA programs differ in sectoral coverage.	Number of end-use retail customers receiving electricity (individual homes and businesses count as one)	End of Year	U.S. Energy Information Administration, Online Glossary: www.eia.gov/tools/glossary

Appendix

Ref. No.	Metric: Emissions	Definition	Units	Period	Source
5	GHG Emissions: Carbon Dioxide (CO₂) and Carbon Dioxide Equivalent (CO₂e)				
5.1	Owned Generation^{1,2,3}				
5.1.1	Carbon Dioxide (CO ₂)				
5.1.1.1	Total Owned Generation CO ₂ Emissions	Total direct CO ₂ emissions from company equity-owned fossil fuel combustion generation in accordance with EPA's GHG Reporting Program (40 CFR, part 98, Subpart C – General Stationary Fuel Combustion and Subpart D – Electricity Production), using a continuous emission monitoring system (CEMS) or other approved methodology.	Metric Tons	Annual	U.S. Environmental Protection Agency, Greenhouse Gas Reporting Program (40 CFR, part 98, Subparts C and D)
5.1.1.2	Total Owned Generation CO ₂ Emissions Intensity	Total direct CO ₂ emissions from 5.1.1.1, divided by total MWh of owned net generation reported in the Utility Portfolio section.	Metric Tons/ Net MWh	Annual	

Appendix

Ref. No.	Metric: Emissions	Definition	Units	Period	Source
5.1.2	Carbon Dioxide Equivalent (CO ₂ e)				
5.1.2.1	Total Owned Generation CO ₂ e Emissions	Total direct CO ₂ e emissions (CO ₂ , CH ₄ , and N ₂ O) from company equity-owned fossil fuel combustion generation in accordance with EPA's GHG Reporting Program (40 CFR, part 98, Subpart C – General Stationary Fuel Combustion and Subpart D – Electricity Production), using a continuous emission monitoring system (CEMS) or other approved methodology.	Metric Tons	Annual	U.S. Environmental Protection Agency, Greenhouse Gas Reporting Program (40 CFR, part 98, Subparts C and D)
5.1.2.2	Total Owned Generation CO ₂ e Emissions Intensity	Total direct CO ₂ e emissions from 5.1.2.1, divided by total MWh of owned net generation reported in the Utility Portfolio section.	Metric Tons/ Net MWh	Annual	

Appendix

Ref. No.	Metric: Emissions	Definition	Units	Period	Source
5.2	Purchased Power ⁴				
5.2.1	Carbon Dioxide (CO ₂)				
5.2.1.1	Total Purchased Generation CO ₂ Emissions	<p>Purchased power CO₂ emissions should be calculated using the most relevant and accurate of the following methods:</p> <p>(1) For direct purchases, such as PPAs, use the direct emissions data as reported to EPA.</p> <p>(2) For market purchases where emissions attributes are unknown, use applicable regional or national emissions rate:</p> <ul style="list-style-type: none"> - ISO/RTO-level emission factors - Climate Registry emission factors - E-Grid emission factors 	Metric Tons	Annual	
5.2.1.2	Total Purchased Generation CO ₂ Emissions Intensity	Total purchased power CO ₂ emissions from 5.2.1.1, divided by total MWh of purchased net generation reported in the Utility Portfolio section.	Metric Tons/ Net MWh	Annual	

Appendix

Ref. No.	Metric: Emissions	Definition	Units	Period	Source
5.2.2	Carbon Dioxide Equivalent (CO ₂ e)				
5.2.2.1	Total Purchased Generation CO ₂ e Emissions	<p>Purchased power CO₂e emissions should be calculated using the most relevant and accurate of the following methods:</p> <p>(1) For direct purchases, such as PPAs, use the direct emissions data as reported to EPA.</p> <p>(2) For market purchases where emissions attributes are unknown, use applicable regional or national emissions rate:</p> <ul style="list-style-type: none"> - ISO/RTO-level emission factors - Climate Registry emission factors - E-Grid emission factors 	Metric Tons	Annual	
5.2.2.2	Total Purchased Generation CO ₂ e Emissions Intensity	Total purchased power CO ₂ e emissions from 5.2.2.1, divided by total MWh of purchased net generation reported in the Utility Portfolio section.	Metric Tons/ Net MWh	Annual	

Appendix

Ref. No.	Metric: Emissions	Definition	Units	Period	Source
5.3	Owned Generation + Purchased Power				
5.3.1	Carbon Dioxide (CO ₂)				
5.3.1.1	Total Owned + Purchased Generation CO ₂ Emissions	Sum of total CO ₂ emissions reported under 5.1.1.1 and 5.2.1.1.	Metric Tons	Annual	
5.3.1.2	Total Owned + Purchased Generation CO ₂ Emissions Intensity	Total emissions from 5.3.1.1, divided by total MWh of owned and purchased net generation reported in the Utility Portfolio section.	Metric Tons/ Net MWh	Annual	
5.3.2	Carbon Dioxide Equivalent (CO₂e)	Sum of total CO ₂ e emissions reported under 5.1.2.1 and 5.2.2.1.			
5.3.2.1	Total Owned + Purchased Generation CO ₂ e Emissions	Sum of total CO ₂ e emissions reported under 5.1.2.1 and 5.2.2.1.	Metric Tons	Annual	

Appendix

Ref. No.	Metric: Emissions	Definition	Units	Period	Source
5.3.2.2	Total Owned + Purchased Generation CO ₂ e Emissions Intensity	Total emissions from 5.3.2.1, divided by total MWh of owned and purchased net generation reported in the Utility Portfolio section.	Metric Tons/ Net MWh	Annual	
5.4	Non-Generation CO₂e Emissions of Sulfur Hexafluoride (SF₆)				
5.4.1	Total CO ₂ e Emissions of SF ₆	Total CO ₂ e emissions of SF ₆ in accordance with EPA's GHG Reporting Program (40 CFR Part 98, Subpart DD).	Metric Tons	Annual	U.S. Environmental Protection Agency, Greenhouse Gas Reporting Program (40 CFR, part 98, Subpart DD)
5.4.2	Leak Rate of CO ₂ e Emissions of SF ₆	Leak rate of CO ₂ e emissions of SF ₆ in accordance with EPA's GHG Reporting Program (40 CFR Part 98, Subpart DD).	Metric Tons/ Net MWh	Annual	U.S. Environmental Protection Agency, Greenhouse Gas Reporting Program (40 CFR, part 98, Subpart DD)

Appendix

Ref. No.	Metric: Emissions	Definition	Units	Period	Source
6	Nitrogen Oxide (NO_x), Sulfur Dioxide (SO₂), Mercury (Hg)				
6.1	Generation Basis for Calculation	Indicate the generation basis for calculating SO ₂ , NO _x , and Hg emissions and intensity. Fossil: Fossil Fuel Generation Only Total: Total System Generation Other: Other (please specify in comment section)			
6.2	Nitrogen Oxide (NO_x)				
6.2.1	Total NO _x Emissions	Total NO _x emissions from company equity-owned fossil fuel combustion generation. In accordance with EPA's Acid Rain Reporting Program (40 CFR, part 75) or regulatory equivalent.	Metric Tons	Annual	U.S. Environmental Protection Agency, Acid Rain Reporting Program (40 CFR, part 75)
6.2.2	Total NO _x Emissions Intensity	Total from above, divided by the MWh of generation basis as indicated in 6.1.	Metric Tons/ Net MWh	Annual	

Appendix

Ref. No.	Metric: Emissions	Definition	Units	Period	Source
6.3	Sulfur Dioxide (SO₂)				
6.3.1	Total SO ₂ Emissions	Total SO ₂ emissions from company equity-owned fossil fuel combustion generation. In accordance with EPA's Acid Rain Reporting Program (40 CFR, part 75) or regulatory equivalent.	Metric Tons	Annual	U.S. Environmental Protection Agency, Acid Rain Reporting Program (40 CFR, part 75)
6.3.2	Total SO ₂ Emissions Intensity	Total from above, divided by the MWh of generation basis as indicated in 6.1.	Metric Tons/ Net MWh	Annual	
6.4	Mercury (Hg)				
6.4.1	Total Hg Emissions	Total Mercury emissions from company equity-owned fossil fuel combustion generation. Preferred methods of measurement are performance-based, direct measurement as outlined in the EPA Mercury and Air Toxics Standard (MATS). In the absence of performance-based measures, report value aligned with Toxics Release Inventory (TRI) or regulatory equivalent for international operations.	Kilograms	Annual	EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report
6.4.2	Total Hg Emissions Intensity	Total from above, divided by the MWh of generation basis as indicated in 6.1.	Kilograms/ Net MWh	Annual	

Appendix

Ref. No.	Metric: Resources	Definition	Units	Period	Source
7	Human Resources				
7.1	Total Number of Employees	Average number of employees over the year. To calculate the annual average number of employees: (1) Calculate the total number of employees your establishment paid for all periods. Add the number of employees your establishment paid in every pay period during the data year. Count all employees that you paid at any time during the year and include full-time, part-time, temporary, seasonal, salaried, and hourly workers. Note that pay periods could be monthly, weekly, bi-weekly, and so on. (2) Divide the total number of employees (from step 1) by the number of pay periods your establishment had in during the data year. Be sure to count any pay periods when you had no (zero) employees. (3) Round the answer you computed in step 2 to the next highest whole number.	Number of Employees	Annual	U.S. Department of Labor, Bureau of Labor Statistics, Steps to estimate annual average number of employees: www.bls.gov/respondents/iif/annualavghours.htm EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report
7.2	Percentage of Women in Total Workforce	Percentage of women (defined as employees who identify as female) in workforce.	Percent of Employees	Annual	U.S. Equal Employment Opportunity Commission, EEO Terminology: www.archives.gov/eo/terminology.html EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report

Appendix

Ref. No.	Metric: Resources	Definition	Units	Period	Source
7.3	Percentage of Minorities in Total Workforce	Percentage of minorities in workforce. Minority employees are defined as "the smaller part of a group. A group within a country or state that differs in race, religion or national origin from the dominant group. Minority is used to mean four particular groups who share a race, color or national origin." These groups are: "(1) American Indian or Alaskan Native. A person having origins in any of the original peoples of North America, and who maintain their culture through a tribe or community; (2) Asian or Pacific Islander. A person having origins in any of the original people of the Far East, Southeast Asia, India, or the Pacific Islands. These areas include, for example, China, India, Korea, the Philippine Islands, and Samoa; (3) Black (except Hispanic). A person having origins in any of the black racial groups of Africa; (4) Hispanic. A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race."	Percent of Employees	Annual	U.S. Equal Employment Opportunity Commission, EEO Terminology: www.archives.gov/eo/terminology.html EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report
7.4	Total Number of Board of Directors/ Trustees	Average number of employees on the Board of Directors/Trustees over the year.	Number of Employees	Annual	

Appendix

Ref. No.	Metric: Resources	Definition	Units	Period	Source
7.5	Percentage of Women on Board of Directors/ Trustees	Percentage of women (defined as employees who identify as female) on Board of Directors/Trustees.	Percent of Employees	Annual	U.S. Equal Employment Opportunity Commission, EEO Terminology: www.archives.gov/eo/terminology.html EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report
7.6	Percentage of Minorities on Board of Directors/ Trustees	Percentage of minorities on Board of Directors/ Trustees. Minority employees are defined as "the smaller part of a group. A group within a country or state that differs in race, religion or national origin from the dominant group. Minority is used to mean four particular groups who share a race, color or national origin." These groups are: "(1) American Indian or Alaskan Native. A person having origins in any of the original peoples of North America, and who maintain their culture through a tribe or community; (2) Asian or Pacific Islander. A person having origins in any of the original people of the Far East, Southeast Asia, India, or the Pacific Islands. These areas include, for example, China, India, Korea, the Philippine Islands, and Samoa; (3) Black (except Hispanic). A person having origins in any of the black racial groups of Africa; (4) Hispanic. A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race."	Percent of Employees	Annual	U.S. Equal Employment Opportunity Commission, EEO Terminology: www.archives.gov/eo/terminology.html EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report

Appendix

Ref. No.	Metric: Resources	Definition	Units	Period	Source
7.7	Employee Safety Metrics	<p>Number of injuries or illnesses x 200,000 / Number of employee labor hours worked. Injury or illness is recordable if it results in any of the following: death, days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or loss of consciousness. You must also consider a case to meet the general recording criteria if it involves a significant injury or illness diagnosed by a physician or other licensed health care professional, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid, or loss of consciousness. Record the injuries and illnesses of all employees on your payroll, whether they are labor, executive, hourly, salary, part-time, seasonal, or migrant workers. You also must record the recordable injuries and illnesses that occur to employees who are not on your payroll if you supervise these employees on a day-to-day basis. If your business is organized as a sole proprietorship or partnership, the owner or partners are not considered employees for recordkeeping purposes. For temporary employees, you must record these injuries and illnesses if you supervise these employees on a day-to-day basis. If the contractor's employee is under the day-to-day supervision of the contractor, the contractor is responsible for recording the injury or illness. If you supervise the contractor employee's work on a day-to-day basis, you must record the injury or illness.</p>	Percent	Annual	<p>U.S. Department of Labor, Occupational Health and Safety Administration, OSHA Recordable Incidents. EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report</p>

Appendix

Ref. No.	Metric: Resources	Definition	Units	Period	Source
7.7.2	Lost-time Case Rate	Calculated as: Number of lost-time cases x 200,000 / Number of employee labor hours worked. Only report for employees of the company as defined for the "recordable incident rate for employees" metric. A lost-time incident is one that resulted in an employee's inability to work the next full work day.	Percent	Annual	U.S. Department of Labor, Occupational Health and Safety Administration, OSHA Recordable Incidents. EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report
7.7.3	Days Away, Restricted, and Transfer (DART) Rate	Calculated as: Total number of DART incidents x 200,000 / Number of employee labor hours worked. A DART incident is one in which there were one or more lost days or one or more restricted days, or one that resulted in an employee transferring to a different job within the company.	Percent	Annual	U.S. Department of Labor, Occupational Health and Safety Administration, OSHA Recordable Incidents. EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report
7.7.4	Work-related Fatalities	Total employee fatalities. Record for all employees on your payroll, whether they are labor, executive, hourly, salary, part-time, seasonal, or migrant workers. Include fatalities to those that occur to employees who are not on your payroll if you supervise these employees on a day-to-day basis. For temporary employees, report fatalities if you supervise these employees on a day-to-day basis.	Number of Employees	Annual	U.S. Department of Labor, Occupational Health and Safety Administration, OSHA Recordable Incidents. EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report

Appendix

Ref. No.	Metric: Resources	Definition	Units	Period	Source
8	Fresh Water Resources				
8.1	Water Withdrawals - Consumptive (Billions of Liters/Net MWh)	Rate of freshwater consumed for generation. "Freshwater" includes water sourced from fresh surface water, groundwater, rain water, and fresh municipal water. Do NOT include recycled, reclaimed, or gray water. Water consumption is defined as water that is not returned to the original water source after being withdrawn, including evaporation to the atmosphere. Divide billions of liters by equity-owned total net generation from all electric generation as reported under Metric 2, Net Generation for the data year (MWh).	Billions of Liters/Net MWh	Annual	Partially sourced from EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report
8.2	Water Withdrawals - Non-Consumptive (Billions of Liters/Net MWh)	Rate of fresh water withdrawn, but not consumed, for generation. "Freshwater" includes water sourced from fresh surface water, groundwater, rain water, and fresh municipal water. Do NOT include recycled, reclaimed, or gray water. Information on organizational water withdrawal may be drawn from water meters, water bills, calculations derived from other available water data or (if neither water meters nor bills or reference data exist) the organization's own estimates. Divide billions of liters by equity-owned total net generation from all electric generation as reported under Metric 2, Net Generation for the data year (MWh).	Billions of Liters/Net MWh	Annual	Partially sourced from EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report

Appendix

Ref. No.	Metric: Resources	Definition	Units	Period	Source
9	Waste Products				
9.1	Amount of Hazardous Waste Manifested for Disposal	Metric tons of hazardous waste, as defined by the Resource Conservation and Recovery Act (RCRA), manifested for disposal at a Treatment Storage and Disposal (TSD) facility. Methods of disposal include disposing to landfill, surface impoundment, waste pile, and land treatment units. Hazardous wastes include either listed wastes (F, K, P and U lists) or characteristic wastes (wastes which exhibit at least one of the following characteristics – ignitability, corrosivity, reactivity, toxicity). Include hazardous waste from all company operations including generation, transmissions, distribution, and other operations.	Metric Tons	Annual	Partially sourced from EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report
9.2	Percent of Coal Combustion Products Beneficially Used	Percent of coal combustion products (CCPs) - fly ash, bottom ash, boiler slag, flue gas desulfurization materials, scrubber bi-product - diverted from disposal into beneficial uses, including being sold. Include any CCP that is generated during the data year and stored for beneficial use in a future year. Only include CCP generated at company equity-owned facilities. If no weight data are available, estimate the weight using available information on waste density and volume collected, mass balances, or similar information.	Percent	Annual	Partially sourced from EPRI, Metrics to Benchmark Electric Power Company Sustainability Performance, 2018 Technical Report