

2023

SASB AND ESG METRICS REPORT

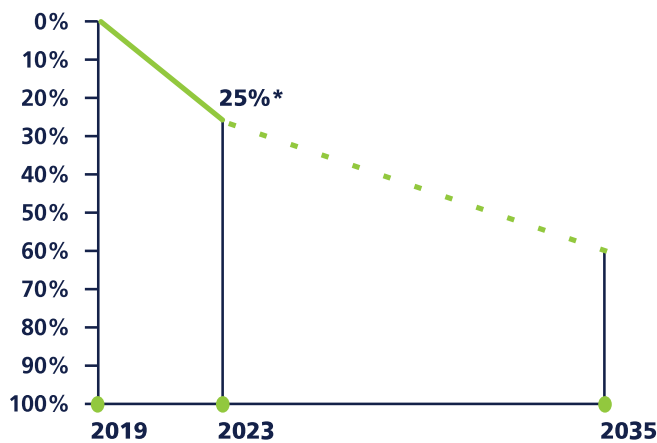
2023 SASB AND ESG METRICS INDEX

This document contains disclosure of key relevant metrics to Essential's operations, as well as those included in the International Financial Reporting Standards Foundation (IFRS) Sustainability Accounting Standards Board (SASB) standards for the Water Utilities & Services and Gas Utilities & Distribution industries. The document covers disclosures for the period Jan. 1, 2023 through Dec. 31, 2023, unless otherwise noted. For more detailed information about Essential's ESG initiatives, strategy and additional data, see our [2022 ESG Report](#). Essential updates and publishes its full ESG Report every other year at esg.essential.co, providing updates on key metrics between reporting cycles.

Recent Highlights

Essential has made significant progress towards its ESG commitments.

*Target progress through 12/31/23. See the most up to date version on the [online progress tracker](#).

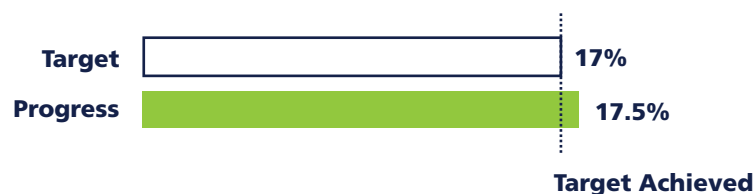


Climate Change

By 2035, the company will achieve a 60% Scope 1 and 2 greenhouse gas emissions reduction, from a 2019 baseline.

- Essential has achieved a 25% reduction from its 2019 baseline
- In 2022, Essential's water and wastewater operations began procuring nearly 100% renewable energy for its Pennsylvania, Illinois, Ohio, and New Jersey utilities
- Essential's gas operations continued main replacement activities to reduce fugitive methane emissions

Employee Diversity



Supplier Diversity



- 3BL Media included Essential in its **100 Best Corporate Citizens** list, recognizing the company's exemplary environmental, social, and governance practices. Essential was also included by Newsweek to its **America's Most Responsible Companies** list and by USA Today to its America's Climate Leaders list. These recognitions reflect Essential's commitment to progressing as a utility leader for sustainable and ethical practices.
- Essential co-hosted the second annual H2 Summit in Pittsburgh. This gathering of clean energy experts focuses on **hydrogen development** and looks to secure Appalachia's position as a leader in the future of energy. Essential also continued work with University of Pittsburgh to explore and research the potential for hydrogen blending in its gas operations to further **reduce greenhouse gas emissions**.
- Essential's charitable giving to 501(c)(3) organizations in 2023 totaled **\$5 million**. We also matched employee donations to contribute a combined **\$800,000** to the United Way. Essential employees tracked more than 4,720 hours of paid volunteer time in their local communities. Additionally impacting our local community and economy was the direction of more than half of our **\$1.2 billion** in controllable spend to suppliers from within the states we operate. Much of this spend was with small-to-medium size businesses with which Essential has a long-standing relationship.
- Various improvements to our employee experience were made in the past year, including the rollout of new reward and recognition program, increase in career ladder transparency, and expansion of professional development participation. These actions have contributed to employee engagement scores rising across a majority of survey dimensions, year-over-year. Further, Essential has experienced a **47% decrease** in turnover over the past two years and a **50% increase** in new hire retention.

Alignment with UN Sustainable Development Goals

Essential is committed to supporting the achievement of the United Nations' Sustainable Development Goals (SDGs), which aim to address global challenges and achieve peace and prosperity for all. For more information about how Essential's strategy and operations align with these goals, please visit our [ESG microsite](#).

Of the 17 SDGs, our business can most significantly positively impact:



Clean Water and Affordable and Sanitation



Affordable and Clean Energy



Climate Action

Among those remaining, our ESG program most directly supports:



Good Health and Well-Being



Gender Equality



Decent Work and Economic Growth



Industry, Innovation and Infrastructure



Reducing Inequalities

Corporate Profile

ESSENTIAL

Revenue
\$2.05B

Employees (full-time)
3,200+

People Served
5.5M

Customer Connections
1.9M

GAS

Gas Utility Customer Connections
0.8M

Gas Delivered to Customers
146.4Bcf

WATER AND WASTEWATER

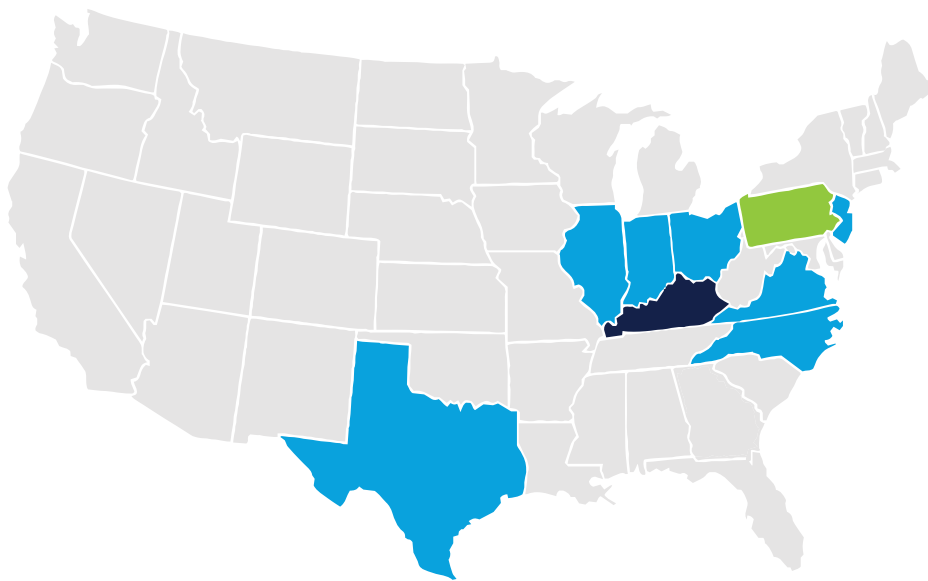
Water and Wastewater Utility Customer Connections
1.1M

Gallons of Drinking Water Produced
86.0B

Water Systems
1,513

Gallons of Wastewater Treated
11.4M

Wastewater Systems
237



States

- Illinois
- Indiana
- Kentucky
- New Jersey
- North Carolina
- Ohio
- Pennsylvania
- Texas
- Virginia

- Aqua and Peoples
- Peoples Only
- Aqua Only

CONSERVATION & STEWARDSHIP

Essential Utilities

Greenhouse Gas (GHG) Emissions*					BASELINE
	2023	2022	2021	2020	2019
Scope 1 emissions (metric tons CO ₂ e)	463,065	489,132	514,787	531,219	553,530
Scope 2 emissions (market-based; metric tons CO ₂ e)	41,392	51,008	117,723	111,262	117,393
Total Scope 1 and 2 emissions (metric tons CO ₂ e)	504,457	540,141	632,510	642,481	670,923
Total Scope 3 emissions	8,194,886	9,020,390	8,659,222	8,653,185	Not disclosed

*2019 was the first year for which Essential disclosed Scope 1 and 2 GHG emissions for its combined water, wastewater, and natural gas utilities. This served as the baseline for the company's emissions reduction target. 2020 is the first year for which Essential disclosed Scope 3 emissions for its combined water, wastewater and gas utilities. Keramida, a third-party auditor, has provided limited assurance of Essential's Scope 1 and Scope 2 emissions for the years 2022 and 2023. Essential has rebaselined and adjusted all historical years to account for a change in the methane emissions factor utilized for calculations consistent with the 100-year value provided by AR5 (IPCC Fifth Assessment Report). Also, Essential revised 2022's GHG inventory to correct a small methodological inconsistency with prior years.

Energy Management

SASB: IF-WU-130a.1

	2023	2022	2021
Total energy consumed (MWh)	780,062	761,602	762,373
Energy sourced from the grid (percentage grid electricity)	16%	15%	39%
Energy derived from renewables (percentage renewable)	29%	29%	4%

Energy Intensity*

	2023	2022	2021
Water (kWh/kgal)	3.2	3.3	3.1
Wastewater** (kWh/kgal)	7.5	7.6	5.4
Gas (kWh/Mcf)	2.0	1.8	2.0

*Energy intensity also includes other energy sources besides electricity. However, this calculation excludes energy in gasoline used to power fleet vehicles. It is intended as a measure of energy intensity for core treatment, production, and distribution activities at operating plants. While Essential believes its calculation of energy intensity is the most holistic and informative measurement of resource efficiency, electricity intensity for 2023 is as follows:

3.0 kWh/kgal (water), 7.2 kWh/kgal (wastewater), and 0.1 kWh/Mcf (gas).

**Energy intensity values for wastewater treatment are highly dependent on physical factors, especially relating to interannual rainfall fluctuations. This makes year-on-year trend comparison difficult.

Waste Generation (dry metric tons)*

Description	Beneficial Reuse / Recycled	Landfill	Incineration	2023 Total
Treatment of Water	40,215 (Land Application)	5,868	0	46,083
Treatment of Wastewater	1,954 (Land Application)	3,898	788	6,640
Office Waste / Miscellaneous Non-Hazardous Waste	355 (Recycled)	2,192	0	2,548
Natural Gas Liquids	507 (Fuel Blending)	0	0	507
Hazardous Waste	3	0	15	18

*We record waste volumes upon removal from our site, consistent with regulatory reporting requirements. We may temporarily store waste on site in significant volumes and ship in a different year than when generated. Therefore, year over year, this data will vary.

Air Emissions (dry metric tons)*

	2023	2022	2021
Nitrogen Oxides (NOx)**	203.0	211.0	237.9
Particulate Matter (PM10)	<10	<10	<10
Sulfur Oxides (SOx)	<1	<1	<1
Volatile Organic Compounds (VOCs)	44.8	45.8	187.0
Hazardous Air Pollutants (HAPs)	21.7	23.2	41.9

*Emissions data from sources within the scope of our required regulatory air emissions reporting. These include facilities with compressor stations or multiple large emergency generators. The data above does not include air emissions generated from vehicles and permit-exempt emergency generators.

**Nitrous oxide (N₂O) is a greenhouse gas, but we have included it in this section summed with other nitrogen oxides for completeness and because it constitutes a small amount of our total NOx emissions.

WATER AND WASTEWATER BUSINESS

Distribution Network Frequency*

	2023	2022	2021
Water main replacement (miles of main replaced) SASB: IF-WU-140a.1	There are many factors that can affect year-on-year main replacement. To stabilize these and provide a more consistent view of our replacement rate, we have elected to disclose the average for the past five years. See data points below for our rolling averages.		
Volume of non-revenue water losses (billions of gallons) SASB: IF-WU-140a.2	17.3	17.8	17.2
Percent of total production (%)	20.1%	20.5%	20.3%

*Data is displayed here in both the absolute value of volume as well as a percentage of total production. This normalizes the data and accounts for changes in total water production, or send out, across years. We believe that, due to our acquisition of new water systems over time, and the practical margin of error with measurement equipment in the field, our levels of non-revenue real water loss have remained materially consistent over the past three years. For more information, refer to the Reducing Water Loss section of our [2022 ESG Report](#).

Non-revenue water losses represented here include leakage (real losses), apparent losses, (such as theft and meter inaccuracies) and other instances, such as water main flushing and water for emergency fire services. These values are determined based on the difference between water production and water ultimately delivered to customers and billed.

5-Year rolling average of annual miles of water main replacement

150

5-Year rolling average of annual main replacement rate

1.0%

Effluent Quality Management

	2023	2022	2021
Number of incidents of non-compliance associated with water effluent quality permits, standards and regulations SASB IF-WU-140b.1	120 incidents 98.1% days in compliance	148 incidents 97.7% days in compliance	253 incidents, 96.5% days in compliance

Water Affordability and Access*

	2023	2022	2021
Number of residential customer water disconnections for non-payment, percentage reconnected within 30 days**	24,325	20,577	22,147
SASB: IF-WU-240a.3	54.3%	51.9%	55.2%

*We do not believe SASB's other water utility standards on affordability [IF-WU-240a.1 and IF-WU-240a.2] reflect the differences in water rates (as opposed to electric and gas) that exist. Given Essential's wide geographic footprint across 8 states and operation of over 1,500 systems of varying size, the complexity of our operations and the necessary volume in tariffs and rate structures make calculation of materially accurate average and typical rates not representative. We will continue to support efforts to further develop and refine SASB's industry guidance so that it better allows transparency into this issue. We also continue to interface with state public utility commissions to approve rate structures that are both affordable for customers and necessary to adequately maintain infrastructure and promote safety of this critical resource.

**Given the unique circumstances surrounding the COVID-19 pandemic, 2021 residential customer water disconnection data is not comparable to other years. Essential observed moratoriums on disconnections consistent with public utility commission guidance.

Drinking Water Quality*

	2023	2022	2021
Number of incidents of non-compliance associated with water effluent quality permits, standards, and regulations	8	13	6
SASB: IF-WU-250a.1	6	8	11
	141**	47	88
Total tier violations	155	68	101
Percent of systems with tiered violations	10.1%	4.3%	6.7%
Percent of systems with tier 1 + tier 2	0.9%	1.4%	1.1%
Percent of systems with tier 3 only	9.3%	3.1%	5.8%
Total # of systems	1,513	1,512	1,518

*Counts for prior year events may shift slightly due to timing differences between event discovery, regulatory rescissions, and external ESG reporting.

**There were several factors that led to the increase in Tier 3 events. These include regulatory agencies requiring notices for reporting violations that previously did not require Tier 3 notices, as well as some missed monitoring. Essential takes these events seriously and has implemented changes in the company's systems to reduce potential for future similar missed monitoring.

Water Compliance vs. U.S. Averages

Measured as a percentage of community water systems with health-based violations. U.S. averages compiled from the [EPA's ECHO Database](#).

	2023	2022	2021
Essential	0.9%	1.4%	1.1%
U.S.	7.0%	6.7%	6.3%
Essential's outperformance	7.8x	4.8x	5.7x

End-Use Efficiency

	2023	2022	2021
Percentage of water utility revenues from rate structures that are designed to promote conservation and revenue resilience	About 4%*	About 4%*	About 4%*
SASB: IF-WU-420a.1			

Customer water savings from efficiency measures, by market

SASB: IF-WU-420a.2

Across our footprint, our tariffs are designed so that a larger percentage of the total bill is recovered through a volumetric charge thereby incentivizing customers to conserve both water and wastewater use on a monthly basis. In addition, our customers' average consumption has fallen significantly over time, largely driven by more efficient appliances. We also have efforts in place to educate customers on this issue and raise awareness of water-saving practices. It is difficult to ascertain the volumetric water savings directly attributable to Essential's efforts because this depends on many variables and factors, but we will continue to educate customers and encourage them to use water efficiently as we all share the responsibility of caring for natural resources.

For additional information, see the Helping Our Customers Conserve Water section of the [2022 ESG Report](#).

*In Illinois, a volume balancing adjustment (VBA) was introduced and covers the volumetric revenues of our water and wastewater operations, which comprises roughly half of the state utility's total revenues. As Aqua Illinois, in 2023, comprised about 8% of the revenue of Essential's regulated water segment, roughly half of this comes from the VBA rate structure. The VBA tracks actual volumetric revenue and compares against what is allowed in the regulatory rate case. The difference becomes the "rider" or financial adjustment. Essential began tracking this in April of 2018 and the first rider calculated 12 months later. It did not result in a financially material adjustment.

Total water sourced from regions with high or extremely high baseline water stress, percentage purchased from a third party

SASB: IF-WU-440a.1

Essential calculates this figure, across its entire footprint, every two years and notes an expectation that there are no material differences year-on-year. In 2022, reflecting the most recent analysis, 17% of water was sourced from High or Extremely High Baseline Water Stress regions.

This analysis is considered a broad high-level regional analysis and may not represent the true level of stress on a source locally, nor does it take into account management of sources by groundwater conservation districts, river basin commissions, or other local, state, and federal agencies. Sites that are more prone to water scarcity are monitored and addressed on an individual basis. For more information on how we conducted this analysis and what comprises this figure, see the Promoting Sustainable Water Sourcing section of the [2022 ESG Report](#).

Volume of recycled water delivered to customers

SASB: IF-WU-440a.2

In 2023, we recycled to the groundwater recharge via spray irrigation, drip irrigation and subsurface infiltration approximately 695.7 million gallons of treated wastewater. This is 6.1% of the total wastewater treated in 2023, with the remainder safely discharged to streams, rivers, or lakes. Essential will continue to evaluate and examine potential opportunities and technologies to recycle water and reuse wastewater.

Network Resiliency & Impacts of Climate Change

	2023	2022	2021
<p>Wastewater treatment capacity located in 100-year flood zones SASB: IF-WU-450a.1</p>	<p>Essential calculates this figure, across its entire footprint, every two years and notes an expectation that there are no material differences year-on-year. In 2022, reflecting the most recent analysis, 49% of wastewater treatment capacity was located in 100-year flood zones.</p> <p>This analysis is considered a broad high-level analysis and may not represent the true level of risk for a facility. Sites more prone to flood risk are monitored and addressed individually. For more information on how we conducted this analysis and what comprises this figure, see the Flood Resiliency portion of the Minimizing Untreated Wastewater Discharge section of the 2022 ESG Report.</p>		
<p>1) Number and (2) volume of sanitary sewer overflows (SSO)* (gallons), (3) percentage of volume recovered** SASB: IF-WU-450a.2</p>	<p>See Wastewater-Related Discharge Event table on the following page.</p> <p>See Wastewater-Related Discharge Event table on the following page.</p> <p>See Wastewater-Related Discharge Event table on the following page.</p>		
<p>1) Number of unplanned service disruptions, and (2) number of unplanned service disruptions normalized per 100 miles of main*** SASB: IF-WU-450a.3</p>	<p>3,018</p> <p>20.9</p>	<p>2,624</p> <p>18.4</p>	<p>3,135</p> <p>19.0</p>

**Precipitation events are associated with almost all the SSO volume. At Essential, we capture and treat >99.99% of the wastewater from our customers despite challenges arising from heavy storms, hurricanes, clogs, and blocks.

***These year-on-year changes are primarily driven by better data collection and data quality that we have been working towards in recent years, across each of our states. The company is focusing efforts on more comprehensive disruption tracking and training which increase our tracking numbers in the near term while providing us the opportunity in the long term to focus attention and remediation measures to reduce this impact to our customers. These efforts include the implementation of a new internal reporting system that Essential believes, in future years, will contribute to reported figures being more consistent and comparable year-on-year. Essential, at this time, is unable to disclose the number of customers affected, by duration category, as per SASB guidance. The company hopes to provide this in future years.

Wastewater-related Discharge Event Data*

	2023	2022	2021
# Wastewater-related discharge events	250	149	183
# SSO Events	199	86	124
Total volume of wastewater treated (gallons)	11.4 million	11.2 billion	11.1 billion
Wastewater-related event volume (gallons)	2.4 million	9.2 million	5.7 million
SSO Volume (gallons)	1.9 million	2.0 million	0.4 million
% Volume of wastewater-related discharge events related to precipitation	30.8%	68.2%	76.9%
% Unanticipated plant bypass by volume	6.4%	77.3%	92.3%
% SSO by volume	77.1%	22.2%	6.8%
% Plant spill	16.4%	0.5%	0.9%
% Wastewater volume that is fully treated	99.98%	99.98%	99.99%
Miles of system	2,556	2,678	2,552
# SSOs/100 miles of system	7.8	3.2	4.9

*In 2022, we experienced a significant increase in SSO volume. This was driven by one location where we observed 1.5-million-gallons spread out across three successive events driven by unusual weather patterns. This SSO volume, in turn, drove higher wastewater-related event volumes. In 2023, SSOs modestly declined but remained elevated, versus historical levels. During the year, there was also a significant decrease in unanticipated plant bypass volumes. The net effect of these factors led to a significant decline in 2023 wastewater-related event volumes, even below historical levels. These drivers, in every year of operation, are heavily influenced by weather conditions and precipitation events. Still, Essential is undertaking capital upgrades to mitigate further risk of wastewater-related events and continue modernizing its infrastructure. More information about how Essential minimizes untreated wastewater discharge can be found within our [2022 ESG Report](#).

GAS DISTRIBUTION BUSINESS

Energy Affordability and Access*

	2023	2022	2021
	\$8.80	\$14.49	\$10.41
Average retail gas rate per MMBtu for (1) residential, (2) commercial, (3) industrial customers, and (4) transportation services only	\$7.42	\$12.16	\$8.55
SASB: IF-GU-240a.1	\$7.15	\$11.96	\$8.37
	\$1.68	\$1.87	\$1.74
Typical monthly gas bill for (1) 50 MMBtu and (2) 100 MMBtu of gas delivered per year	\$50.01	\$72.32	\$57.35
SASB: IF-GU-240a.2	\$85.78	\$131.17	\$101.22
Number of residential customer gas disconnections for non-payment, percentage reconnected within 30 days**	27,238	18,827	27,583
SASB: IF-GU-240a.3	54.3%	57.4%	63.2%

*Gas rate data disclosed pertains only to Peoples Natural Gas Division of Peoples Natural Gas Company LLC and excludes Peoples Gas Division of Peoples Natural Gas Company LLC, as well as the legal entity of Delta Natural Gas. Peoples Natural Gas Division represents over 85% of all gas customers and is deemed materially representative for disclosure purposes.

**Given the unique circumstances surrounding the COVID-19 pandemic, 2021 residential customer gas disconnection data is not comparable to subsequent years. Essential observed moratoriums on disconnections consistent with public utility commission guidance.

End-Use Efficiency

	2023	2022	2021
Percentage of gas utility revenues from rate structures that (1) are decoupled or (2) contain a lost revenue adjustment mechanism (LRAM)	29%	28%	29%
SASB: IF-GU-420a.1	0.0%	0.0%	0.0%

Customer gas savings from efficiency measures by market

SASB: IF-GU-420a.2

Across our state operations, rate structures are designed to promote efficiency through a fixed cost customer charge and a volumetric charge which varies every month based on usage. While there is not a formal customer efficiency and conservation program and this precludes a calculation of gas savings by market, Essential proactively educates our customers on the importance of energy efficiency. For more information, see the Helping Our Customers Conserve Gas section of the [2022 ESG Report](#).

Integrity of Gas Delivery Infrastructure

	2023	2022	2021
Number of (1) reportable pipeline incidents, (2) Corrective Action Orders (CAO), and (3) Notices of Probable Violation (NOPV)	1	3	2
SASB: IF-GU-540a.1	0	0	0
Percentage of distribution pipeline that is (1) cast and/or wrought iron and (2) unprotected steel	0.39%	0.45%	0.48%
SASB: IF-GU-540a.2	17.7%	17.8%	18.6%
Percentage of gas (1) transmission and (2) distribution pipelines inspected	100%	100%	100%
SASB: IF-GU-540a.3	50.8%	42.9%	40.3%

EMPLOYEES

Essential Utilities

Health and Safety*

	2023	2022	2021
Lost Time/Restricted Time Rate (per 200,000 hours worked) (also regarded as DART Rate)	1.2	1.2	1.2
Employee-Responsible Motor Vehicle Accident (RVA) Rate**	2.4	2.2	2.9
Fatalities	0	0	0

*Data pertains only to full-time Essential employees

**Number of RVAs per one million miles driven

Human Capital Management

	Retirements	Voluntary Turnover (Excluding Retirements)	Involuntary Turnover
Executive/Sr. Manager	0.1%	0.0%	0.1%
Mid-level Manager	0.4%	0.9%	0.2%
Professional	0.3%	1.2%	0.2%
All Others	1.2%	5.5%	2.4%
Total	2.0%	7.6%	2.9%

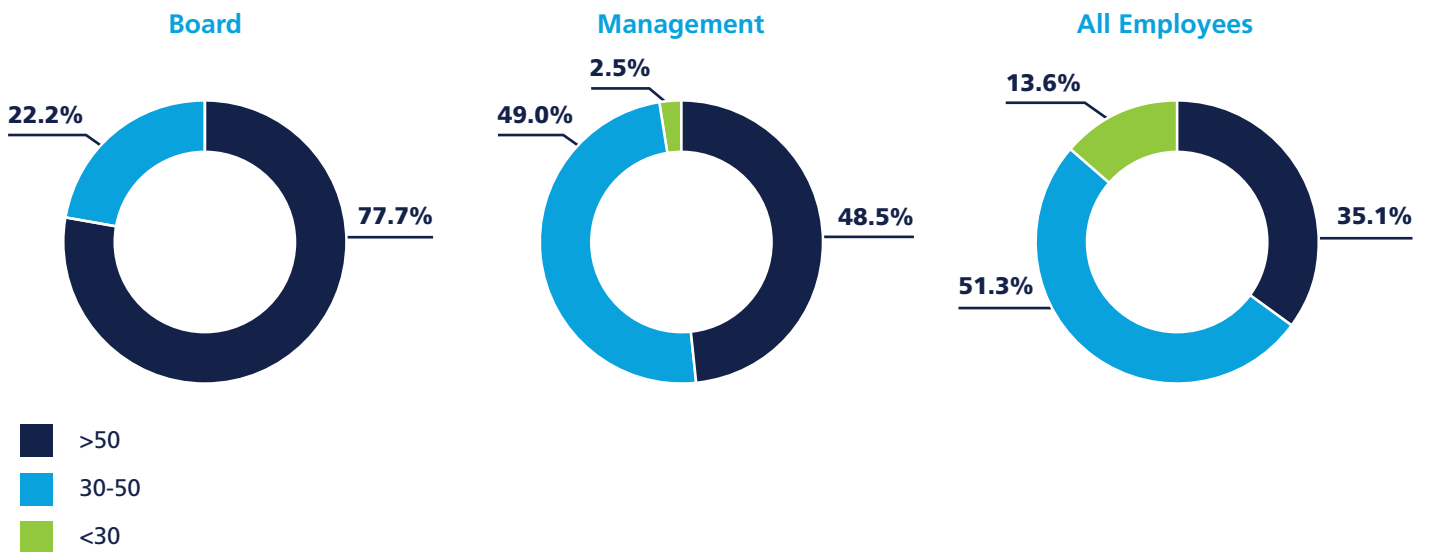
Diversity, Equity and Inclusion

EEO-1 Summary Table*

Essential has published its full, unmodified 2023 EEO-1 summary table here. As of year-end 2023, employees of color comprise 17.5% of Essential's workforce. This represents a 26% increase in diverse employees over the preceding three years and an alignment with the demographic make-up of our customer base.

*Gender and racial diversity data included in this report is as of [12/31/22. Essential's [EEO-1 Report](#), included in this report is as of 12/31/22] TBD.

2023 Age Diversity

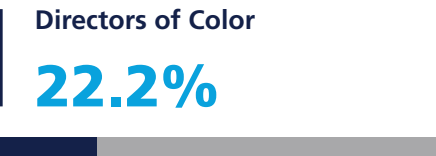


GOVERNANCE

Polices

- [Code of Ethical Business Conduct](#)
- [Human Rights Policy](#)
- [Human Right to Water Policy](#)
- [Labor Rights Policy](#)
- [Political Spending Policy](#)
- [Equal Employment Opportunity & Anti-Harassment](#)
- [Conflict of Interest Policy](#)
- [Sustainability and Environmental Policy](#)
- [Supplier Code of Conduct](#)

Board Composition



Best Practices

- Shareholder engagement program
- Diverse board
- Board oversight of ESG and cybersecurity management
- Stock ownership guidelines for executive officers and directors
- Continuing education for directors and orienting for new directors
- 15 year term limit for directors elected after 2015

Independence

- Lead Independent Director with delineated responsibilities
- 100% standing Board Committee membership independence

Accountability

- All directors elected annually
- Annual Board and Committee self-evaluation
- Annual evaluation of CEO by independent directors
- Clawback policy
- Resignation policy

Shareholder Rights

- No poison pill
- One-share, one-vote
- No dual-class common stock
- Right to call special meeting
- No cumulative voting

Forward-Looking Statements

This report contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, which generally include words such as “believes,” “expects,” “intends,” “anticipates,” “estimates” and similar expressions. The company can give no assurance that any actual or future results or events discussed in these statements will be achieved. Any forward-looking statements represent its views only as of today and should not be relied upon as representing its views as of any subsequent date. Readers are cautioned that such forward-looking statements are subject to a variety of risks and uncertainties that could cause the company’s actual results to differ materially from the statements contained in this report. Such forward-looking statements include, but are not limited to, statements relating to the capital to be invested by the water, wastewater, and gas distribution divisions of the company. There are important factors that could cause actual results to differ materially from those expressed or implied by such forward-looking statements including the factors discussed in our Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q, which is filed with the Securities and Exchange Commission. For more information regarding risks and uncertainties associated with the company’s business, please refer to the company’s annual, quarterly and other SEC filings. The company is not under any obligation — and expressly disclaims any such obligation — to update or alter its forward-looking statements whether as a result of new information, future events or otherwise.



Essential™

Providing natural resources for life.

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