

SUSTAINABILITY
REPORT 2020

POWERING A SUSTAINABLE FUTURE

CEO LETTER



WE ARE A PURPOSE-DRIVEN COMPANY—WE AIM TO BE THE PREMIER INTEGRATED, COMPETITIVE POWER COMPANY THAT CONSISTENTLY DELIVERS RESULTS FOR OUR CUSTOMERS, SHAREHOLDERS, EMPLOYEES AND COMMUNITIES.

Calpine was founded nearly 40 years ago on principles of sustainability, and we remain committed to them today. To us, sustainability is broad in scope, covering safety, diversity and inclusion, corporate governance, risk management, and, of course, the environment. Our commitment to sustainability is not in response to the latest trends, but is woven throughout our past and present and will be a driver for the future.

We are a purpose-driven company—we aim to be the premier integrated, competitive power company that consistently delivers results for our customers, shareholders, employees and communities. Our assets and our employees are critical to enabling our country and our customers to navigate the energy transition to a lower carbon future. We believe that competitive markets and a commitment to environmental stewardship can deliver a brighter energy future for all Americans. And, we plan to do our part.

From our inception, we've been focused on environmental stewardship. Calpine's founders in 1984 wanted to modernize California's aging fleet of coal plants and bring clean, reliable power to the state of California. Over the following 20 years, Calpine rose to that challenge and the added challenge of the California energy crisis, building 15 natural gas-fired power plants and managing California's largest geothermal energy resource to ensure that the natural resource will last for decades.

Today with the energy transition, the commitment continues. Many state and now federal policies have been and continue to be introduced with the aim of reducing economy-wide GHG emissions. Some of these policies are focused more narrowly—like on power generation or transportation—while others are truly economy wide. It has become widely recognized that one of the most important tools in pursuit of decarbonization is electrification of many other sectors of the economy such as transportation, industry and home heating. Electrification of the economy means growth in power demand and increases the importance of electric reliability.

Over the last 18 months, several widely respected reports⁽¹⁾ have been completed and released that point to the fact that penetration of renewables and energy storage will increase dramatically and, when combined with electrification, will drive decarbonization. The studies have determined that cost-effective pathways to deep decarbonization require that modern natural gas power plants continue to operate for decades to come. Although the use of carbon capture and sequestration and possibly the increased combustion of hydrogen in these plants can help with carbon emission levels, these plants and the combustion of some natural gas will continue to be necessary, albeit at much lower capacity factors than today.

Over time, as renewables continue to penetrate, our gas units will run less and less—and our company's carbon emissions will fall dramatically. But when there is a Nor'easter in New England, a low hydro year in California, or a cold, dark week in Texas, our plants will be key to making an ultra-low carbon, electrified economy work for all Americans. And specifically for Californians, our Geysers geothermal assets will continue to produce virtually GHG-free electricity at the same dependable rate 24 hours per day, 7 days per week, year after year.

We live by our [ASPIRE Values](#), which demand of us that we act with **A**ccountability, put **S**afety first in everything we do, work with a **P**assion, treat our employees, contractors, customers, and communities with **I**ntegrity and **R**espect, and honor our diverse backgrounds and experiences with **E**sprit de Corps. In the pages that follow, you will find that our commitment to our ASPIRE values, and consequently to sustainable business practices, has resulted in significant achievements.

⁽¹⁾e.g., Williams, et. al., Carbon-Neutral Pathways for the United States, AGU Advances, 2, e2020AV000284 (2021)

In 2020, we donated more than \$3 million to charitable organizations and in support of community events. One of our retail brands was selected by CDP, the global climate reporting non-profit, as its only accredited retail supply partner in North America. Our subsidiary, Geysers Power Company, LLC, closed on a \$1.1-billion Climate Bond-certified financing. We also continued to demonstrate operational excellence. Notwithstanding the challenges of COVID-19 in 2020, we completed all of our planned outages safely and successfully, and Calpine's average availability for 2020 was 87.54%. In 2020, our company achieved our best safety performance year ever with just 10 employee recordable injuries (our previous best was 13 in 2019). In response to the social unrest around the country in 2020, we also stepped up our Diversity & Inclusion efforts by hosting listening sessions with employees and one-on-one meetings with our Chief Legal Officer and myself. Through it all, our commitment to our employees never wavered.

The publication of Calpine's inaugural sustainability report comes during a challenging time. During 2020, as a result of COVID-19, we had to rethink our processes for keeping our employees and contractors safe, while never losing sight of the fact that our business is to provide essential, reliable power to approximately 20 million homes and businesses in competitive power markets from Maine to California. And importantly, as the U.S. now moves aggressively to mitigate emissions of carbon to address climate change, we see Calpine as a key part of the solution. As you will see in this report, we believe our success was and will continue to be due to our fundamental philosophy that we must use all resources—natural, human, and capital—in a sustainable manner.

While this is Calpine's inaugural sustainability report, we are proud of our accomplishments thus far, and we look forward to building on them in 2021.

Sincerely,

THAD HILL

PRESIDENT AND CHIEF EXECUTIVE OFFICER (CEO)



2020 PERFORMANCE HIGHLIGHTS

During a year of unprecedented circumstances, we are proud to report that our teams maintained our high performance expectations and gave back to the communities in which we operate.



GEOGRAPHIC DIVERSITY OF GENERATION



\$8.8+ BILLION IN REVENUES

76 PLANTS IN OPERATION INCLUDING ONE UNDER CONSTRUCTION

111+ MILLION MEGAWATT-HOURS (MWh) GENERATED

2,300 FULL-TIME EMPLOYEES

266,055 RESIDENTIAL RETAIL CUSTOMERS

15,321 COMMERCIAL AND INDUSTRIAL RETAIL CUSTOMERS

900+ MW OF BATTERY STORAGE UNDER DEVELOPMENT

\$1.6+ MILLION DONATED TO COVID-19 RELIEF FUNDS

CDP RECOGNIZED CALPINE ENERGY SOLUTIONS AS A SILVER-ACCREDITED RENEWABLE ENERGY PARTNER IN NORTH AMERICA

GEYSERS POWER COMPANY, LLC CLOSED ON \$1.1 BILLION CLIMATE BONDS-CERTIFIED FINANCING

TOTAL RECORDABLE INCIDENT RATE (TRIR) FOR EMPLOYEES OF 0.44

ABOUT CALPINE

Calpine Corporation is America's largest generator of electricity from natural gas and geothermal resources with operations in competitive power markets. We own and operate primarily natural gas-fired and geothermal power plants in North America and have a significant presence in major competitive wholesale and retail power markets including California, Texas, and the Northeast and mid-Atlantic regions of the U.S.

Our fleet of 76 power plants, including one under construction, represents nearly 26,000 megawatts (MW) of generation capacity and uses advanced technologies to generate power in a low-carbon and environmentally responsible manner. We are uniquely positioned to benefit from the secular trends affecting our industry, including the abundant and affordable supply of clean natural gas, environmental regulation, aging infrastructure across the power generation sector, and the increasing need for dispatchable power plants to successfully integrate intermittent renewables into the grid.

Through wholesale power operations and our retail businesses, we serve customers in 22 states, Canada, and Mexico. We sell power, steam, capacity, renewable energy credits, and ancillary services to our wholesale customers, which include utilities, independent electric system operators, industrial companies, retail power providers, municipalities, community choice aggregators, and other governmental entities and power marketers. Additionally, through our retail brands, Calpine Energy Solutions and Champion Energy Services (including North American Power), we market retail energy and renewable, zero-carbon products to commercial, industrial, governmental, and residential customers.

Our mission is to be the premier competitive power company. Success for our investors, customers, and employees means that we:

BE THE BEST POWER PLANT OPERATOR ON THE PLANET

EXCEL AS A CUSTOMER-CENTRIC BUSINESS—BOTH WHOLESALE AND RETAIL

LEAD THE INDUSTRY IN ENVIRONMENTAL STEWARDSHIP BY STRENGTHENING OUR COMMITMENT TO DELIVERING RELIABLE AND SUSTAINABLE ENERGY SOLUTIONS

LIVE BY OUR VALUES





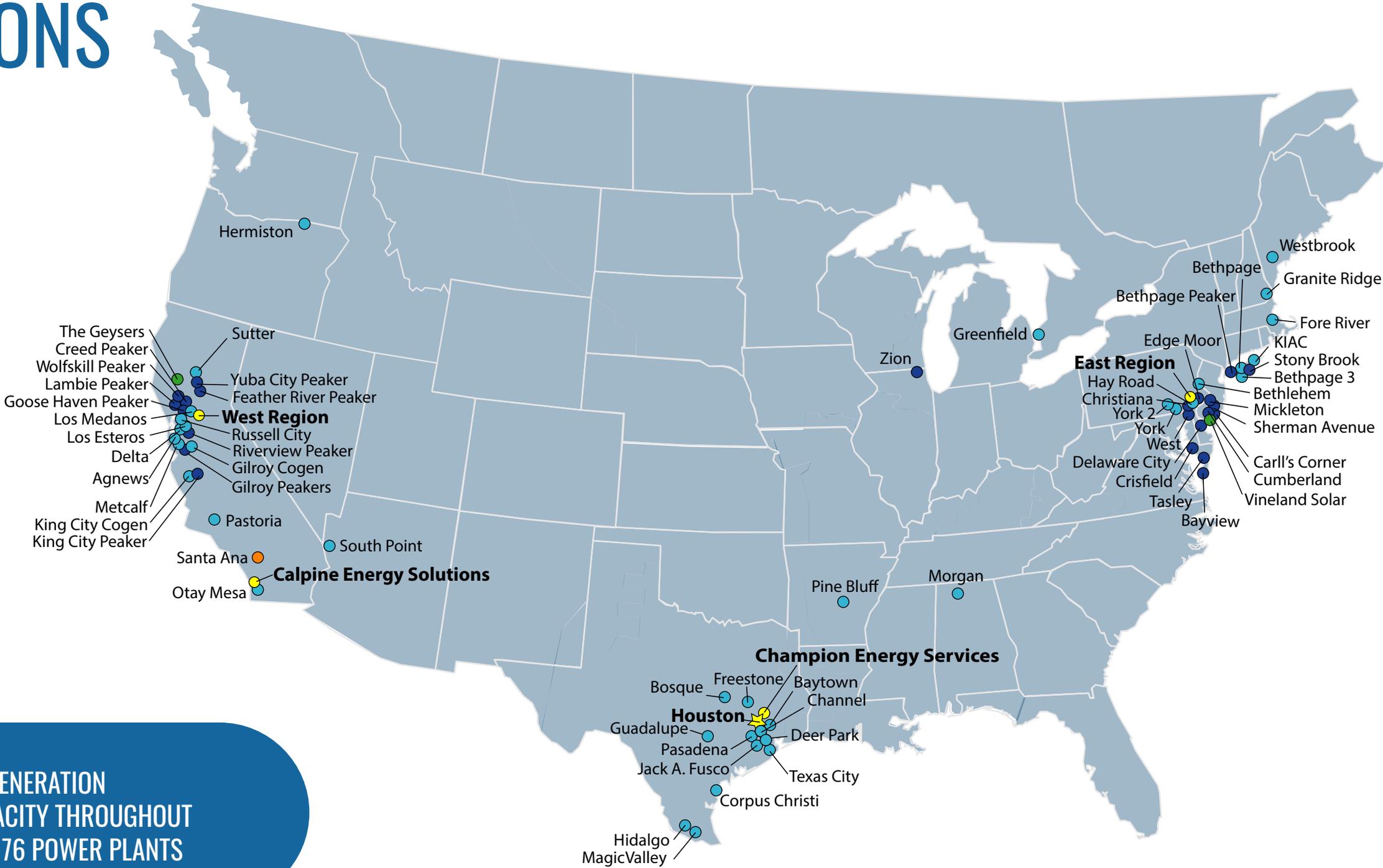
GENERATED ELECTRICITY

		2018	2019	2020
Total electricity generated	SASB IF-EU-000.D	98,035,484 MWhs	103,088,649 MWhs	111,159,598 MWhs
Percentage of generation capacity by major energy source:				
Combined Cycle Cogeneration	SASB IF-EU-000.D	24% (6,394 MW)	24% (6,378 MW)	23% (5,925 MW)
Renewables		3% (729 MW)	3% (729 MW)	3% (729 MW)
Simple Cycle/Other		11% (2,868 MW)	9% (2,365 MW)	9% (2,365 MW)
Combined Cycle Non-Cogeneration		62% (16,687 MW)	64% (16,563 MW)	65% (16,848 MW)
Percentage of electricity generated in regulated markets		5,841,512 MWhs produced in regulated markets; 6% of total	4,293,913 MWhs produced in regulated markets; 4% of total	4,048,407 MWhs produced in regulated markets; 4% of total
Total wholesale electricity purchased	SASB IF-EU-000.E	60,868,259 MWhs	60,146,961 MWhs	55,493,140 MWhs

OUR LOCATIONS

- Renewable
- Combined Cycle
- Simple Cycle / Other
- Battery Storage
- ★ Headquarters
- Office

As of February 2021



26,000 MW OF GENERATION CAPACITY THROUGHOUT OUR 76 POWER PLANTS



OUR VALUES

Calpine's business is guided by our [ASPIRE Values](#). We ASPIRE to effectively perform every task, action, pursuit, and decision with these values in mind.

A	ACCOUNTABILITY	We embrace our individual responsibility and perform to the best of our ability. We make sure we understand what is expected for the task at hand and execute on it. We always follow the applicable laws, regulations, policies, and procedures.
S	SAFETY	We put safety first in everything we do. We realize our well-being and that of our colleagues is the responsibility of each one of us and is critical to Calpine's success. We investigate, communicate, and proactively manage any unsafe conditions.
P	PASSION	We work with passion for our business, passion for our community, and passion for the environment. Passion to us means a sense of urgency and focus.
I	INTEGRITY	In all that we do, we demonstrate our integrity by being true to our word. We follow through on commitments to our customers, colleagues, suppliers, investors, and communities.
R	RESPECT	We cultivate a respectful, nurturing, and diverse work environment characterized by open, honest, and direct communications. We honor receiving and discussing other points of view, always without fear of reprimand.
E	ESPRIT DE CORPS	We work with a collective sense of pride and honor in everything that we do. We value our diverse backgrounds and experiences. We work as an inclusive team where we share, support, and encourage each other to achieve our common goals. We encourage, support, and mentor our colleagues to help them attain personal achievement.



SUSTAINABILITY AT CALPINE

From the beginning, sustainability has been part of our ethos. We have invested in clean power generation to become a recognized leader in developing, constructing, owning, and operating an environmentally responsible portfolio of flexible and reliable power plants. We consistently support state and federal efforts to reduce GHG emissions.

WE HAVE INVESTED IN CLEAN POWER GENERATION TO BECOME A RECOGNIZED LEADER IN DEVELOPING, CONSTRUCTING, OWNING, AND OPERATING AN ENVIRONMENTALLY RESPONSIBLE PORTFOLIO OF FLEXIBLE AND RELIABLE POWER PLANTS.

With this, our inaugural sustainability report, we took the opportunity to analyze our business portfolio through an environmental, social, and governance (ESG) lens. We engaged a third party to conduct a materiality assessment to identify topics of importance to our business and our stakeholders, and to assess the potential strategic and operational opportunities and risks. This assessment included a three-step process of identification, prioritization, and validation, and serves as a foundation for our reporting strategy. Based on research and discussion, we have identified the following ESG topics as significant to our business:

ENVIRONMENTAL

- Air Quality
- Climate Strategy
- Greenhouse Gas Emissions
- Water Management

SOCIAL

- Community Relations
- Corporate Philanthropy
- Diversity and Inclusion
- Emergency Preparedness and Response
- Employee Relations
- Occupational Health and Safety

GOVERNANCE

- Business Ethics
- Corporate Governance
- Cybersecurity
- Government Relations and Public Policy
- Risk Management
- Supply Chain Management
- Technology Adoption

CALPINE'S RESPONSE TO THE COVID-19 PANDEMIC



Calpine's primary goal in responding to the COVID-19 pandemic was to maintain the reliability of our electric supply while also protecting the health and safety of our employees, contractors, and customers. As a provider of essential electrical power, Calpine maintains a robust set of policies and procedures to prevent, prepare for, and respond to emergencies such as wildfires, hurricanes, winter storms, cyber events, and pandemics. However, when Calpine assessed our policies and procedures against the unprecedented COVID-19 pandemic, we realized we needed more than a standard response. Our basic pandemic plans were quickly transformed into robust checklists, tactical implementation plans, decision trees, and nearly daily monitoring reports to help our executive team's decision-making. The foundations of our business continuity program positioned Calpine well to respond. The success of our COVID-19 response involved careful coordination among all of Calpine's business units: human resources, legal, supply chain, facilities, safety, IT, corporate communications, retail, power operations, warehouse management, and logistics. Calpine demonstrated that maintaining a robust business continuity program with diverse teams and strong relationships sets the foundation for an effective and coordinated disaster response no matter the challenge.

In February, well before the Centers for Disease Control and Prevention declared a pandemic, Calpine's business continuity team began planning for various impact scenarios. We engaged our safety, HR, IT, supply chain, and operational teams early to begin procuring masks, cleaning products, and temperature-scanning equipment.

We put policies and procedures in place for plant operations and our offices, including enhanced cleaning protocols, social distancing requirements, and provided personal protective equipment. Our employees lived up to our [ASPIRE Value](#) of Esprit de Corps by prioritizing safety and well-being in all situations.

In the midst of Calpine's pandemic response, the company was also challenged by active hurricane and wildfire seasons—the most active on record. For one of the hurricane events, approximately 100 Calpine personnel deployed safely to a secondary operating center with no COVID-19 infections. The teams weathered these three challenges with courage and resilience.

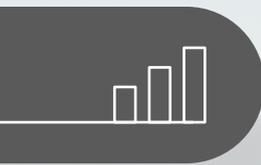
Our employees' well-being outside of the workplace is important to us. Consistent with the Coronavirus Aid, Relief and Economic Security Act and the Families First Act, we modified our benefit plans to offer financial resources and healthcare services to employees and their families. We also allowed employees to cash out up to 40 hours of paid time-off (PTO) for coronavirus-related hardship. We offered coronavirus testing for every employee who wanted it. We enhanced our PTO program, allowing employees who were unable to work remotely to restore up to 80 hours of PTO under certain circumstances and where the employees were required to quarantine by a doctor or governmental agency.

We also provided support for our customers who experienced financial impacts during the COVID-19 pandemic. Calpine Energy Solutions adjusted scheduled quantities of energy and provided payment flexibility, allowing customers to continue to receive services while working through their operational and financial impacts. Champion Energy Services took several actions to provide economic relief to its customers in need, including allocating \$50,000 to a program to match donations from customers to defray the cost of electricity service. In addition to direct financial assistance for qualifying customers, Champion Energy Services offered deferred payment plans to any residential customer who requested one and temporarily suspended late fees to residential customers. Additionally, under a Texas Public Utility Commission order, Champion Energy Services suspended disconnections for qualifying residential customers through the end of August.

While safeguarding our workforce and providing for our customers, Calpine donated over \$1.6 million dollars to support COVID-19 relief efforts in 2020. These funds were distributed to local organizations in our East, West, and Texas regions. Calpine also matched over \$200,000 in employee donations for COVID-19 relief efforts through the Calpine Foundation.



ENVIRONMENT



ENVIRONMENTAL MANAGEMENT

We are one of the country's largest generators of electricity and among the cleanest. We achieve this through a fleet of modern, efficient power plants that use simple- and combined-cycle technologies to produce electricity fueled primarily by natural gas. Additionally, we are the nation's largest operator of renewable geothermal power plants. We drive efficiency in our fleet further through cogeneration technology, which uses the waste heat from our power plants as thermal energy in a variety of industrial applications, displacing higher GHG-emitting sources.

Our facilities incorporate technologies designed to reduce the environmental impacts of our operations by reducing emissions of pollution to the air and by reducing consumption of fresh water for power plant cooling. This means that our customers may rely on the electricity we produce to reduce their carbon footprint and achieve their emissions reduction goals.

At Calpine, our commitment to excellent environmental performance is an [ASPIRE Value](#). Our Safety & Health and Environment Policy establishes roles, responsibilities, and accountabilities for the environmental, health, and safety aspects of our operations. This policy is supported by systems designed to ensure that our environment, health, and safety (EHS) program remains focused on regulatory compliance and on making us the best power plant operator on the planet. We utilize an EHS Compliance Management System to aid all personnel, from senior management to plant operators, to meet or exceed our environmental responsibilities. We conduct periodic reviews to evaluate and continuously improve our EHS performance.

ENVIRONMENTAL MANAGEMENT

	REFERENCE		2018	2019	2020
Environmental fines and penalties	GRI 307-1	Environmental Management	0	0	0



CLIMATE STRATEGY

From the company's inception, Calpine has been a proponent of cleaner energy and an industry leader in moving to newer, cleaner, natural gas combined-cycle units. We support the goals of the Paris Agreement and have actively supported state and federal policies to achieve reductions of GHG emissions. We have supported California's adoption and implementation of its economy-wide Cap-and-Trade Program as well as states involved in the Regional Greenhouse Gas Initiative program.

Beyond reducing emissions from electricity generation, numerous studies conclude that deep electrification of other sectors—transportation, industrial operations, and home and commercial heating—is a critical step needed to achieve decarbonization goals. We believe that the most effective way to drive smart choices is a national, economy-wide price on carbon, which will spur the competition and innovation needed to achieve decarbonization objectives in the most cost-effective manner.

WHAT WE STAND FOR



Economy-Wide Change to Limit Emissions

Calpine believes in an economy-wide approach to tackling climate change. To rapidly expand the role of intermittent sources like solar and wind, we must have backup capacity against blackouts and spikes in electricity costs that would make electric vehicles uneconomical, sap public support for renewable energy, and threaten our progress toward the nation's climate goals. Our nation's cleanest and most energy-efficient gas-fired power plants are ready to fill that need.



A Long-Overdue Price on Carbon

Adding a price on carbon creates a national, economy-wide carbon strategy which will spur competitive markets to produce the most cost-effective and environmentally responsible solutions. We believe a market-based mechanism such as carbon pricing is necessary to ensure reliability and competitiveness within the marketplace.



Widespread Electrification

Aggressive carbon emissions reduction requires sweeping electrification of sectors like transportation, which replaced power generation as the top source of emissions in 2016. We'll need to double or even triple the nation's electric generating capacity to run our cars and trucks and heat our homes and offices.



Acceleration of Renewables

Americans should not have to pick between reliable and affordable clean energy. We are committed to working on innovative solutions that will accelerate the country's transition to clean energy. We operate the world's largest geothermal facility and have invested in cutting-edge storage solutions to keep the power grid up and running during peak periods of use.



Carbon Capture and Sequestration

Calpine is a champion for carbon capture and sequestration (CCUS) and supports policies that incentivize CCUS technology.



Support of the Paris Climate Agreement

We are making significant investments in innovation to encourage widespread adoption of clean and renewable energy nationwide. A net-zero future requires global cooperation starting at home, and that is why we back the Paris Climate Accord.

Learn more about our commitment to addressing climate change by visiting [CalpineActsOnClimate.com](https://www.calpine.com/acts-on-climate).

Our fleet of efficient, gas-fired power plants has helped maintain the reliability of the electricity grid as higher-emitting generation capacity (predominantly coal) has been retired and increasing quantities of intermittent renewable energy are delivered to the grid. Gas-fired generation produces significantly lower GHG emissions than coal-fired generation for every MWh generated. Due to market forces and increasing environmental requirements for coal-fired generation, natural gas is expected to remain the predominant fossil generation resource over the coming decades.

Renewable generation will continue to be added to the grid driven by both jurisdictional mandates (e.g., renewables portfolio standards) and consumer demand. The addition of significant energy storage capacity will enable greater reliance upon intermittent renewable resources, such as solar and wind. Although the trends driving increasing penetration of renewables and addition of battery storage are expected to continue, existing gas-fired generation capacity will be needed for many years to come and may even need to be expanded in some regions as demand for electricity increases as other sectors seek to decarbonize.

Our fleet of flexible and efficient gas-fired power plants will continue to support the integration of renewables and the electrification of other sectors, enabling significant GHG reductions both within and beyond the electricity sector. Meanwhile, we will continue to implement efficiency improvements at our plants and continue to participate in research and demonstration projects for carbon capture technology.

We also support policies designed to reduce emissions of methane from natural gas production, processing, and distribution to assure that the upstream lifecycle emissions associated with natural gas-fired generation are reduced.

OUR FLEET OF FLEXIBLE AND EFFICIENT GAS-FIRED POWER PLANTS WILL CONTINUE TO SUPPORT THE INTEGRATION OF RENEWABLES AND THE ELECTRIFICATION OF OTHER SECTORS, ENABLING SIGNIFICANT GHG REDUCTIONS BOTH WITHIN AND BEYOND THE ELECTRICITY SECTOR.

DEFENDING CLEANER EMISSIONS

Reflecting our commitment to cleaner generation, Calpine has long been a leading voice supporting state and federal policies to achieve reductions in emissions that contribute to climate change, asthma, heart and lung disease, and developmental disorders, including the following examples:

- Calpine was the only company to submit a brief to the Supreme Court in *Massachusetts v. EPA*, where it argued that the Clean Air Act authorizes the U.S. Environmental Protection Agency (EPA) to regulate GHG emissions.
- In *Utility Air Regulatory Group v. EPA*, a case at the Supreme Court challenging the USEPA's GHG-permitting regulations, we submitted a brief describing our experience obtaining the first federal air permit to include GHG limits, which helped preserve the USEPA's authority to regulate GHG emissions from large sources.
- In *EPA v. EME Homer City Generation*, we supported and helped defend the USEPA's Cross-State Air Pollution Rule, which limits interstate air pollution from power plants and has helped displace coal as the predominant fossil generation resource.
- We continue to defend the USEPA's Mercury and Air Toxics Standards for coal- and oil-fired power plants, which require reductions in toxic air pollutants and have also produced significant reductions in emissions of criteria pollutants and GHGs.
- Calpine has, along with other power companies, challenged the USEPA's and the National Highway Traffic Safety Administration's rules weakening federal GHG and fuel economy standards for cars and trucks and barring California and other states from implementing their more stringent tailpipe GHG and zero-emission vehicle standards.

GREENHOUSE GAS EMISSIONS

In 2010, our Russell City plant was the first power plant in the U.S. to receive a federal air permit that limited its GHG emissions. We did this voluntarily, before it was required by federal law.

Calpine's power plants are designed to use natural gas efficiently. The more efficiently our plants run, the lower the carbon intensity of the electricity we produce. We continually optimize and modernize our assets to ensure our fleet meets future market demand in a responsible manner. This commitment has resulted in Calpine having one of the lowest carbon intensities of the electricity it delivers to its customers of any power company. We also meet our regulatory qualifications for RPS in all of the markets we serve.

CALPINE'S POWER PLANTS ARE DESIGNED TO USE NATURAL GAS EFFICIENTLY. THE MORE EFFICIENTLY OUR PLANTS RUN, THE LOWER THE CARBON INTENSITY OF THE ELECTRICITY WE PRODUCE.

GREENHOUSE GAS (GHG) EMISSIONS AND CLIMATE CHANGE

	REFERENCE	2018	2019	2020
GHG emissions intensity (kgCO ₂ e / MWh _{net})	GRI 305-4	412	405	413
Gross global Scope 1 emissions (metric tons CO ₂ e) ²		39,902,248	41,232,720	45,511,748
Percentage of gross global Scope 1 emissions covered under emissions-limiting regulations	SASB IF-EU-110a.1	30%	27%	27%
Percentage of gross global Scope 1 emissions covered under emissions-reporting regulations		100%	100%	100%
Number of customers served in markets subject to renewable portfolio standards (RPS)	SASB IF-EU-110a.4	We meet our regulatory qualifications for RPS in all of the markets we serve.		
Scope 1 GHG emissions (metric tons CO ₂ e)	GRI 305-1	See above	See above	See above

²Year-over-year increase is the result of generation capacity (new and previously moth-balled) being added to Calpine's portfolio, including Calpine's South Point Energy Center and the York 2 Energy Center.





Calpine supports regulatory efforts to reduce upstream emissions of methane, a highly potent GHG, from the production of natural gas. Calpine is a founding member of the Natural Gas Supply Collaborative, a voluntary collaborative of natural gas purchasers that are promoting safe and responsible practices for natural gas supply. We are also implementing efforts in our own operations to minimize emissions of methane, including through optical gas imaging. Each year, we scan all exposed natural gas lines, valves, filters, heaters, vents, and instrumentation for gas leaks at all our facilities fueled by natural gas. Any significant leaks observed during the scan are immediately corrected. Calpine also has a rigorous program to monitor sulfur hexafluoride (SF₆), another highly potent GHG that is widely used as an insulator in electric switchgear.

Calpine's steam-adjusted GHG intensity and average implied heat rates are favorable when compared to the rate in the U.S. for all thermal generation (including coal/gas/oil) in the U.S., and also when compared to all natural gas generation in the U.S.

U.S. CO₂ EMISSIONS RATES FOR THE ELECTRIC POWER SECTOR

	2018	2019
Thermal Generation CO ₂ Rate (Mt / MWh)	0.71	0.67
Natural Gas Generation CO ₂ Rate (Mt / MWh)	0.42	0.41
Calpine CO ₂ Rate—Steam Adjusted (Mt / MWh) ^[3]	0.41	0.40

^[3]Calpine Steam Adjusted CO₂ rate and implied heat rate excludes fuel used to generate steam for industrial processes and not used to generate electricity.

IMPLIED HEAT RATE MMBTU/MWH

	2018	2019
U.S. Fleet of Natural Gas Generation	7.82	7.73
Calpine Fleet (Steam Adjusted) ^[4]	7.35	7.33

^[4]Calpine Steam Adjusted CO₂ rate and implied heat rate excludes fuel used to generate steam for industrial processes and not used to generate electricity.

COMPARISON TABLE^[1]

Calpine is a leader in its industry for its modern, clean, and efficient fleet. It compares favorably to its peers.

	2018				2019			
	Calpine	Peer 1	Peer 2	Peer 3	Calpine	Peer 1	Peer 2	Peer 3
Capacity Weighted Average Age in Years	16.2	40.3	38.7	29.0	17.2	41.3	39.7	28.6
CO ₂ (lbs / MWh) ^[2]	-	204%	211%	169%	-	195%	211%	158%
SO ₂ (lbs / MWh) ^[2]	-	23,333%	16,667%	16,667%	-	37,500%	37,500%	35,000%
NO _x (lbs / MWh) ^[2]	-	519%	714%	390%	-	530%	833%	455%

^[1]These comparisons are only to thermal assets and exclude geothermal and nuclear assets.

^[2]Emissions as a percentage greater than Calpine's emissions.

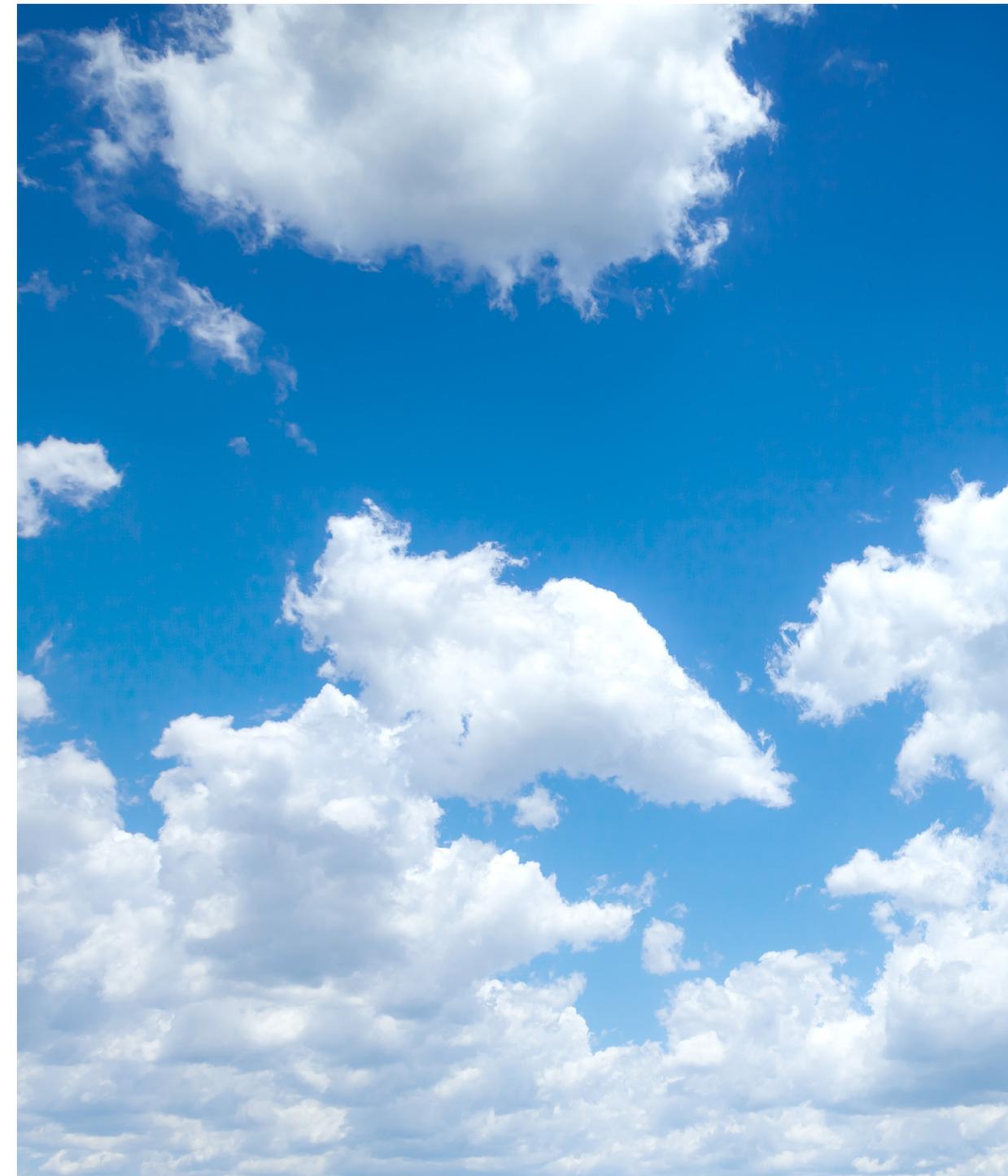
AIR QUALITY

Our fleet of efficient, clean-burning natural gas-fired power plants consumes significantly less fuel to generate power than conventional boiler/steam turbine power plants and emits fewer air pollutants per MWh of power produced as compared to coal-fired or oil-fired power plants.

Our plants are equipped with advanced emission controls, including low NO_x burners and selective catalytic reduction, which reduce emissions of NO_x to levels significantly lower than other forms of fossil-fired generation. In addition, we have implemented a program of proprietary operating procedures to reduce natural gas consumption and further lower air pollutant emissions per MWh of power generated. The low sulfur content of natural gas means that our natural gas fleet typically emits only trace amounts of sulfur compounds.

We are proud that our emissions of air pollutants have long been recognized as among the lowest of any major U.S. power producer.

OUR FLEET OF EFFICIENT, CLEAN-BURNING NATURAL GAS-FIRED POWER PLANTS CONSUMES SIGNIFICANTLY LESS FUEL TO GENERATE POWER THAN CONVENTIONAL BOILER/STEAM TURBINE POWER PLANTS AND EMITS FEWER AIR POLLUTANTS PER MWh OF POWER PRODUCED AS COMPARED TO COAL-FIRED OR OIL-FIRED POWER PLANTS.



AIR QUALITY MANAGEMENT

	REFERENCE	2018	2019	2020
Air emissions (metric tons) of the following pollutants:				
NO _x (excluding N ₂ O)	SASB IF-EU-120a.1 and GRI 305-7	6,201	5,937	6,012
SO _x	SASB IF-EU-120a.1 and GRI 305-7	386	217	229
Particulate matter (PM ₁₀) ^[1]	SASB IF-EU-120a.1 and GRI 305-7	1,335	1,245	1,335
Lead (Pb)	SASB IF-EU-120a.1	0.36	0.39	0.41
Mercury (Hg)	SASB IF-EU-120a.1	0.099	0.003	0.004

^[1]Totals for particulate matter emissions include data for combustion sources and exclude emissions from cooling towers.

AIR POLLUTANT EMISSION RATES—POUNDS OF POLLUTANT EMITTED PER MWH OF POWER GENERATED – 2019

Air Pollutants



● Average U.S. Coal-, Oil-, and Natural Gas-Fired Power Plant^[3] ● Calpine Natural Gas-Fired, Combined-Cycle Power Plant^[4]

^[2]The U.S. coal-, oil-, and natural gas-fired power plant air emissions of mercury compounds were obtained from the USEPA Toxics Release Inventory for 2019. Emission rates are based on 2019 emissions and net generation from U.S. Department of Energy's Electric Power Annual Report for 2019.

^[3]The average U.S. coal-, oil-, and natural gas-fired power plants' emission rates were obtained from the U.S. Department of Energy's Electric Power Annual Report for 2019. Emission rates are based on 2019 emissions and net generation. The U.S. Department of Energy has not yet released 2020 information.

^[4]Our natural gas-fired, combined-cycle power plant estimated emission rates are based on our 2019 emissions and power generation data from our natural gas-fired, combined-cycle power plants (excluding combined heat power plants) as measured under the USEPA reporting requirements.



WATER MANAGEMENT

We are committed to minimizing the impact of our operations on the water resources we share with our local communities. We have invested substantially in technologies and systems that reduce the effect of our operations on water resources. We achieve this through water-sourcing methods that conserve millions of gallons of cooling water daily. We use once-through cooling technology at only one of our older fleet locations. In our combined-cycle power plants, we use mechanical draft cooling towers, which use up to 90% less water than conventional once-through cooling systems. Additionally, some of our facilities are zero liquid discharge plants, meaning their discharge of waste cooling water is significantly minimized, further reducing their impact on the environment. The Geysers attempts to maximize its usage of recycled water to reduce demand from new sources. On average, the majority of the water re-injected into the steam reservoir at The Geysers comes from recycled sources.



CALPINE'S WATER MANAGEMENT STRATEGIES—NATURAL GAS FLEET

Recirculating Technology

The majority of our combined-cycle fleet uses recirculating cooling towers to provide cooling to the condensers that convert low-pressure steam back into water after extracting the useful energy from the steam.

Recycled Wastewater

We work with our communities across the country to minimize our impact on local fresh water supplies by utilizing recycled municipal wastewater where available for cooling of natural gas-fired power plants. In 11 of our operating natural gas-fired power plants equipped with cooling towers, we reuse treated water from municipal treatment systems for cooling. By reusing water in these cooling towers, we can avoid the usage of as much as 33 million gallons per day of valuable surface and/or groundwater for cooling.

Air-Cooled Condensers

Three of our power plants (Sutter Energy Center, Otay Mesa Energy Center, and Fore River Energy Center) employ air-cooled condensers for cooling. Air-cooled technology eliminates the need to use fresh water sources, such as groundwater or potable municipal water, to cool recirculating steam. Therefore, these three plants consume virtually no water for cooling purposes.

WATER MANAGEMENT^[1] (MEGALITERS)

	REFERENCE	2018	2019	2020
Total water withdrawal	GRI 303-3	86,012	84,012	90,808
Surface water		54,035	56,928	62,068
Groundwater		881	–	–
Seawater		5,744	4,603	4,307
Produced water		–	–	–
Third-party water		25,352	22,481	24,433
Percentage of total water withdrawal in a region of High or Extremely High Base Water Stress	SASB IF-EU-140a.1	25%	30%	32%

^[1]Totals for water withdrawal, discharge, and consumption include data from all 100 MW and larger production plants, excluding The Geysers per EIA disclosures. Water data from 2018 does not include data from our South Point Energy Center, as the location was mothballed in 2018 and did not report information to EIA for that year.



	REFERENCE	2018	2019	2020
Total water discharge	GRI 303-4	19,550	18,555	17,940
Surface water		9,821	10,435	9,601
Groundwater		118	-	-
Seawater		3,525	2,789	2,849
Produced water		-	-	-
Third-party water		6,086	5,331	5,490
Total water consumption	GRI 303-5	67,011	65,556	72,707
Surface water		44,018	46,450	52,278
Groundwater		1,691	-	-
Seawater		2,211	1,814	1,458
Produced water		-	-	-
Third-party water		19,091	17,292	18,971
Percentage of total water consumption in a region of High or Extremely High Base Water Stress	SASB IF-EU-140a.1	26%	31%	33%
Water injected into the steam field at The Geysers	-	34,987 megaliters	35,415 megaliters	30,113 megaliters

SPILLS

We have requirements and procedures in place to prevent operational spills. We track all events and perform incident investigations to prevent future occurrences. All spill and emergency response data is monitored as part of our Calpine Incident Collection System (CICS), an incident management and notification system that provides metrics to help us better analyze and understand our EHS trends.



EMERGENCY PREPAREDNESS AND RESPONSE

	2018	2019	2020
Number of Spills—Metric Events	0	0	0
Volume of Spills—Metric Events	0	0	0

THE GEYSERS

28,000 ACRES (45 SQUARE MILES)

319 STEAM WELLS

53 INJECTION WELLS^[1]

2 MILES (DEEPEST WELL)

13 OPERATING GEOTHERMAL PLANTS

725 MW (NET GENERATION CAPACITY)

99% LESS NO_x AND SO₂ EMISSIONS THAN THE AVERAGE U.S. COAL-, OIL-, AND NATURAL GAS-FIRED POWER PLANT

95% LESS CO₂ THAN THE AVERAGE U.S. COAL-, OIL-, AND NATURAL GAS-FIRED POWER PLANT^[2]



At The Geysers, located in the Mayacamas Mountains in Northern California, we use a natural, clean energy source—heat from the earth’s interior, called geothermal energy—to produce electricity. Calpine’s wholly-owned subsidiary, Geysers Power Company, LLC, owns and operates The Geysers. This facility is the largest complex of geothermal energy plants in the world. In 2020, The Geysers was responsible for approximately 34% of the total generation of electricity from geothermal sources in the U.S. As a renewable energy source, geothermal power plants do not burn fossil fuel. Because these power plants do not burn fossil fuel, they are able to produce power with negligible emissions of CO₂ (the principal GHG), NO_x and SO₂. The Geysers, which produce 8% of the renewable energy and 48% of the geothermal power in California, are helping to meet the state’s clean energy goals. Operations at The Geysers prevent the emission of approximately 3.3 million tons of CO₂ each year that would have otherwise been emitted by existing power generation facilities. This reduction is the equivalent of removing approximately 710,000 cars from the road.

Calpine is proud to be a custodian of the rare geothermal resource that supplies The Geysers with steam. It is one of two prominent dry steam field resources in the world, where the steam source from the ground contains high-temperature steam with minimal liquid water and salt content. This provides more ideal conditions than most domestic geothermal power production from liquid dominated fields that produce commingled wetter, saturated steam with higher salt and chemical content.

^[1]As of December 2020.

^[2]CO₂ is from naturally occurring sources and not from combustion.

THE GEYSERS (CONT.)



However, over time, withdrawals of steam for electricity generation can deplete the steam resource. Before Geysers Power Company, LLC began operation of the steam field in the late 1980s, the steam field was at risk of extinction. We believed that this rare resource could be saved by a large, reliable supply of water to augment injection. Today, sustainable power generation at The Geysers is possible largely because of two successful large-scale recycled water injection projects from Lake County and the City of Santa Rosa. We receive approximately 11 million gallons of water per day from the Santa Rosa Geysers Recharge Project, which we developed jointly with the City of Santa Rosa, and, on average, approximately 3 million gallons a day from The Lake County Recharge Project. The Geysers use of this water benefits the community, too, as costly additional treatment and disposal facilities would be required if our Geysers Assets were not taking the water. Together, these projects provide approximately 14 million gallons of reclaimed water per day for injection into The Geysers reservoir.

Calpine injects this water back into the steam reservoir, which is naturally heated by the earth, to create additional steam to generate electricity. This extends the useful life of the resource while maintaining the sustainable output of The Geysers. Careful reservoir management and developing new injection wells are other key components to Calpine's successful optimization efforts. As of December 2020, there were 53 active injection wells at The Geysers and the majority of the water re-injected into the steam reservoir came from recycled sources.

Calpine invests in the optimization of electrical production at The Geysers as well. This includes shutting down less efficient power plants, building steam cross-tie pipelines and installing super rotors to make more electricity from lower steam pressures. Traditionally, geothermal power plants operate on steam wells situated close by. Adding steam cross-tie pipelines allows the transfer of steam between power facilities so that if a power plant goes offline, steam can now be diverted to another Geysers power plant, making an already reliable source of renewable energy even more reliable and maximizing output. Through our super rotor upgrades, Calpine is replacing parts with latest high reliability/durability design optimized to current, lower reservoir steam pressures at The Geysers, which has successfully resulted in more generation utilizing less steam.

Over the years, we have partnered with the U.S. Department of Energy (DOE) and California Energy Commission to research increasing geothermal output at both The Geysers and in other locations. Recently, Geysers Power Company, LLC collaborated with the DOE, U.S. Geological Survey and Lawrence Berkeley National Laboratories for the Enhanced Geothermal System Demonstration Project in the Northwest Geysers to learn how recycled water can be efficiently used to increase steam field production and to enhance public outreach and awareness of geothermal systems at Calpine's Geothermal Visitor Center. In 2014, California Energy Commission's Energy Research and Development Division awarded Geysers Power Company, LLC a grant to encourage flexible electrical generation capabilities, and to find ways to increase flexible generation at The Geysers. Flexible generation allows the geothermal output to ramp up and down as needed by the grid to keep renewable energy flowing to the grid when intermittent renewable resources, such as wind and solar, go offline.

Calpine has developed special technology to separate a sulfur product from the geothermal power plant's abatement systems, allowing this elemental sulfur to be repurposed as a soil supplement, which is currently used by almond growers in the Central Valley to improve alkaline soils.

In recognition of the unique, sustainable aspects of The Geysers, in 2020, Calpine closed on a \$1.1-billion Climate Bonds-Certified financing for its wholly-owned subsidiary, Geysers Power Company, LLC. DNV GL, a Climate Bonds Initiative Approved Verifier, performed the pre-issuance verification of the green loan.

The Geysers operations significantly contribute to sustaining the local economy through geothermal royalties, employing about 270 people on a full-time basis, providing approximately 130 contractor jobs, purchases of goods and services, and is the largest tax payer in Lake County and the second largest in Sonoma County.



PEOPLE AND COMMUNITIES



OCCUPATIONAL HEALTH AND SAFETY

Safety of our employees, assets, and communities is one of our core [ASPIRE Values](#). We have built our culture on the belief that safety is everyone's responsibility. Our occupational health and safety policies and procedures cover all Calpine employees and focus on accountability, employee engagement, risk recognition and mitigation, continuous learning, and program monitoring.

Safety is woven into all of our policies and procedures. Employees are trained on all programs and recognize our priorities are to first protect all personnel, second, the environment, and then equipment. All employees and contractors working on Calpine sites are required to abide by our health and safety procedures and protocols—always.

To provide oversight and leadership at the executive level, we have an Executive Safety Committee that meets quarterly. In addition, each plant has a safety committee that meets regularly. Day-to-day safety measures at our plants and offices are driven by our Event-Free Operations guidelines and our Six Cardinal Rules of Hazard Recognition and Mitigation.

SAFETY PERFORMANCE

Proactive risk management and continuous improvement in our safety processes and controls are vital to our long-term success. We incorporate leading indicators of safety management excellence into our performance goals and compensation systems. We benchmark our safety strategies and performance with peers and update internal safety standards and processes to ensure regulatory compliance and continuous improvement. Internal and external safety audits are performed on a regular basis to support this process.

A key element of our drive for continuous improvement is our electronic reporting system for all safety events and near misses. Utilizing this system allows us to understand health and safety performance trends and risk throughout the company and better focus our training strategies and preventative actions. We regularly report our findings to leadership.

As a result, our safety performance routinely ranks among the best in our industry based on lost-time incident and total recordable incident rates, the primary indicators of industrial safety performance.

CARDINAL RULES

Our Cardinal Rules are a set of fundamental safety programs, based on an analysis of common risks in plant operations that could result in significant injuries and that may be mitigated by adhering to well-defined safety protocols. We update our Cardinal Rules as we identify new trends or changes in our work environment.

Six Cardinal Rules of Hazard Recognition and Mitigation:

1

LOCKOUT/TAGOUT (LOTO)

2

CONFINED SPACE

3

ELECTRICAL SAFETY

4

FALL PROTECTION

5

JOB SAFETY ANALYSIS/SAFE WORK PERMIT

6

MATERIALS HANDLING AND MOVING VEHICLES

In 2020, Calpine achieved its best safety performance ever with just 10 employee recordable injuries (previous best was 13 in 2019), significantly better than the company-wide incentive goal of 18. In addition, our offices have been event free since 2016. A significant number of our facilities have had zero recordable safety incidents and/or zero environmental metric events.

OCCUPATIONAL HEALTH AND SAFETY

	REFERENCE	2018	2019	2020
Workers covered by an occupational health and safety management system	GRI 403-8	100% - All employees and contractors working on Calpine sites are required to abide by our health and safety procedures and protocols.		
Facilities with zero recordable safety injuries		55	57	57
Employee Rates				
Total Recordable Incident Rate (TRIR)	GRI 403-9 and SASB IF-EU-320a.1	0.66	0.58	0.44
Lost Time Incident Rate (LTIR)		0.31	0.18	0.09
Fatalities	GRI 403-9 and SASB IF-EU-320a.1	1	0	0
Contractor Rates				
Total Recordable Incident Rate (TRIR)	GRI 403-9 and SASB IF-EU-320a.1	0.58	0.99	0.96
Lost Time Incident Rate (LTIR)		0.0	0.30	0.11
Fatalities	GRI 403-9 and SASB IF-EU-320a.1	0	0	1
Percentage of employees who completed safety training	GRI 403-10	100% of plant employees	100% of plant employees	100% of plant employees



HIGHLIGHT STORY

VOLUNTARY PROTECTION PROGRAMS STAR WORKSITES

Exemplifying our commitment to safety, several of our power plants have earned Star Worksite certification through the Voluntary Protection Programs administered by the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA). This designation is OSHA's highest level of recognition for outstanding efforts to implement an exemplary occupational safety and health system. Our plants achieving this designation are:

- Hidalgo Energy Center in Edinburg, Texas
- Magic Valley Generating Station near Edinburg, Texas
- Morgan Energy Center in Decatur, Alabama
- Westbrook Energy Center in Westbrook, Maine

IN 2020, CALPINE ACHIEVED ITS BEST SAFETY PERFORMANCE EVER WITH JUST 10 EMPLOYEE RECORDABLE INJURIES (PREVIOUS BEST WAS 13 IN 2019)—SIGNIFICANTLY BETTER THAN THE COMPANY-WIDE INCENTIVE GOAL OF 18. IN ADDITION, OUR OFFICES HAVE BEEN EVENT FREE SINCE 2016.



EMERGENCY RESPONSE

As a critical power provider, Calpine has a robust set of policies and procedures to prevent, prepare for, and respond to emergencies.

Our CEO and executive leaders guide our emergency response program. Calpine's Business Continuity Management Team includes members of critical departments throughout the organization to bring a corporate-wide perspective on emergency planning. At the operational level, trained responder teams that report to the Business Continuity Management Team are in place to undertake emergency response efforts.

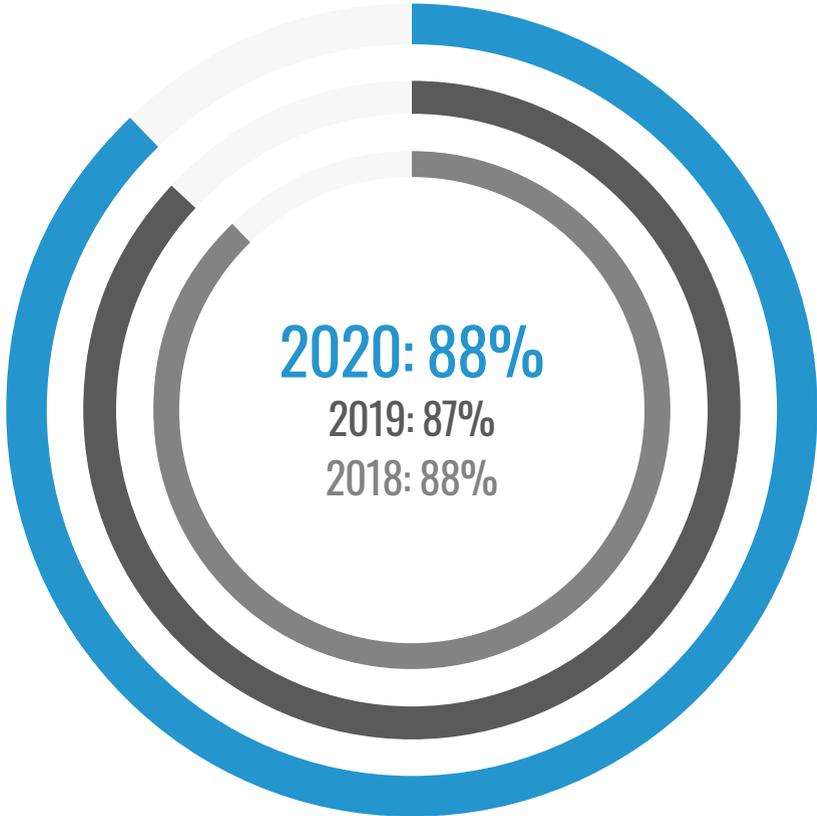
AS A CRITICAL POWER PROVIDER, CALPINE HAS A ROBUST SET OF POLICIES AND PROCEDURES TO PREVENT, PREPARE FOR, AND RESPOND TO EMERGENCIES.

Each site and business unit is required to have a detailed business response plan. As part of these plans, we review and complete deployment trainings on an annual basis, including tabletop training exercises and deployments to corporate business continuity locations to encourage continuous preparedness.

We regularly engage with local emergency management officials and first responders to review emergency response plans and conduct drills. We also maintain relationships with local branches of federal bureaus. Additionally, we partner with our communications network providers to ensure that in the event of an emergency, we have first responder network priority and are able to communicate and coordinate with local emergency management to ensure the safety of the community.

We pride ourselves on providing reliable power. Our goal is to minimize downtime and disruption during any event. However, events do occur and we evaluate each event as a learning opportunity to update our plans and training accordingly. We pride ourselves in our ability to quickly adapt and respond to an ever-evolving field of challenges.

AVERAGE AVAILABILITY OF CALPINE'S FLEET^[1]



^[1]Average availability excludes power plants and units that are inactive. It represents the total hours during the period that our plants were in service or available for service as a percentage of the total hours in the period.

CALPINE IN THE COMMUNITY

Passion for our communities is an [ASPIRE Value](#), and we are dedicated to supporting the communities where our employees live and work. We focus our support, both in time and money, in three strategic areas:

Community Development

- Programs that provide economic development opportunities in underserved areas, including community revitalization efforts
- Programs that use innovative and/or collaborative approaches to address key community health and human services issues
- Programs that provide relief and recovery services to communities impacted by disasters

Education and Workforce Advancement

- Programs that help students successfully complete high school and/or prepare for and gain access to college or meaningful employment
- Programs that help students successfully complete post-secondary education
- Job training programs that prepare individuals for meaningful employment
- Educational programs that develop community, civic engagement, and leadership capacity
- Educational programs and investments that drive innovation and/or technology to foster new solutions

Environmental Sustainability

- Programs that support environmental sustainability initiatives to strengthen communities

PASSION FOR OUR COMMUNITIES IS AN ASPIRE VALUE, AND WE ARE DEDICATED TO SUPPORTING THE COMMUNITIES WHERE OUR EMPLOYEES LIVE AND WORK.



Calpine contributes directly to the communities in which we work; our charitable giving over the past 3 years is highlighted below:

CHARITABLE GIVING

	2018	2019	2020
Calpine	Over \$1.2 million	Over \$1.6 million	Over \$2.2 million ⁽¹⁾
Calpine Foundation	Over \$100,000	Over \$200,000	Over \$800,000

⁽¹⁾Includes amounts donated to COVID-19 relief efforts.

EMPLOYEE RELIEF FUND

We established the Calpine Employee Relief Fund in the wake of Hurricane Harvey in 2017 as a means for employees, Board members, suppliers, and other partners to directly help Calpine employees pay for uninsured losses and expenses resulting from natural disasters or other tragedies that create financial hardship. This perpetual fund is available for Calpine employees and has distributed over \$500,000 since its inception.

\$500,000 OF THE EMPLOYEE RELIEF FUND HAS BEEN DISTRIBUTED SINCE ITS INCEPTION



CALPINE FOUNDATION

The Calpine Foundation strives to provide meaningful support to our local communities. In addition to contributing to employee-led efforts such as Calpine's Texas Regional Annual Charity Golf Tournament, the Calpine Foundation donates to local organizations that improve the environment and make a difference in the lives of families and children.

As a result of our 2019 Texas Regional Annual Charity Golf Tournament, Calpine donated in excess of \$198,000 to Texas charities. In 2020, the tournament was put on hold due to COVID-19 precautions, but we look forward to playing again when conditions allow.

VOLUNTEERISM

Calpine encourages all of its employees to volunteer in their communities. During Calpine's inaugural Calpine in Our Communities Day in 2019, employees volunteered more than 5,000 hours of their time to benefit local projects. Although COVID-19 prevented Calpine from participating in the event in 2020, we look forward to re-engaging when conditions allow and making Calpine in Our Communities Day an annual event.

\$80,000

**RAISED BY TEAM CALPINE IN 2020
TO BENEFIT THE NATIONAL MULTIPLE
SCLEROSIS SOCIETY**

We also support employee participation in charitable fundraising events. Since 2001, Calpine and its employees have raised over \$2.5 million in support of two of the Gulf Coast's largest fundraising events—the BP MS 150 and Houston Marathon. Even though the annual BP MS 150 bike ride was canceled in 2020 due to COVID-19 precautions, Team Calpine raised almost \$80,000 to benefit the National Multiple Sclerosis Society and was named one of the event's top 20 fundraisers.

EMPLOYMENT AT CALPINE

Calpine's culture is grounded in our [ASPIRE Values](#), which underpin all our business decisions, policies, and practices. We evaluate every employee against these expected behaviors in our annual review process.

EMPLOYEE TRAINING AND DEVELOPMENT

The dedication of our employees makes it possible for us to successfully execute our business strategy and achieve our goals. We strive for all employees to meet their potential through professional development and we actively work to create opportunities within the organization to help them advance beyond their current skills.



Calpine employees begin their employment with orientation. A variety of development opportunities follow including plant progression programs, job rotation and stretch assignments, and training opportunities. In 2020, our employees completed an average of six training courses. We have four core employee development programs—Power Operations Leadership, Leading at Calpine, Leadership Connect, and Mentorship Match, which prepare and empower participants to take on expanded roles within the company. Our people completed a total of 25,457 hours of training in 2020, an average of 11.1 hours per employee.

THE DEDICATION OF OUR EMPLOYEES MAKES IT POSSIBLE FOR US TO SUCCESSFULLY EXECUTE OUR BUSINESS STRATEGY AND ACHIEVE OUR GOALS.



POWER OPERATIONS LEADERSHIP PROGRAM

Our Power Operations Leadership Program provides opportunities for plant and other power operations employees to interact with our corporate functions and learn how we seamlessly work together to provide reliable energy. This program brings employees from across the organization to our headquarters in Houston, Texas for 1 week a month over 5 months where they have the opportunity to interact with leadership and attend development sessions.

“ AFTER ATTENDING THIS PROGRAM, I NOW HAVE THE ABILITY TO BETTER EXPLAIN TO MY EMPLOYEES AND MAINTENANCE TEAM THE FINANCIAL BENEFITS AND REASONING BEHIND DECISIONS TO PAUSE PRODUCTION. I NOW UNDERSTAND THE LARGE SIZE OF OUR CORPORATE TEAM THAT CONSISTENTLY PROVIDES SUPPORT. ”

— OPERATIONS MANAGER

LEADING AT CALPINE

Leading at Calpine provides in-depth experiential learning opportunities where employees build knowledge and leadership skills. Throughout this 4-week program, employees have the opportunity to put learnings into practice and demonstrate their growth in a final presentation at the end of the course.

“ **AFTER MY EMPLOYEE COMPLETED THIS TRAINING, I SAW AN ALMOST 180-DEGREE SHIFT IN HER ENGAGEMENT—THERE IS ENORMOUS VALUE IN THE WAY SHE LEADS BASED ON WHAT SHE LEARNED FROM THE TRAINING. SHE DID A FANTASTIC JOB GETTING A COMPLEX, MAJOR PROJECT OVER THE FINISH LINE, WHILST COORDINATING ACROSS MULTIPLE WORK GROUPS. I ATTRIBUTE MUCH OF THIS SUCCESS TO THE TOOLS AND STRATEGIES SHE LEARNED IN THE LEADING AT CALPINE PROGRAM.**

— VICE PRESIDENT

CALPINE'S LEADERSHIP CONNECT SERIES

Calpine's Leadership Connect Series provides an opportunity for employees to interact with leadership and hear career lessons from leaders within the company. On a quarterly basis, we invite roughly 30 employees to participate in an interactive session where senior members of Calpine leadership share career insights.

“ **THE INSIGHT PROVIDED AT MY SESSION REGARDING WHAT HELPED (THE LEADER) GET TO WHERE THEY ARE TODAY IS A GREAT REMINDER AND MOTIVATION FOR ME, ESPECIALLY AS I'M STARTING MY CAREER.**

— SESSION ATTENDEE

TALENT PIPELINE

At Calpine, we believe in investing in our employees and promoting from within. Our approach to workforce planning promotes the long-term stability of our business and the success of our employees. Employee retention and engagement helps us meet our strategic goals, and we are proud of the fact that 46% of our workforce has been with Calpine for 10 years or longer.

Calpine has a robust hiring and development program for young talent. We have a rotation program for students with positions in our corporate and retail offices, in addition to an engineering rotational program at our plants to help encourage women in these roles. We also run a summer internship program for college students, and have launched a cooperative program with San Jacinto College in Houston, Texas.



As part of our D&I initiatives, we are actively working to diversify our talent pipeline by recruiting at Historically Black Colleges and Universities and promoting participants from our rotational programs, which encourage advancement of women in science, technology, engineering, and math fields. As seen in our D&I metrics, year over year our management staff is becoming increasingly diverse.



AWARDS AND RECOGNITION

We recognize outstanding results and exemplary performance through several award programs, including our quarterly Stellar Awards, Spot-On Awards, and the company's highest employee honor, the Jack A. Fusco ASPIRE Award. In 2019, we awarded five recipients the Jack A. Fusco Aspire award.

“ THESE FIVE TEAM MEMBERS EPITOMIZE OUR ASPIRE VALUES, AND BY DOING SO, THEY NOT ONLY HELP THE COMPANY CONTINUALLY IMPROVE, THEY MAKE CALPINE A BETTER PLACE FOR ALL OF US TO WORK. ”

— THAD HILL, PRESIDENT AND CEO

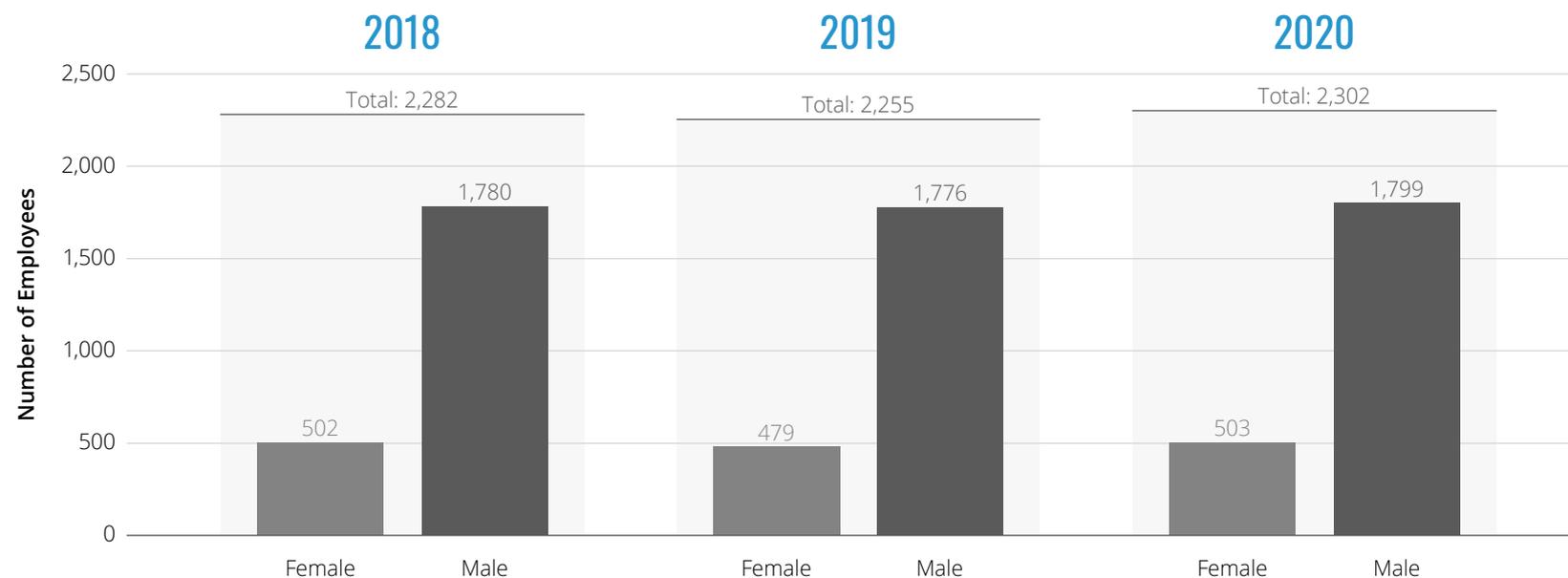
TUITION REIMBURSEMENT

We provide a tuition reimbursement program to support employees who choose to further their education. We also provide competitive scholarship and vocational grant programs for qualifying dependents. In 2020, we provided approximately \$155,000 in tuition reimbursement, \$44,000 in scholarships, and \$3,000 in scholarship and vocational grants.

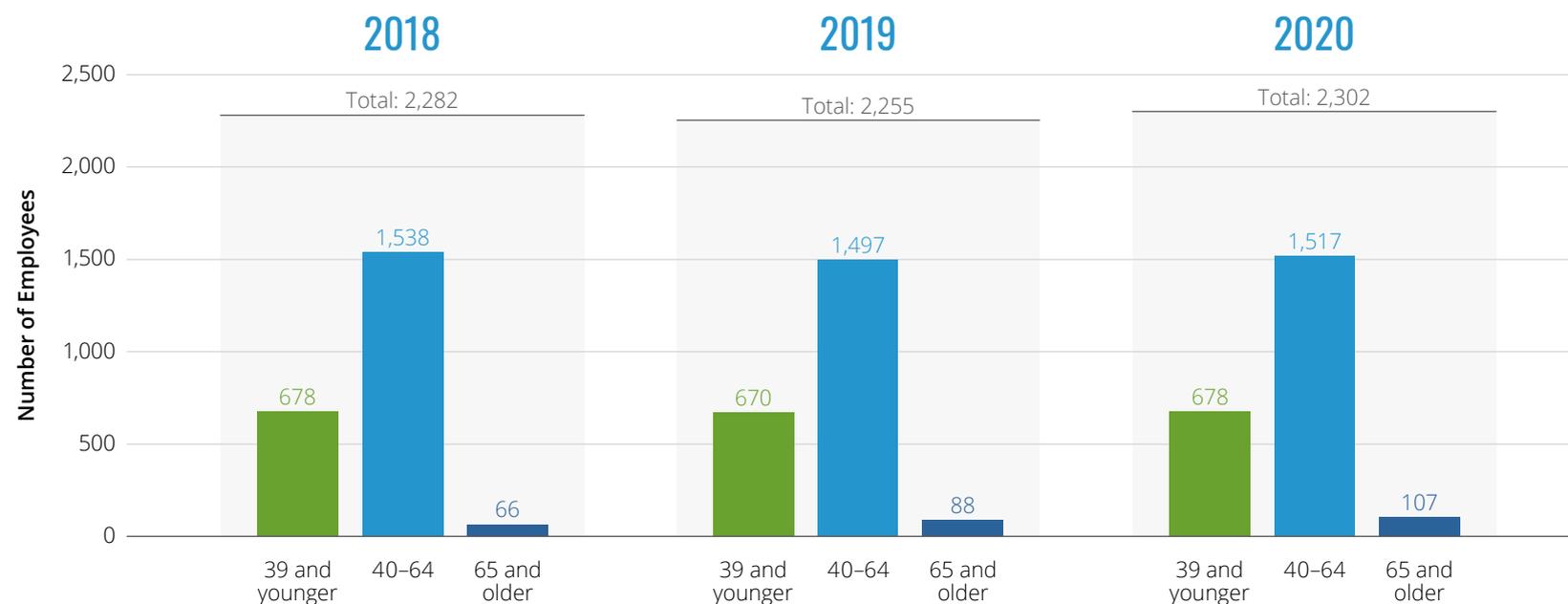
EMPLOYEE WELL-BEING

As part of our commitment to employee well-being, our benefits program incentivizes our employees to undertake healthy activities. We offer eligible employees, regardless of gender, who have 2 or more years of service a parental leave of up to 12 weeks of PTO to bond with a newborn or newly adopted child aged 5 years old or younger.

WORKFORCE GENDER DATA

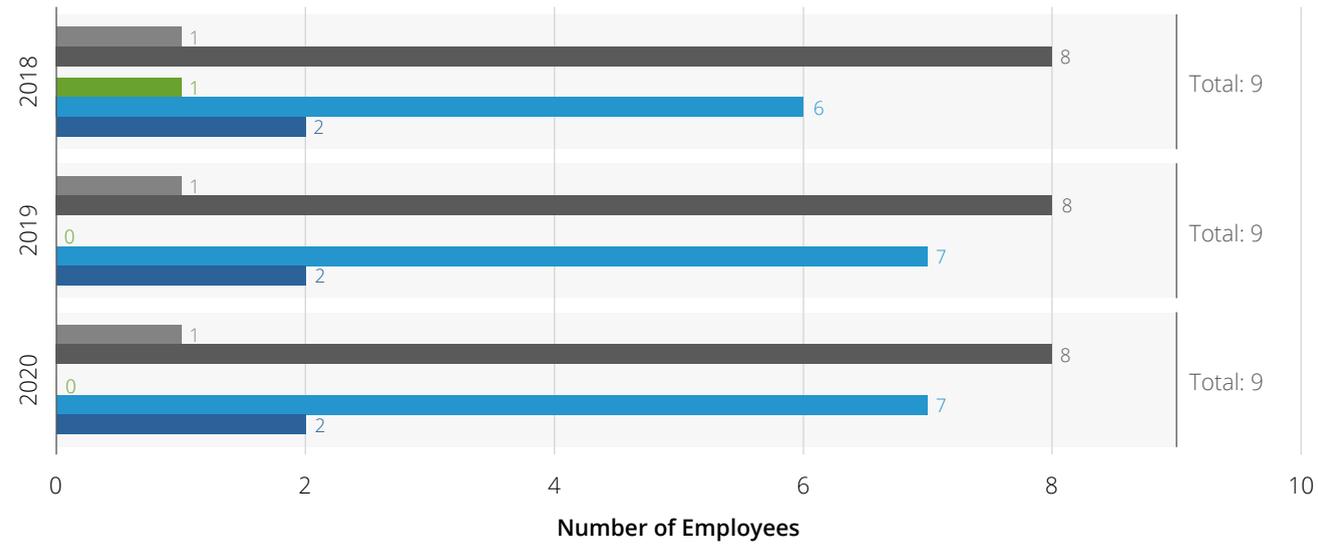


WORKFORCE AGE DATA

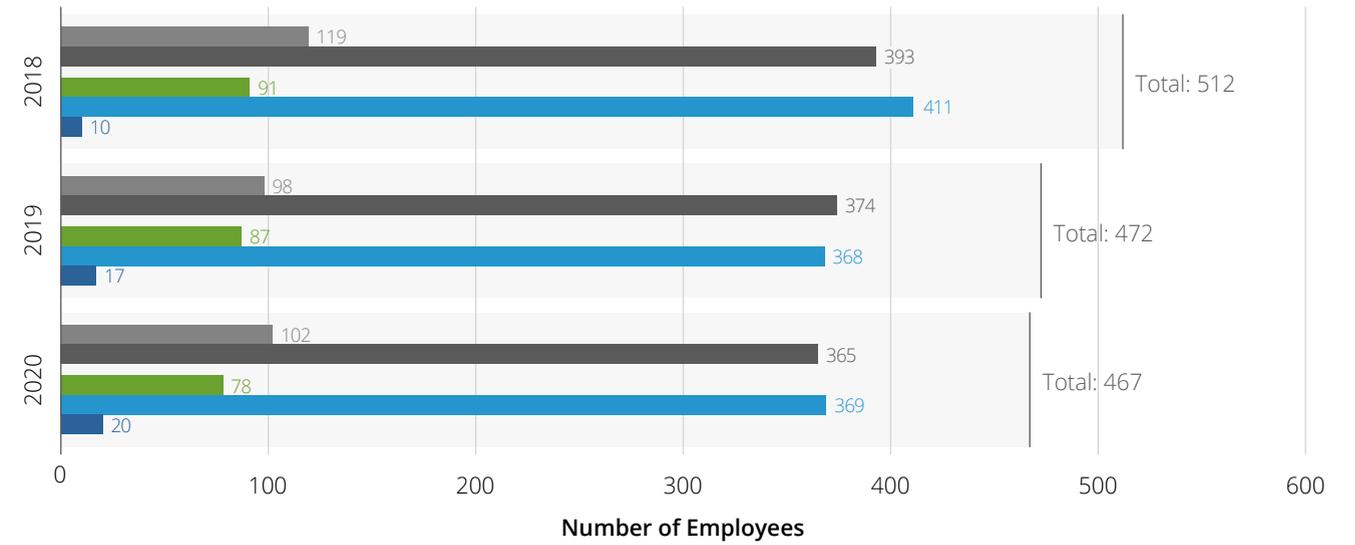


WORKFORCE POSITION DATA

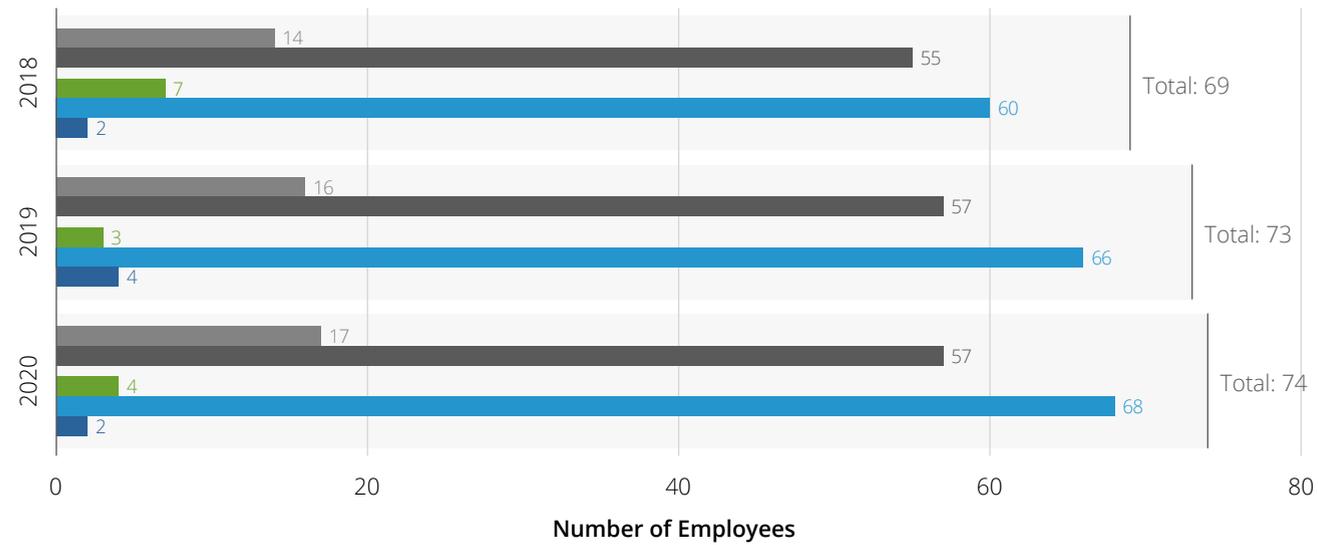
CEO and Direct Reports



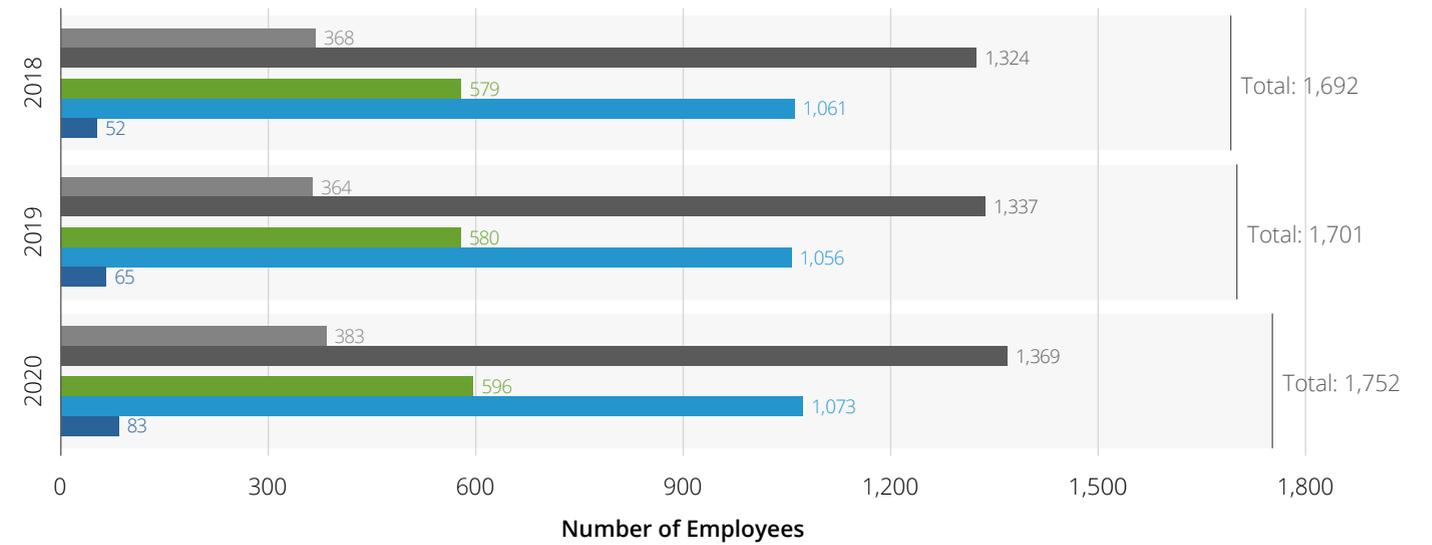
Manager/Director (Management)



Vice President/Senior Vice President (Senior Management)

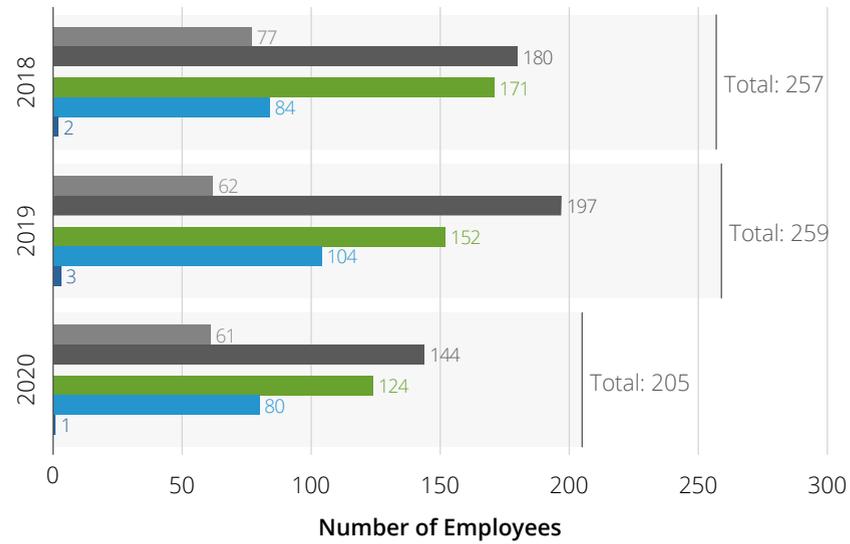


All Other Positions

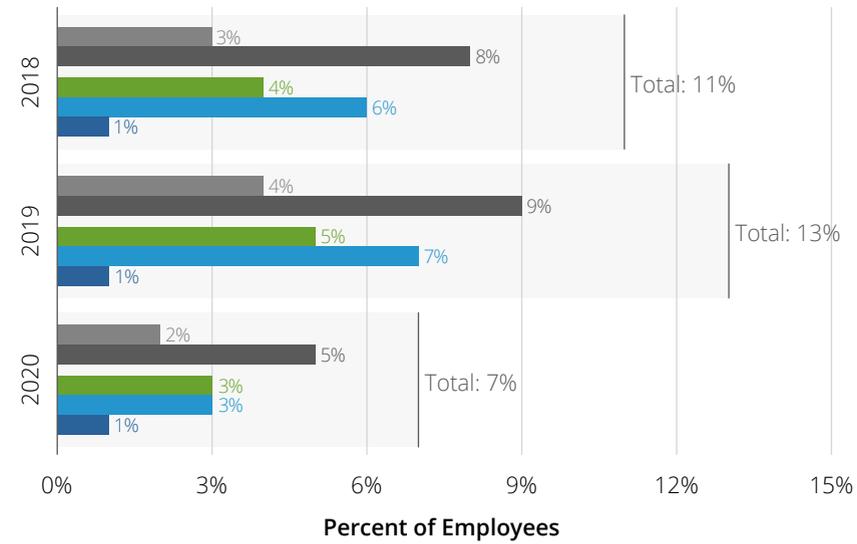


Key: ● Female ● Male ● 39 and younger ● 40-64 ● 65 and older

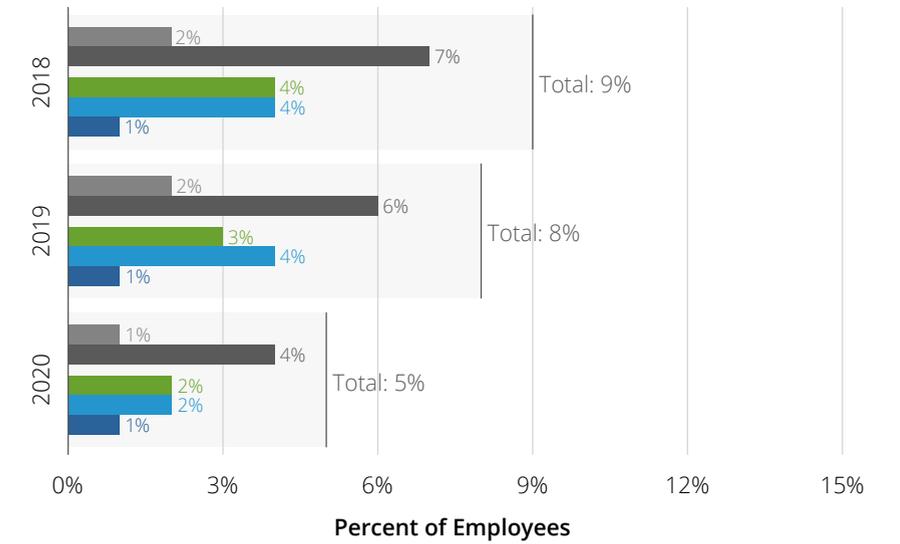
New Hires



Turnover^[1]



Voluntary Turnover



Key: ● Female ● Male ● 39 and younger ● 40-64 ● 65 and older

^[1]Includes voluntary turnover

	REFERENCE	2018	2019	2020
Race				
American Indian /Alaskan Native	GRI 405-1	11	13	12
Asian		204	209	207
Black or African American		130	126	135
Hispanic or Latino		299	325	344
Native Hawaiian or Other Pacific Islander		6	5	5
Not Specified		10	-	3
Two or more races		25	30	37
White		1,597	1,547	1,559

	REFERENCE	2018	2019	2020
Diversity and Inclusion				
Percentage of employees who are women	GRI 405-1	22%	21%	22%
Percentage of employees who are minorities		30%	31%	32%
Percentage of senior management who are women		19%	21%	22%
Percentage of senior management who are minorities		12%	16%	17%

DIVERSITY AND INCLUSION

Calpine believes in the power of our diversity and knows that our goals can only be accomplished through continued—and intentional—development of a diverse and inclusive workforce. We are committed to creating a work environment where all employees feel valued, respected and are treated fairly at all times. Rooted in our [ASPIRE Values](#), we have the following D&I goals:

- Attract, engage, and retain a diverse, inclusive, and talented workforce.
- Engage with diverse communities and suppliers to volunteer, donate, and spend. Learn more about our supplier diversity program in the [Supply Chain Management section](#) of the report.
- Meet the needs of our increasingly diverse customers and communities.

We draw on the richness and diversity of our employees' backgrounds and experiences to continuously learn from and teach one another. Our diverse teammates contribute valuable knowledge and fresh perspectives to help us make better business decisions, which in turn result in better outcomes for our communities and our futures. By promoting inclusive collaboration and seeking input from a variety of voices, we strive to remove barriers and open doors to our individual and collective success.

WE ARE COMMITTED TO CREATING A WORK ENVIRONMENT WHERE ALL EMPLOYEES FEEL VALUED, RESPECTED, AND ARE TREATED FAIRLY AT ALL TIMES.

As we continue our journey of fostering a more diverse and inclusive workplace, in 2020 we created a robust D&I strategic roadmap for the company and established three additional goals:

- Improve and foster organization D&I accountability, awareness, and commitment.
- Improve hiring, recruitment, and talent retention practices.
- Incorporate D&I into our community outreach, philanthropic giving, and supplier selection processes.



To achieve these goals, we are developing the following programs:

- Hosting updated [ASPIRE Values](#) workshops for all employees;
- Providing Behavioral Interviewing and Giving Difficult Feedback Workshops for managers;
- Sending bi-weekly Calpine job opportunity communications to all employees; and
- Piloting a Mentorship Program for employees at all levels.

Calpine's commitment to D&I is reflected in its organizational leadership. Our Diversity Advisory Committee meets on a monthly basis and is made up of a small group of senior leaders from across the organization who provide leadership and direction to the D&I Council.

CALPINE SALUTES OUR MILITARY VETERANS

We employ more than 300 veterans, who represent about 15% of our workforce. At our 2019 Veterans Day commemoration, our Houston office hosted a breakfast and panel discussion where the Veterans Employee Resource Group members discussed upcoming initiatives and provided more information to Calpine veterans about benefits available to them—from veteran's ID cards to medical care.

A moment of silence was held for “those who have fallen and those who have taken their own lives after their service.” Additionally, all Calpine employees who voluntarily identified themselves as military veterans received a commemorative challenge coin from the event that was designed by one of our veteran employees in honor of a family member killed in action in Vietnam.



The D&I Council includes employees from all levels of the organization and meets regularly to discuss initiatives and connect employees to foster a diverse and inclusive environment at Calpine. D&I Council members have a staggered tenure to allow the Council to continually enjoy fresh perspectives. The D&I Council sponsored an Unconscious Bias workshop in which all employees participated in 2018, and in 2021 we plan to launch workshops on Conscious Inclusion throughout all levels of the organization. Additionally, the D&I Council was instrumental in coordinating the launch of Employee Resource Groups (ERGs) at Calpine.

ERGs

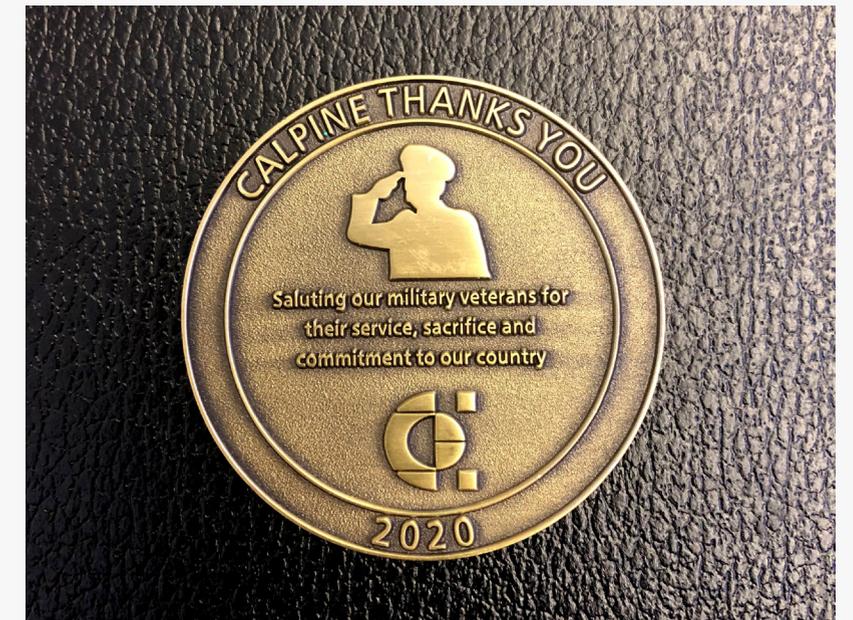
As a part of our commitment to D&I, employees have established two ERGs at Calpine—one for veterans that launched in 2018 and one for Women's Initiatives & Networking that launched in late 2019. We encourage the creation of, and are actively working on, new employee resource groups.

Our goal in our ERGs is to have representation across our operations, not just our corporate office. We are constantly looking for opportunities to provide employees from separate locations a chance to network and share best practices throughout the organization.

SOCIAL JUSTICE

Calpine takes racial and social inequities seriously. As part of our response efforts, we hosted listening sessions where employees had the opportunity to share thoughts and experiences regarding racial injustice and inclusion efforts. In addition, our Chief Executive Officer and Chief Legal Officer engaged in one-on-one sessions with stakeholders across the organization. We are incorporating employee feedback through both initiatives into future planning efforts.

In addition, we plan to redirect and enhance our philanthropic and volunteer efforts to focus on organizations that promote social and racial justice in our communities. We have made a financial commitment to spend \$10 million over 5 years geared toward contracting with disadvantaged businesses and philanthropy directed at underrepresented communities.



RETAIL SERVICES

Our retail brands, Calpine Energy Solutions and Champion Energy Services, which we operate through wholly-owned subsidiaries, serve residential, commercial, and industrial customers in select markets across the nation. In 2020, we delivered 55.5 million MWh of electricity to our customers, consisting of 5,549,314 million annualized customer equivalents.

Our retail subsidiaries are complementary to one another. Calpine Energy Solutions serves large commercial and industrial entities who tend to view the management of energy and carbon as an important strategic initiative, while Champion Energy Services focuses on the residential and small commercial segments and delivers a high-quality customer experience.

TOTAL ELECTRICITY DELIVERED TO CUSTOMERS

	REFERENCE	2018	2019	2020
Residential customers	SASB IF-EU-000.B	4.25MM MWh	3.69MM MWh	3.36MM MWh
Commercial customers		56.62MM MWh	56.46MM MWh	52.13MM MWh
Industrial customers				
All other retail customers		All retail customers are included in the lines above.		

CALPINE ENERGY SOLUTIONS

Calpine Energy Solutions is one of America's largest suppliers of power to the commercial and industrial sectors, serving customers in 20 states, the District of Columbia, and the state of Baja-Mexico. Most of Calpine Energy Solutions' clients seek to leverage our devotion to quality and our disciplined approach to managing energy and carbon to support their sustainability objectives. For over 20 years, Calpine Energy Solutions has directly sourced renewable energy for purposes of complying with state-mandated Renewable Portfolio Standards and in partnership with many of our clients to achieve their voluntary objectives.

The approach taken by Calpine Energy Solutions treats energy cost and risk goals as being inextricably linked to emission reduction goals, and seeks to manage them in an integrated fashion.





The company focuses on helping businesses transform their energy and carbon management programs from a traditional procurement approach to a data-driven, sustainable business process that leverages our core capabilities:

- **Renewable Energy:** Our Sensible Sustainability™ process utilizes powerful analytical tools and data visualization platforms to help clients develop and execute their energy/carbon management programs in the context of governance, cost, risk, carbon, and reporting.
- **Data Management:** Calpine Energy Solutions is the only licensed energy retailer in the U.S. that maintains ISO 9001: 2015 certification.
- **Risk Management:** Calpine Energy Solutions uses our PowerFolio3D™ suite of web-based analytical tools to run simulations that measure the expected impacts of various risk mitigation actions to a client's cost, risk, and carbon objectives.

In January 2021, CDP (formerly the Carbon Disclosure Project) recognized Calpine Energy Solutions' unique approach with a silver accredited renewable energy partner designation in North America. The company joins a select group of domain experts recognized for excellence, providing products and services in support of Corporate ESG efforts.

CHAMPION ENERGY SERVICES

Champion Energy Services serves residential, governmental, and commercial customers in deregulated electric energy markets across the U.S. and dedicates itself to creating value through exceptional customer service and competitive electricity pricing for customers in the Texas, Northeastern, and Midwestern power markets. The Champion Energy Services team works with commercial clients to create tailored and creative energy solutions specific to each company's unique commercial electric power needs, budget flexibility, and risk tolerance.

In the Texas market, Champion Energy Services only serves residential customers. For 6 out of 7 years, Champion Energy Services earned the highest ranking for residential customer satisfaction through the JD Power Retail Electric Provider Residential Customer Satisfaction Study for its residential business in Texas. Residential customers are provided a weekly Smart Track usage report that includes monthly bill estimates. These weekly home energy reports put the power of smart meters in the customer's hands by providing detailed energy usage information and giving customers the ability to track and manage electricity use.



GOVERNANCE





CORPORATE GOVERNANCE

We are committed to ethical business practices, as set forth in our Accountability and Integrity [ASPIRE Values](#). Our Board and senior leadership regularly review corporate governance best practices and regulatory requirements to help us achieve our mission—to be America’s premier competitive power company.

Calpine’s Board comprises eight directors, seven of whom vote. The Board has two committees: the Audit Committee and the Compensation Committee. Our Audit Committee, comprising four members, is responsible for reviewing all reports made by auditors and monitoring internal controls. The Compensation Committee, which also has four members, is responsible for reviewing compensation programs.

AT CALPINE, WE ARE COMMITTED TO OPERATING IN A SAFE, RESPONSIBLE, AND ETHICAL MANNER AT ALL TIMES.

BUSINESS ETHICS

At Calpine, we are committed to operating in a safe, responsible, and ethical manner at all times. Our Code of Conduct outlines our operating guidelines and operational priorities, and ties our values to the way we do business. It applies to all directors, officers, and employees, and requires that each individual deal fairly, honestly, and constructively with governmental and regulatory bodies, customers, suppliers, and competitors. It prohibits any individual from taking unfair advantage through manipulation, concealment, abuse of privileged information, or misrepresentation of material facts. It imposes an express duty to act in the best interests of the company and to avoid influences, interests, or relationships that could give rise to an actual or apparent conflict of interest. All employees are required to complete a training and confirm that they have read our Code of Conduct on an annual basis.

All Calpine employees and suppliers are empowered to raise concerns about our operations and practices through our whistleblower program, without fear of retaliation. We encourage reporting behaviors and potential violations of our Code of Conduct to our toll-free reporting hotline via phone or web. An independent third party operates our hotline, which is available 24 hours per day, 7 days per week, 365 days per year via phone or web. Callers have the option to remain anonymous when reporting violations or concerns. We investigate all notifications, and the Audit Committee receives a report of all findings.

CORPORATE GOVERNANCE AND BUSINESS ETHICS

	2018	2019	2020
Number of hotline inquiries received	10	12	16
Percentage of employees who have acknowledged the Code of Conduct	Calpine requires each employee to annually acknowledge that they have read the Code of Conduct.		

ENERGY TRADING COMPLIANCE DISCUSSION GROUP ROUND TABLE

We believe in the sharing of knowledge and best practices related to energy trading compliance. In 2016, Calpine launched an industry compliance roundtable to share knowledge among peers in the industry. The roundtable invites over 70 major corporations to a dialogue to benchmark innovative practices and lessons learned within the industry. The roundtable meets 2 to 3 times a year, with meeting opportunities going remote in 2020 due to COVID-19.

GOVERNMENT RELATIONS AND PUBLIC POLICY

Since its founding, Calpine has been a leader in the power industry in advocating for environmental and regulatory policies that are fair and environmentally responsible—both at the federal level and in the states comprising our core markets. Today's energy regulatory landscape is complex, and we are an active participant in helping regulators and policymakers understand the impacts of their policies. As the largest natural gas and geothermal power producer in the U.S., Calpine brings an informed perspective to public policy discussions on state and national levels. Our representatives are trusted experts on important issues that affect electric reliability and economics.

WE ADVOCATE FOR FAIR AND WELL-STRUCTURED COMPETITIVE POWER MARKETS AND ENVIRONMENTALLY RESPONSIBLE REGULATION, INCLUDING CARBON PRICING.

We advocate for fair and well-structured competitive power markets and environmentally responsible regulation, including carbon pricing. We support competitive wholesale power markets and advocate for market-driven solutions that result in nondiscriminatory forward price signals for investors and a level playing field for all. We believe market-based solutions will reward the companies that invest in cleaner generation, ultimately leading to a clean and sustainable future.

CLIMATE LEADERSHIP COUNCIL

We are a founding member of the Climate Leadership Council, an international policy institute founded in collaboration with prominent companies, non-governmental organizations, and opinion leaders to promote a carbon dividends framework as the most cost-effective, equitable, and politically-viable climate solution. The Council's carbon dividends solution builds on free market principles to offer an equitable, popular, and politically-viable way forward, paving the way for a much-needed bipartisan climate breakthrough.

“ PLACING AN ECONOMY-WIDE PRICE ON CARBON WILL SPUR COMPETITIVE MARKETS TO PRODUCE THE MOST COST EFFECTIVE AND ENVIRONMENTALLY RESPONSIBLE SOLUTIONS. ”

— THAD HILL, PRESIDENT AND CEO



TRADE ASSOCIATIONS AND ORGANIZATION MEMBERSHIPS

Calpine belongs to a number of trade associations and organizations at local, state, and national levels. Active membership in these associations helps us amplify our expertise and work collaboratively on our public policy priorities. We engage with trade associations and organizations that include, but are not limited to:

- Business Council for Sustainable Energy
- California Council of Environmental and Economic Balance
- California Decarbonization Partnership
- California Women Lead
- Carbon Capture Coalition
- CDP Renewable Energy Partner Program
- CEO Climate Dialogue
- Climate Leadership Council
- Electric Power Supply Association
- Greater Houston Partnership
- Independent Energy Producers Association
- Independent Power Producers of New York
- Industrial Environmental Association
- Natural Gas Supply Collaborative
- New England Power Generators Association
- Northwest & Intermountain Power Producers Coalition
- PJM Power Providers
- Renewable Energy Buyers Alliance⁽¹⁾
- Texas Competitive Power Advocates
- Western Power Trading Forum
- World Business Council for Sustainable Development

POLITICAL CONTRIBUTIONS

Calpine contributes politically to causes and candidates we believe support the advancement of our company and industry interests. Calpine's corporate political and PAC donations are made in accordance with all applicable laws and include bipartisan contributions to state and federal candidates for elected office, as well as various ballot measures and committees.

⁽¹⁾ Calpine Energy Solutions is a member.

GOVERNMENT RELATIONS

	REFERENCE	2018	2019	2020
PAC contributions	GRI 415-1	\$182,400.00	\$218,500.00	\$113,300.00



RISK MANAGEMENT

Calpine takes a structured approach to risk management across the organization. Calpine's focus on risk management permeates throughout the organization starting with the executive team and extending through all areas of the Company.

Calpine's risk management framework is formalized through policies and procedures such as the Risk Management Policy. Among other things, this policy sets forth our framework to address, manage, and report risks.

The Risk Management Policy is approved by our Board of Directors and is administered by our Chief Risk Officer. To ensure appropriate segregation of duties, the Chief Risk Officer reports directly to the Audit Committee of the Board of Directors and the Chief Financial Officer.

To supplement our risk management framework, Calpine's internal audit team provides independent oversight and review of policies and procedures. The internal audit team conducts an annual survey to identify risks and their likely impact to Calpine's business to ensure appropriate coverage of key risks within the organization.

The aggregation of all aspects noted above provides a comprehensive and cohesive approach to risk management across the organization.

TECHNOLOGY ADOPTION

At Calpine, we leverage advanced technology to produce power efficiently and cost effectively. Calpine's fleet of natural gas-fired, combined cycle power plants is relatively young with a weighted average age, based upon MW capacities in operation, of approximately 20 years. Our flexible and reliable fleet is uniquely positioned to meet demand and support grid reliability.

AT CALPINE, WE LEVERAGE ADVANCED TECHNOLOGY TO PRODUCE POWER EFFICIENTLY AND COST EFFECTIVELY.



NEW TECHNOLOGIES

We believe carbon capture, battery storage, hydrogen, and other technological solutions will be part of a clean and reliable grid future. Examples of our innovative projects include:

Johanna Battery Project

Located in Orange County, California, our Johanna Battery Project consists of an 20MW/80MWh battery installation. California experiences daily peak load in the early evening. To satisfy this demand peak, the industry typically uses fossil fuel power plants referred to as “peakers,” that only run when demand for electricity is high. Calpine’s battery storage plays an innovative role in bridging the gap in a more environmentally responsible way. The Johanna batteries will generally be charged in the middle of the day when solar generation output is highest. Later in the evening, when peak demand hits, we can provide a clean source of power with the reliability and certainty the grid requires. Construction on the facility began in June 2020 and we plan to go online in 2021.

ION Carbon Capture Demonstration Project

In November 2020, Calpine announced its partnership with ION Clean Energy (ION), a Colorado-based carbon capture technology company, to build and operate an engineering-scale carbon capture pilot at its Los Medanos Energy Center cogeneration facility in Pittsburg, California. This exciting project will be funded with contributions from the DOE-NETL^[1], Calpine, and ION, and will be the first installation of a carbon capture pilot at a commercially dispatched natural gas combined cycle plant in the U.S. This collaborative project represents a unique opportunity for ION to demonstrate its new solvent technology in a real-world process environment and for Calpine to advance its operational experience in designing and implementing commercial-scale carbon capture at its facilities.

Blue Planet

Calpine is working with Blue Planet to install a unique carbon capture and sequestration pilot-scale facility at the Los Medanos Energy Center in California. Blue Planet has developed a technique for the sequestration of carbon in cementitious building materials by combining CO₂ with other minerals (such as calcium) and binding the resulting material to aggregate—making a new, higher value product suitable for use in light-weight concrete. Calpine is providing flue gas from one of the exhaust stacks at Los Medanos Energy Center via a pipeline that will connect to Blue Planet’s facility on an adjacent property. The pilot is expected to be in operation later this year with a scale up anticipated based on lessons learned.

^[1]DOE-NETL = U.S. Department of Energy National Energy Technology Laboratory

Plant Modernization

We are currently undertaking an upgrade program that is anticipated to result in 230 additional MW and approximately 1% additional heat rate improvement, translating into approximately 1% reduction of GHG emissions. Additionally, we are adopting artificial intelligence and advanced analytics to target our maintenance behaviors and technology deployment to improve performance and manage risk across our fleet.



At The Geysers, we constantly monitor our units to proactively manage performance. Planned modernization efforts include turbine upgrades and the use of advanced water modelling to optimize steam production from injection to the reservoir. You can read more about our steam production in [The Geysers section](#) of the report.

In late 2020, we began implementing upgrades to our fire protection systems at The Geysers following a settlement with the California Energy Commission in connection with alleged fire protection systems violations.

CYBERSECURITY

As part of the nation’s critical infrastructure, Calpine is focused on cybersecurity. We align our cybersecurity framework to National Institute of Standards and Technology 800-53; 800-82; 800-171 standards and continuously monitor for threats and malicious activity. Layers of protection and zero-trust networks protect our critical assets and data, and we have had zero reportable incidents of non-compliance with cybersecurity standards or regulations in the past 3 years.

CYBERSECURITY

	REFERENCE	2018	2019	2020
Number of reportable incidents of non-compliance with physical and/or cybersecurity standards or regulations	SASB IF-EU-550a.1	0	0	0

SUPPLY CHAIN MANAGEMENT

In 2020, Calpine issued purchase orders to more than 2,800 suppliers to procure the materials and services needed to support our daily operations. Our suppliers directly influence the success of our operations and influence our ability to deliver sustained power to our customers and communities. For that reason, we believe it is imperative to hold our suppliers to the same high standards we apply to our own operations. We are committed to working with suppliers with proven records of environmental responsibility, safety, and integrity.

Calpine requires suppliers to adhere to its Supplier Code of Conduct, which are the minimum requirements that must be met in order to do business with Calpine. The Supplier Code of Conduct outlines expectations for ethical standards and environmental protection, as well as adherence to all federal, state, and local rules and regulations. Suppliers must be committed to the basic principles of human rights, including a safe and healthy workplace, non-discrimination in all supplier practices, freedom from harassment, and freedom of association for all employees. Any code violations are to be reported to our toll-free reporting hotline, and we encourage suppliers to maintain ethics and compliance reporting mechanisms, as well.

At Calpine, we utilize center-led purchasing. Our supply chain department identifies and qualifies suppliers across various purchasing categories that are able to fulfill the needs of plants and offices nationally and regionally. Ultimately, purchasing decisions are made at the business-unit level based on research and guidance provided by our corporate supply chain department. However, we strive to source and purchase materials and services locally wherever possible.

For purchases of materials and services that are critical to Calpine’s core business or have inherent environmental or safety risks, Calpine has a robust five-step sourcing process to select preferred suppliers. We monitor key performance indicators such as OSHA recordables and insurance coverage for approved suppliers to ensure that they continue to meet all requirements. We also apply a risk matrix to assess a supplier’s risk profile based on past performance in categories such as operational, safety, and cybersecurity risks.

We audit several suppliers each year and audit all suppliers upon their contract renewal to ensure they abide by contract obligations. If suppliers are found to not meet requirements, we work with them to implement corrective actions. If continued problems occur, we sever our relationship.

SUPPLIER DIVERSITY

We believe in using local suppliers to encourage economic development in our communities. In 2020, we did business with 543 diverse suppliers (as defined by Dunn & Bradstreet and/or the National Minority Supplier Development Council). We spent over \$84 million on purchase orders with diverse suppliers. In 2020, we also launched a formal effort to enhance our supplier diversity and provide additional opportunities to a variety of small business, including a focus on socially and economically disadvantaged businesses. This includes evaluating suppliers in certain service sectors with low barriers to entry to source from as diverse a pool of vendors as possible. We also became a proud corporate member of the National Minority Supplier Development Council and joined the Supplier Diversity Advisory Council (SDAC) of the Houston Minority Supplier Development Council (HMSDC) in 2020.



In 2020, we began utilizing third parties to verify all supplier diversity claims and certifications.

SUPPLY CHAIN SUSTAINABILITY

	REFERENCE	2018	2019	2020
New suppliers that were screened using environmental criteria	GRI 308-1	For purchases of materials and services that are critical to Calpine's core business or have inherent environmental or safety risks, Calpine has a robust five-step sourcing process to select preferred suppliers. We monitor key performance indicators (KPIs) such as OSHA recordables and insurance coverage for these suppliers to ensure they continue to meet all requirements. We also apply a risk matrix to assess a supplier's risk profile based on past performance in categories such as operational, safety, and cybersecurity risks.		
Supplier spend percent on diverse suppliers ^{[1], [2], [3]}	GRI 204-1	9%	9%	9%
Percent of diverse suppliers as total of all suppliers ^[4]	-	19%	19%	19%

^[1]Diverse suppliers as defined by Dunn & Bradstreet and/or the National Minority Supplier Development Council.

^[2]Total spend for purchase orders only, does not include fuel spend.

^[3]Total suppliers is inclusive of purchase order suppliers only.

^[4]For POs only.



CONTENT INDEX



GRI AND SASB CONTENT INDEX

TOPIC	REFERENCE	REPORT SECTION
ENVIRONMENTAL		
Environmental Management		
Environmental fines and penalties	GRI 307-1	Environmental Management
Greenhouse Gas (GHG) Emissions and Climate Change		
GHG emissions intensity (kgCO ₂ e / MWhnet)	GRI 305-4	Greenhouse Gas Emissions
Gross global Scope 1 emissions (metric tons CO ₂ e)	SASB IF-EU-110a.1	Greenhouse Gas Emissions
Percentage of gross global Scope 1 emissions covered under emissions-limiting regulations		Greenhouse Gas Emissions
Percentage of gross global Scope 1 emissions covered under emissions-reporting regulations		Greenhouse Gas Emissions
Number of customers served in markets subject to renewable portfolio standards (RPS)	SASB IF-EU-110a.4	Greenhouse Gas Emissions
Scope 1 GHG emissions (metric tons CO ₂ e)	GRI 305-1	Greenhouse Gas Emissions
Air Quality Management		
Air emissions (metric tons) of the following pollutants:		
NO _x (excluding N ₂ O)	SASB IF-EU-120a.1 and GRI 305-7	Air Quality
SO _x	SASB IF-EU-120a.1 and GRI 305-7	Air Quality
Particulate matter (PM ₁₀)	SASB IF-EU-120a.1 and GRI 305-7	Air Quality
Lead (Pb)	SASB IF-EU-120a.1	Air Quality

TOPIC	REFERENCE	REPORT SECTION
Mercury (Hg)	SASB IF-EU-120a.1	Air Quality
Water Management (MegaLiters)		
Total water withdrawal	GRI 303-3	Water Management
Surface water		
Groundwater		
Seawater		
Produced water		
Third-party water	SASB IF-EU-140a.1	Water Management
Percentage of total water withdrawal in a region of High or Extremely High Base Water Stress		
Total water discharge	GRI 303-4	Water Management
Surface water		
Groundwater		
Seawater		
Produced water		
Third-party water	GRI 303-5	Water Management
Total water consumption		
Surface water		
Groundwater		

TOPIC	REFERENCE	REPORT SECTION
Seawater		
Produced water	GRI 303-5	Water Management
Third-party water		
Percentage of total water consumption in a region of High or Extremely High Base Water Stress	SASB IF-EU-140a.1	Water Management
Water injected into the steam field at The Geysers	-	The Geysers

PEOPLE AND COMMUNITIES

Occupational Health and Safety

Workers covered by an occupational health and safety management system	GRI 403-8	Occupational Health and Safety
Facilities with zero recordable safety injuries	-	Safety Performance

Employee Rates

Total Recordable Incident Rate (TRIR)	GRI 403-9 and SASB IF-EU-320a.1	Safety Performance
Lost Time Incident Rate (LTIR)		Safety Performance
Fatalities	GRI 403-9 and SASB IF-EU-320a.1	Safety Performance

Contractor Rates

Total Recordable Incident Rate (TRIR)	GRI 403-9 and SASB IF-EU-320a.1	Safety Performance
Lost Time Incident Rate (LTIR)		Safety Performance
Fatalities	GRI 403-9 and SASB IF-EU-320a.1	Safety Performance

TOPIC	REFERENCE	REPORT SECTION
Percentage of employees who completed safety training	GRI 403-10	Occupational Health and Safety

Emergency Preparedness and Response

Number of Spills—Metric Events	-	Spills
Volume of Spills—Metric Events	-	

Employee Relations

Total employees counts:	-	Employment at Calpine
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Employee Diversity

Gender	GRI 405-1	Employment at Calpine
Age Range		
Race		
New hires by gender and age group	GRI 401-1	Employment at Calpine
Employee turnover by gender and age group		

GOVERNANCE

Corporate Governance and Business Ethics

Number of hotline inquiries related to Code of Conduct violations	-	Business Ethics
Percentage of employees who have acknowledged the Code of Conduct	-	Business Ethics

Government Relations

PAC contributions	GRI 415-1	Political Contributions
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TOPIC	REFERENCE	REPORT SECTION
Cybersecurity		
Number of reportable incidents of non-compliance with physical and/or cybersecurity standards or regulations	SASB IF-EU-550a.1	Cybersecurity
Supply Chain Sustainability		
New suppliers that were screened using environmental criteria	GRI 308-1	Supply Chain Management
Supplier spend percent on diverse suppliers	GRI 204-1	Supplier Diversity
Percent of diverse suppliers as total of all suppliers	-	Supplier Diversity
SASB Activity Metrics		
Number of retail customers served:		
Residential customers	SASB IF-EU-000.A	Retail Services
Commercial customers		
Industrial customers		
Total electricity delivered to:		
Residential customers	SASB IF-EU-000.B	Retail Services
Commercial customers		
Industrial customers		
All other retail customers		

TOPIC	REFERENCE	REPORT SECTION
Total electricity generated	SASB IF-EU-000.D	About Calpine
Percentage of generation capacity by major energy source:		
Combined Cycle Cogeneration		
Renewables		
Simple Cycle/Other	SASB IF-EU-000.D	About Calpine
Combined Cycle Non-Cogeneration		
Percentage of electricity generated in regulated markets		
Total wholesale electricity purchased	SASB IF-EU-000.E	About Calpine

IMPORTANT LEGAL INFORMATION

This report contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Any “forward-looking statement” is made only as of the date such information was originally prepared by Calpine, and Calpine undertakes no obligation to update forward-looking statements. All statements, other than statements of historical facts, may be forward-looking statements. We use words such as “may,” “could,” “will,” “should,” “likely,” “anticipate,” “attempt,” “expect,” “intend,” “seek” “plan,” “project,” “believe,” “estimate,” “target,” “continue,” “strive,” “ensure,” “encourage,” “demonstrate” and similar expressions to identify these forward-looking statements. These statements include, among other things, statements about expectations in connection with the Company’s environmental, social and governance (“ESG”) initiatives, including with respect to: environmental management; the integration and use of sustainable energy sources and modern plant technologies; occupational health and safety performance; community and human rights impacts; employee and career development; diversity and inclusion and labor-related principles; supply chain management, risk management, including climate-related risks and opportunities, adoption of clean and reliable grid technologies and cybersecurity control; and operational and emergency preparedness and response management, including with respect to the COVID-19 pandemic.

The Company cautions that its forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. Some of the factors that could cause actual results to differ include, but are not limited to, the following: impacts to our business, operations and financial results as a result of the COVID-19 pandemic, including the ability to maintain the reliability of our electricity supply while meeting contractual demands and ensuring employee, contractor and customer health and safety; changes in demand for natural gas and geothermal energy supply, as well as carbon management solutions; changes in economic, political, and business conditions; changes in laws, regulations, other requirements or the enforcement or interpretation thereof including those related to natural gas, carbon and fossil fuel management, and climate-related initiatives; regulation and requirements of other complex governmental regulation which could adversely affect our ability to achieve operational goals; technological developments of, and substantial investments in, geothermal and renewable energy and energy storage capabilities; success and/or potential impairments of our power development and construction activities; ability to maintain cost-effective operations and our competitive industry position while pursuing decarbonization objectives and investments; ensuring the integration of energy supply into client solutions; ability of our geothermal power operations to support our operations; adverse effects on performance from the introduction or expansion of competing technologies for power generation and demand-side management tools; required expenditures and ability to implement carbon capture pilot projects; ability to reduce environmental impacts, including air quality and emissions, biodiversity, and waste and water management; ability to satisfy service, residential or commercial energy related agreements, including with respect to the production of energy through renewable energy and energy storage resources; supporting electricity demand through the maintenance and expansion of an efficient gas-fired power plant fleet while integrating renewable energy resources; ability of suppliers to satisfy purchase orders; risks related to litigation and remedial or non-compliance actions; compliance with occupational health and safety regulatory requirements; maintenance of sufficient health and safety and human rights procedures and processes throughout the value chain, including with respect to our suppliers; ability to attract, engage and retain a diverse, inclusive and skilled workforce at the employee, management and supply-chain levels; the financial and operating conditions of the supply chain; success in securing quality local and/or diverse suppliers to source and produce materials; defects in risk management; losses from, or the inability to identify and mitigate, risks inherent in operating in the global energy industry; high cost or unavailability of infrastructure, materials, equipment, supplies and/or personnel; losses of business continuity from power outages caused by weather, changes in demand, equipment maintenance or other factors; ability to minimize downtime in responding to leaks, spills, safety incidents or other emergency events that may impact operations; damage or disruptions to our power plants or losses of system loads caused by periodic wildfires in the West, particularly California and potential disruption of operations due to pandemics, war, employee and customer accidents, weather and seasonal factors, natural disasters, political events, civil unrest, cybersecurity, geopolitical, or terrorism threats, economic downturns or other causes beyond our control; and the factors set forth under the heading “Risk Factors” on pages 21 through 33 of the company’s 2019 Annual Report on Form 10-K and other annual and quarterly reports prepared by the Company. Other unpredictable or unknown factors not discussed in this report could also have material adverse effects on forward-looking statements.

This report may contain links to or information from other Internet sites. Such links and information are not endorsements of any products or services in such sites, and no information in such site has been endorsed or approved by Calpine.

Except where noted, the information covered in this report highlights the Company’s performance and initiatives in fiscal year 2020. The inclusion of information in this report should not be construed as a characterization regarding the materiality or financial impact of that information. Moreover, this report may use certain terms, including those that GRI, SASB or others may refer to as “material,” to reflect the issues or priorities of Calpine, its subsidiaries and its stakeholders. Used in this context, however, these terms are distinct from, and should not be confused with, the terms “material” and “materiality” as defined by or construed in accordance with securities, or other, laws or as used in the context of financial statements and reporting.

