Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

PG&E Corporation is a holding company whose core business is Pacific Gas and Electric Company (PG&E). PG&E is one of the largest combined natural gas and electric utilities in the United States. With approximately 24,000 employees, PG&E delivers some of the nation's cleanest energy to nearly 16 million Californians. PG&E Corporation had over $97 billion in assets as of December 31, 2020, and generated revenues of more than $18 billion in 2020.

California has long been at the forefront of fighting climate change and protecting our planet, and PG&E continues to actively embrace our state's bold climate and clean energy goals. We embrace our foundational role in achieving California's goal of carbon neutrality and transitioning the state to a decarbonized and more climate-resilient economy.

We approach this work through the "triple bottom line" framework of serving people, the planet and California's prosperity—underpinned by strong operational performance.

We remain focused on reducing our carbon footprint, advancing low-carbon policies for California and the nation, helping customers reduce their energy use with industry-leading tools and incentives, and addressing the need to adapt to changing climate conditions.

California continues to experience an increase in wildfire risk and a longer wildfire season. Today, nearly one-third of the electric lines that provide our customers with power are in High Fire-Threat District (HFTD) areas, as designated by the California Public Utilities Commission. Our Community Wildfire Safety Program includes short-, medium- and long-term plans to reduce wildfire risk and keep our customers and communities safe.

California has set an ambitious goal to achieve carbon neutrality by 2045. We're proud of our track record with renewable energy—and we're excited about the growth opportunities that a cleaner future presents for PG&E and our customers, including a strong push for more electric vehicles (EVs). We also believe clean energy should be affordable for and inclusive of all economic backgrounds.

In 2020, we delivered some of the nation's cleanest electricity to customers—about 85% greenhouse-gas free. We also continued to offer our customers a full portfolio of programs and incentives for energy efficiency, demand response, clean energy transportation and solar energy to help them meet their clean energy goals. In 2020, we brought the total number of interconnected private solar customers to over 500,000, we awarded contracts for more than 1 GW of battery energy storage, and we supported over 18,600 customers who have installed battery storage at their homes or businesses, often paired with a solar system.

We are also actively supporting the large-scale electric infrastructure needed to incorporate EV charging systems into the energy grid as one in five EVs in the country plugs into PG&E's grid. In 2020, we installed 4,180 charging ports for EVs at workplaces and multi-family dwellings—with more than one-third of the installations in disadvantaged communities—and public fast charging in support of the state's goal of 100% sales of light duty zero emission vehicles by 2035. We also offered programs to support medium- and heavy-duty fleets in their electrification.

Within our operations, PG&E is reducing emissions as part of the "Million Ton Challenge"—a voluntary five-year carbon reduction goal to avoid one million tons of greenhouse gases from our operations by 2022. In 2020, PG&E avoided more than 370,000 tons of CO2. With a total of more than 900,000 tons avoided to date, PG&E is well on its way toward its five-year goal. To accomplish this, PG&E is working to reduce methane and sulfur hexafluoride emissions from operations, save energy in facilities, and continue to deploy a smarter, cleaner fleet of company vehicles.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Reporting year	January 1, 2020	December 31, 2020	No

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C-EU0.7

(C-EU0.7) Which part of the electric utilities value chain does your organization operate in? Select all that apply.

Row 1

Electric utilities value chain

Electricity generation
Transmission
Distribution

Other divisions

Gas storage, transmission and distribution
Smart grids / demand response
Battery storage
Micro grids

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board-level committee	Led by the Committee Chair, the Sustainability and Governance Committee of PG&E Corporation's Board of Directors is comprised of individuals with primary oversight over PG&E's public policy; climate change; and environmental, social and governance (ESG) policies and practices. This includes the review of climate-related policies and programs, PG&E's disclosure on sustainability practices and performance, as well as an annual review of PG&E's sustainability practices and

	performance. The Committee is composed entirely of independent directors, as defined in the applicable company's guidelines and the committee's charter. As one example of a climate-related decision, the Committee understood the growing risks that climate change poses to Native American tribes and the role that PG&E can play in assisting tribes with decarbonization and climate adaptation. In support of this objective, the Committee decided that PG&E needed to increase its level of engagement with the Native American tribal community by adding a tribal representative to PG&E's external Sustainability Advisory Council to closely advise PG&E on issues related to decarbonization, distributed energy resource deployment, and climate resilience.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding business plans Monitoring implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	The Sustainability and Governance Committee of PG&E Corporation's Board of Directors has primary oversight over PG&E's public policy, climate change, and ESG policies and practices. This includes the review of climate-related policies and programs, PG&E's disclosure on sustainability practices and performance, as well as an annual review of PG&E's sustainability practices and performance. For example, the Committee oversees climate change-related policy positions that could affect customers, shareholders, or employees. Climate-related risks are integrated into "monitoring and overseeing progress against goals and targets for addressing climate-related issues" through regular updates and discussions with the Committee on topics including PG&E's projects that work towards California's climate and clean energy goals. In addition, the CPUC requires that members of the Board of Directors oversee climate adaptation planning for infrastructure, operations, and services.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other, please specify Executive Vice President of Corporate Affairs	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Sustainability committee	Both assessing and managing climate-related risks and opportunities	Quarterly
Other committee, please specify Climate Resilience Officer Committee	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

Given the strategic nature of climate change to our business, PG&E Corporation's Chief Executive Officer (CEO) is the highest-level executive responsible for climate change-related issues. The CEO, who reports to the PG&E Corporation Board of Directors, actively monitors climate-related issues through regular engagement and communication with senior staff and supporting PG&E team members. The CEO's role includes managing risks and opportunities associated with greenhouse gas emissions reductions as well as adapting the company's systems, operations, and planning to a changing climate and changing weather patterns.

PG&E Corporation's Executive Vice President of Corporate Affairs reports directly to the CEO and is responsible for developing and implementing strategies for all aspects of corporate affairs, including regulatory, government relations, public policy and charitable giving. This includes federal, state and local climate-related public policy; developing and implementing regulatory and legislative strategy, and strategic engagement with external stakeholders, supporting the implementation of PG&E's business objectives.

The Executive Vice President of Corporate Affairs monitors climate-related issues by co-chairing two internal committees:

· PG&E's Sustainability Leadership Council (Council): a cross-departmental committee focused on reducing the greenhouse gas footprint of PG&E's internal operations, and spearheading goals and plans toward this objective. Co-chaired with PG&E's Vice President of Business Development and Customer Engagement, the Council brings together leaders from functions such as gas and electric operations, supply chain management, corporate real estate, transportation services, environmental compliance and customer energy solutions to spearhead PG&E's Million Ton Challenge goal to avoid one million tons of cumulative greenhouse gas emissions from PG&E's operations from 2018 through 2022, compared to a 2016 baseline.
· PG&E's Climate Resilience Officer Committee: a forum where leaders from key departments across the business provide leadership, guidance and governance for climate resilience objectives that meaningfully impact PG&E and the communities we serve and help ensure the continued safe, reliable and affordable operation of PG&E's system in the face of a changing climate. Co-chaired with PG&E's Chief Risk Officer, this group of senior leaders is responsible for their respective line-of-business Climate Action Plans.

The Executive Vice President of Corporate Affairs also monitors climate-related issues by chairing an external Sustainability Advisory Council to seek ongoing feedback and guidance on issues that span our business, including climate change and clean energy. Established in 2016, the group is made up of a diverse group of recognized leaders in their fields, environmental and sustainability advocates, energy policy experts, and industry authorities and meets regularly with PG&E leaders to share insights and feedback.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Chief Sustainability Officer (CSO)	Monetary reward	Emissions reduction target	Employees at all levels, including our Chief Sustainability Officer, are eligible for monetary rewards based on achievement towards the company's key metrics and targets that relate to climate change, such as achieving greenhouse gas emission reductions and employees' success in advancing climate change policy in line with PG&E's policy goals. Employee monetary rewards are based on performance against individual and/or departmental operating plans.

All employees	Non-monetary reward	Behavior change related indicator	All employees may receive non-monetary recognition based on their management of climate change issues. For example, PG&E's Richard A. Clarke Award honors an individual or a team who have demonstrated environmental leadership. The winners have the opportunity to donate a $1,500 charitable contribution to an eligible 501(c)3 non-profit 501(c)3 organization of their choice.
All employees	Monetary reward	Energy reduction target	PG&E has annual customer energy efficiency targets that tie to company earnings, which impacts the variable compensation for all employees. The incentives are authorized under California's decoupled regulatory structure.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	PG&E's short-term time horizon is 2021.
Medium-term	1	10	California is required to reduce its greenhouse gas emissions 40% below the 1990 level. To contribute to this effort, PG&E's goal is to achieve 50% of electricity retail sales from Renewable Portfolio Standard (RPS)-eligible resources by 2026 and 60% 2030. PG&E also aims to reduce methane emissions by 20% by 2025 and 40% by 2030 (relative to a 2015 baseline). PG&E is assessing a variety of potential scenarios to meet these objectives, including associated risks and opportunities.
Long-term	10	25	PG&E's long-term horizon spans onward after 2030 toward 2045, the date by which California has an Executive Order to achieve carbon neutrality. This includes California's policy goal established by the Legislature in SB100 of 100% of retail sales from renewables or zero-carbon electricity by 2045. PG&E is assessing a variety of potential

			scenarios to meet this objective, including associated risks and opportunities.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Climate risks for PG&E are defined as those that have a strategic impact on PG&E's business of providing safe, reliable, affordable and clean energy to its customers and impact the long-term sustainability of PG&E as an enterprise. As a provider of critical infrastructure and energy services, PG&E faces a variety of risks from a changing climate, including heat waves, more frequent and extreme storms, drought, subsidence, wildfires, wind events, and rising sea levels. Building greater climate resilience involves understanding the impacts of climate change on our business and being prepared to withstand and rapidly recover from major disruptions to service caused by changing climate conditions and weather events.

Severe weather events and other natural disasters could result in severe business disruptions, prolonged power outages, property damage, injuries or loss of life, significant decreases in revenues and earnings, and/or significant additional costs to PG&E. Any such event could have a material effect on PG&E's financial condition, results of operations, liquidity, and cash flows. Any of such events also could lead to significant claims against PG&E. Further, these events could result in regulatory penalties and disallowances, particularly if PG&E encounters difficulties in restoring power to its customers on a timely basis or if the related losses are found to be the result of PG&E's practices and/or the failure of PG&E's electric and other equipment.

Under a court-developed materiality standard, information is material if there is a substantial likelihood that a reasonable investor would consider it important in deciding how to vote or make an investment decision (i.e., if the information would alter the total mix of available information). We do not view climate change as a single risk on its own, but rather a stress multiplier to existing risk and opportunity considerations that we manage in our planning. We also recognize that climate change may affect different parts of our business in different ways.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

At PG&E, risk management processes – including those related to climate risk -- are facilitated by a central group, implemented by each line of business (LOB), and overseen by senior management and the Boards of Directors. LOBs also manage climate-related opportunities through the strategic business planning process, including for customer energy efficiency and transportation electrification.

Risk Management Program Implementation: With guidance from a central program office, PG&E maintains a risk register of event-based risks and LOB risks. To manage risks, we follow a consistent enterprise-wide approach to model, measure and reduce risk. With our methodology, PG&E is able to calculate a baseline risk score and evaluate different mitigation strategies for their ability to reduce that baseline score. The methodology emphasizes identifying and prioritizing the highest safety risks.

Wildfires represent one of the risks with the highest baseline risk score. PG&E's annual Wildfire Mitigation Plan (WMP) and our Public Safety Power Shutoff Program are intended to reduce the risk of wildfires to infrastructure, property, and communities. Risk mitigations are tracked throughout the year and risk assessments are refreshed at least annually to capture the impact of mitigation strategies and to reflect changes in the operating environment. The risk management program provides transparency and accountability for risk reduction progress.

The senior-most executive of each LOB maintains a Risk and Compliance Committee, which has oversight responsibility for all associated activities for risk and compliance programs within their organization, including those related to climate change. The Committee ensures that activities related to enterprise and operational risk and compliance management within their respective organizations are adequate and effective. Resource availability issues are escalated to other forums for resolution.

The Boards and their committees have oversight responsibility for risk management in their respective areas, including compliance and public policy, public and employee safety, operational excellence, and investments to enable a low-carbon future.

Asset-level: On an ongoing basis, PG&E assesses the potential physical risks of climate change to our system. PG&E established an internal Climate Resilience Officer Committee to coordinate work across enterprise risk management; internal culture, integration and planning; and external engagement. PG&E maintains emergency response plans and procedures to address a range of near-term risks and uses its risk-assessment process to prioritize infrastructure investments for longer-term risks associated with climate change.

Assessment: We proactively track and evaluate climate-related risks. In 2020, PG&E launched a multi-year Climate Vulnerability Assessment (CVA), the results of which will help PG&E target investments to infrastructure that is most vulnerable to climate impacts and that could significantly impact customers in the event of service disruption. As part of this effort, in 2021, PG&E's Climate Resilience Team will begin a multi-year effort to engage with disadvantaged/vulnerable communities, on a regional basis, on the technical analysis of the CVA. PG&E will continue this process as we work towards a submittal to the CPUC by 2024.

As part of this assessment, PG&E is reviewing the company's critical operations and services to understand how future climate conditions may impact PG&E's ability to deliver energy to customers. This will also include an assessment of critical non-energy assets and is designed to cover the level of risk, adaptive capacity, and hazards to physical assets and employee health and safety.

Example - Physical Risk (Wildfires):
Today, nearly one-third of the electric lines that provide our customers with power are in High Fire-Threat District (HFTD) areas, as designated by the CPUC.

PG&E's 2021 WMP is intended to reduce the risk of wildfires in the HFTD areas. For oversight, PG&E established a Wildfire Risk Governance Steering Committee in 2020. The Committee reviews and approves the workplans for the most critical wildfire risk mitigation programs to ensure they are in alignment with PG&E's new risk model and monitors regular reporting of work completed and quality of results.

At the individual WMP program level, PG&E has developed quality monitoring and audit plans tailored to each program. For System Hardening and Enhanced Vegetation Management programs, the operating LOB validates that the work conducted is accurate and complete while the program data verification is validated by PG&E's Quality Assurance or Internal Audit teams. Together, the quality monitoring and auditing program validates the completion of work and the quality of the program data; findings are shared with LOB leadership for corrective action.

PG&E's WMP project management office (PMO) produces both a monthly status update and a comprehensive quarterly WMP report. The PMO provides on-going oversight and direction to the WMP program leaders. In addition, the status and tracking reports provide PG&E leadership, and ultimately the PG&E Corporation Board, visibility into the different elements of the WMP and gives them the information they need to monitor and, when needed, make adjustments to the program.

Example - Low-Carbon Transition Risk (Meeting California's Clean Energy Goals):
PG&E faces regulatory non-compliance risks associated with the California Renewable Portfolio Standard (RPS) program. California passed SB 100 in September 2018, increasing the state's RPS target to 60% by the end of 2030 and requires 100% from eligible renewables and zero-carbon resources by the end of 2045.

PG&E's Energy Policy and Procurement organization works in conjunction with various internal committees to discuss the RPS program and ensure that PG&E's activities are adequate and effective, and that resources are available as needed. In addition, the Sustainability and Governance Committee of the Board maintains oversight through regularly scheduled meetings that follow a work plan of subjects established each year, to the extent such subjects can be foreseen. Finally, the CPUC and other regulatory agencies actively oversee PG&E's RPS program and its contributions to California's clean energy goals.

In 2020, more than 35% of our supplied electricity came from RPS-eligible sources and we are well on our way to meet the state's 60% by 2030 renewable energy mandate. As of February 2021, PG&E's RPS-eligible portfolio included 239 contracts for more than 6,700 MW of contracted capacity. PG&E also has 51 utility-owned RPS-eligible generation facilities representing more than 450 MW of additional capacity. Two projects under contract, including a 50 MW solar project and a 1 MW bioenergy project, began delivering renewable energy to customers in 2020.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Among many areas of focus, the California Air Resources Board's (CARB) Scoping Plan includes various methods of reducing GHG emissions from natural gas. These regulations include more aggressive energy efficiency programs to reduce natural gas end use and increased RPS, which reduces noncore gas load. Non-compliance with these regulations could include RPS-related financial penalties, loss of financial incentives, and reputational risks. California's Executive Order B-55-18 sets a state-wide goal to achieve carbon neutrality by 2045 and net negative emissions thereafter. Regulatory proceedings at CARB, the CPUC, and the CEC will evaluate and develop pathways to achieve the carbon neutrality goal. Following stakeholder workshops in 2019-2020 on carbon neutrality, including scenarios for deep decarbonization, the first joint agency report and a summary document was released in March 2021 examining how the state's electricity system can become carbon neutral by 2045. The resulting regulations have the potential to reduce natural gas usage and increase natural gas costs, which may impact the future of natural gas delivery. PG&E is taking steps to align its gas business with California's

		decarbonization and carbon neutrality goals. This includes participating in a stakeholder process on California's Gas System in Transition. In 2019, phase 1 of this initiative identified a long-term trend towards decreased natural gas throughput and an increase in capital and ongoing maintenance costs of the gas delivery system. If unmanaged, these trends could, “lead directly to higher rates and potentially higher gas bills for those who continue to use gas if the gas delivery system footprint remains static.” Phase 2 of the initiative concluded in early 2021 with a final report—laying out a proposed approach to long-term gas planning for California that aims to reduce gas system costs, promote equity, ensure a just transition for gas workers and maintain a financially viable gas utility. The report calls for collective action across state agencies and can be used to support the CPUC in its gas system planning. The designated LOB Risk and Compliance Committees within PG&E integrate these considerations into PG&E’s risk management process through regular tracking and discussion to help ensure that activities are adequate and effective, and that resources are available as needed.
Emerging regulation	Relevant, always included	PG&E routinely analyzes how potential and emerging regulations, particularly energy and environmental regulations at the state or federal levels, might impact our business. This includes assessing factors such as the extent to which they represent timely, durable, environmentally effective and affordable policy and energy solutions. We remain committed to climate actions to reduce greenhouse gases, as well as adapting to changing climate conditions and supporting efforts to make the communities we serve more resilient to climate threats. For example, the CPUC completed a proceeding in 2020 focused on how California’s investor-owned utilities (IOUs) should incorporate climate adaptation into their planning and operations. The CPUC provided guidance on how investor-owned utilities should assess and adapt to California’s vulnerabilities caused by climate change, and how utilities should engage with the most vulnerable and disadvantaged communities on climate adaptation so these communities are not left behind the rest of the state. This includes submitting vulnerability assessments every four years, including climate risks, and creating interdepartmental climate change teams, among other requirements. While PG&E is already taking action to adapt to climate change, as this process develops we may face a regulatory risk of the CPUC developing criteria for IOUs that require changes to operations for

		which PG&E is not currently planning or could increase PG&E's cost of compliance. Our Climate Resilience Officer Committee, which includes leaders from key departments across the business, provides leadership, guidance and governance for climate resilience objectives that meaningfully impact PG&E and the communities we serve. Additionally, the designated LOB Risk and Compliance Committees within PG&E integrate these considerations into PG&E's risk management process through regular tracking and discussion to help ensure that activities are adequate and effective, and that resources are available as needed.
Technology	Relevant, always included	Technological advancements are occurring rapidly in the energy industry. PG&E routinely monitors technological advancements, and how these advancements might impact business outcomes, such as increased self-generation by customers, increases in distributed energy resources, advances in energy efficiency and improvements in battery technologies, among others. Failure to fully understand, anticipate, and incorporate technological advancements into PG&E's risk assessment might result in lost opportunities for engaging with market participants and customers in new business areas. As an example, PG&E aims to maintain a sulfur hexafluoride (SF6) leak rate of below 1% annually (with a stretch goal of 0.7%) and is exploring SF6-free electrical equipment. To do so, we are dependent on the emerging SF6-free alternative technologies available in the market for gas-insulated switchgear and gas-insulated dead tank circuit breakers. We are testing new technologies and solutions, collaborating with other likeminded utilities, and vendors. However, integrating SF6-free technology will take time and performance of new technology is essential to meeting our goal and maintaining safety and reliability. The designated LOB Risk and Compliance Committees within PG&E integrate these considerations into PG&E's risk management process through regular tracking and discussion to help ensure that activities are adequate and effective, and that resources are available as needed.
Legal	Relevant, sometimes included	PG&E routinely monitors the likelihood of federal legislative or regulatory action that might impact PG&E's business, although California's environmental laws and regulations typically exceed federal standards. For example, in March 2020, the Trump Administration finalized a rollback of the Corporate Average Fuel Economy (CAFE) (i.e., motor vehicle fuel economy standards) and GHG standards for light duty

		vehicles starting with model year 2021. In 2020, PG&E joined the Zero Emission Transportation Association as a founding member to advocate for federal policies to accelerate transportation electrification, including stricter tailpipe emissions standards. In April 2021, the National Highway Traffic Safety Administration (NHTSA)—under the direction of the Biden Administration—released a proposed rule that would repeal the Trump Administration's rollback. The proposed rule does not reconsider the revocation of California's waiver but this could occur in a separate, independent EPA proceeding in the future. Uncertainty surrounding fuel and GHG standards and the future of California's ZEV waiver could slow uptake of EVs in the state, leading to underutilization of PG&E's EV charging network and impact revenue associated with electricity sales. The designated LOB Risk and Compliance Committees within PG&E integrate these considerations into PG&E's risk management process through regular tracking and discussion to help ensure that activities are adequate and effective, and that resources are available as needed. Central to our overall approach is engaging at the federal, state and international levels through a variety of coalitions.
Market	Relevant, always included	PG&E is actively engaged in market-related activities in its service area, including investing in customer programs to reduce energy use, increase renewable energy and storage, electrify end uses (including transportation and buildings), and decarbonize natural gas supply, among other areas. For example, PG&E is in the process of interconnecting renewable natural gas (RNG) projects to decarbonize gas supply. In total, seven projects are expected to provide roughly 16.5 million cubic feet of gas per day. PG&E expects to begin injecting pipeline quality gas from the first project in the fall of 2021 and three others by the end of the year. The market is in the early stages and largely driven by demand from the transportation sector through the Low Carbon Fuel Standard. There is a risk that the market may not value RNG and other sources such as hydrogen at the levels necessary to incorporate it as part of core gas supply or for large end users. The designated LOB Risk and Compliance Committees within PG&E integrate these considerations into PG&E's risk management process

		through regular tracking and discussion to help ensure that activities are adequate and effective, and that resources are available as needed.
Reputation	Relevant, sometimes included	PG&E faces reputational risks associated with how our customers perceive our policies, actions, and plans to address climate change. PG&E monitors these perceptions and manages reputational risk by complying with relevant laws and regulations and seeking opportunities to go beyond compliance, sharing our plans and progress in a transparent manner, and proactively engaging with stakeholders to stay abreast of climate change issues facing PG&E and our customers, including increasing wildfire risk, and being a constructive voice in developing solutions. For example California continues to experience an increase in wildfire risk and a longer wildfire season. High winds can cause tree branches and debris to contact energized electric lines, damage our equipment and cause a wildfire. We may need to turn off power during severe weather to help prevent wildfires. This is called a Public Safety Power Shutoff or PSPS event. We know that losing power disrupts lives, and we are providing customers with more resources before, during and after PSPS events. We measure a composite score of customer satisfaction and are committed to improving satisfaction, which we benchmark against our peers. In 2018, our customer satisfaction rose to a high of 77.3, driven by customer satisfaction with service reliability and pricing. In 2019, due to PG&E's Chapter 11 filing and multiple PSPS events to mitigate wildfire risk, customer satisfaction with PG&E decreased from the prior year – and the 2020 score remained consistent at 72.0. The designated LOB Risk and Compliance Committees within PG&E integrate these considerations into PG&E's risk management process through regular tracking and discussion to help ensure that activities are adequate and effective, and that resources are available as needed.
Acute physical	Relevant, always included	PG&E faces the risk of increased wildfire frequency and intensity in its service area. In 2020, California endured the worst fire year in its history, according to the California Department of Forestry and Fire Protection, as more than four million acres burned. Wildfires threaten the safety of customers as well as PG&E assets such as electric transmission and distribution lines, gas infrastructure and hydroelectric assets -- also creating the need for emergency response across PG&E crews. Wildfires also increase the risk of customer outages and

		increased risk of erosion and landslides in affected areas, putting communities and infrastructure assets at risk. A number of climate-related factors have contributed to the increasing risk of wildfires. For example, bark beetles and drought have contributed to record numbers of dead trees that fuel and amplify wildfires. Since 2010, according to the U.S. Forest Service, more than 147 million trees have died in California. Moreover, as air temperatures rise, forests and land are drying out, increasing fire risks and creating weather conditions that readily facilitate the rapid expansion of fires. Today, nearly one-third of the electric lines that provide our customers with power are now in High Fire-Threat District (HFTD) areas, as designated by the CPUC. PG&E's 2021 Wildfire Mitigation Plan is intended to reduce the risk of wildfires in the CPUC's HFTD areas. PG&E is approaching the issue with urgency to do everything we can to prevent our facilities from creating public safety risks. PG&E's Wildfire Risk Governance Steering Committee reviews and approves the workplans for the most critical wildfire risk mitigation programs to ensure they are in alignment with PG&E's new risk model and monitors regular reporting of work completed and quality of results.
Chronic physical	Relevant, always included	PG&E's infrastructure spans more than 70,000 square miles and faces a variety of risks driven by the changing climate, including heat waves, more frequent and extreme storms and wildfires, drought, subsidence, and rising sea levels. For example, PG&E faces the risk of higher inundation and flooding potential at coastal and low elevation facilities and assets due to high tides, storm runoff, and storm surges—risks that will be exacerbated by sea level rise. The risk of groundwater intrusion or increased underground buoyant forces may also be at risk of increasing due to sea level rise, which may impact underground facilities or equipment putting assets at risk. PG&E also faces the risk of damage to substations and other gas and electric infrastructure. Completely moving and rebuilding a substation is estimated to cost at least $100 million. PG&E's multipronged approach includes: (1) Integrating climate science into key business functions and creating tools to support planning and decision-making that takes into account the future climate; for example, we are leveraging data from Cal-Adapt, the state's portal for climate projection data, as we strive to ensure that investments in our system will be adequate in light of more extreme weather expected in the future; (2) Engaging with utility peers and

		policymakers to advance energy sector climate resilience, stay up to date on the most recent developments in the field, and help state and federal officials in their efforts to prepare for climate change; and (3) Partner directly with customers and communities to enhance climate resilience in California. For example, PG&E offers grants to help communities through our Better Together Resilient Communities program. PG&E's Climate Resilience Officer Committee coordinates work across enterprise risk management; internal culture, integration and planning; and external engagement. PG&E also maintains emergency response plans and procedures to address a range of near-term risks and uses its risk-assessment process to prioritize infrastructure investments for longer-term risks associated with climate change.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Current regulation

Mandates on and regulation of existing products and services

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

In 2020, more than 35% of our delivered electricity came from renewable resources, nearly 43% from nuclear, over 10% from large hydro, and over 11% from fossil fuel-fired generation. SB 100, which became law in September 2018, accelerates and increases the state's previous Renewable Portfolio Standard (RPS) requirements to 50% by December 31, 2026 (previous target was 50% by 2030), 60% by December 31, 2030, and 100% of retail sales from eligible renewables and zero-carbon resources by

December 31, 2045. All of California's load serving entities, such as PG&E, are required to comply with meeting the RPS requirement.

To comply with California's RPS requirements, PG&E must deliver renewable energy to its customers at a gradually increasing rate. PG&E faces the regulatory risk of non-compliance, which invokes financial penalties. There is also a risk of increased procurement and integration costs. PG&E could be at risk of non-compliance should contracted renewable energy supply projects underdeliver, there are delays in permitting and construction of new renewable energy supply projects and/or delays in permitting and construction of transmission infrastructure to deliver renewable energy to PG&E.

Time horizon

Short-term

Likelihood

Very unlikely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

25,000,000

Explanation of financial impact figure

PG&E's cost of compliance risk for not meeting California's RPS is $50 per MWh, up to $25 million per year. This figure is determined by the California Public Utilities Commission and was codified in CPUC Decision: D.14-12-023; D.18-05-026.

Cost of response to risk

2,600,000,000

Description of response and explanation of cost calculation

PG&E's renewable energy portfolio costs in 2020 were approximately $2.6 billion.

All of California's load serving entities, such as PG&E, are required to comply with meeting the state's RPS requirement. PG&E is required to supply customers with 60% RPS-eligible electricity by the end of 2030 and 100% of retail sales from eligible renewables or zero-carbon resources by the end of 2045. PG&E must utilize a variety of approaches to achieve California's renewable energy goals, including leveraging competitive solicitations to procure renewable energy from third parties and owning

renewables projects ourselves. We work with regulators, environmental organizations and other stakeholders to ensure that we continue to manage our portfolio responsibly and in a way that is affordable for customers. The majority of PG&E's renewable resources come from contracts with third-party renewable energy companies.

As of February 2021, PG&E's RPS-eligible portfolio included 239 contracts for more than 6,700 MW of contracted capacity. PG&E also has 51 utility-owned RPS-eligible generation facilities representing more than 450 MW of additional capacity. Two projects under contract, including a 50 MW solar project and a 1 MW bioenergy project, began delivering renewable energy to PG&E customers in 2020. These additions helped PG&E deliver over 35% of electricity from eligible renewable sources in 2020 and continue to meet annual RPS requirements. PG&E implements several strategies to manage regulatory risks, compliance, and costs. PG&E develops an integrated resource plan, as required by the CPUC, to ensure that future energy portfolios meet California's clean energy goals in a reliable and cost-effective manner. PG&E aligns its procurement strategy with near, medium and longer-term RPS obligations. PG&E has direct contact with renewable project developers and closely monitors the CAISO interconnection queue.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Current regulation

Mandates on and regulation of existing products and services

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

Uncertainty around state and federal GHG regulations may result in increased costs to PG&E customers. For example, at the state level, ARB's Short-lived Climate Pollutant Strategy (SLCP) includes policies that affect PG&E and our service area, including minimizing pipeline emissions (leaks and venting) and increasing renewable natural gas, among others. The ARB Oil and Natural Gas Regulation impacts PG&E compressor stations and natural gas storage facilities such as McDonald Island. The CPUC Gas Leak Abatement rulemaking resulting from SB 1371 minimizes natural gas leaks and advances GHG reduction goals. At the federal level, the recent Protecting our Infrastructure of Pipelines and Enhancing Safety (PIPES) Act of 2020 added

requirements for gas operators to minimize methane emissions that may add to CARB's and the CPUC's regulations.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

3,650,000

Explanation of financial impact figure

ARB's Oil and Gas Regulation addresses financial implications of non-compliance. If requirements are not met within a certain time frame, there is a $10,000 per day per violation. The potential impact figure (maximum) provided would be the worst-case scenario of PG&E not meeting this compliance obligation for a full year. In addition, the CPUC adopted restrictions on rate recovery beginning in 2025 for methane emissions greater than 20% below the 2015 baseline.

Cost of response to risk

55,000,000

Description of response and explanation of cost calculation

For the CPUC Gas Leak Abatement rulemaking, PG&E's 2018-2019 Compliance Plan is estimated to cost approximately $55,000,000. Management costs include the implementation of best management practices as identified in PG&E's 2020-2021 Methane Abatement Best Practices Compliance Plan, including blowdown reductions; a 3–year leak survey cycle; a special leak survey; and super-emitter surveys and leak repairs.

In 2015, the CPUC issued a rulemaking to implement SB 1371, which requires rules and procedures to minimize natural gas leakage from CPUC-regulated natural gas pipeline facilities. Both the ARB Oil and Gas Regulation and the CPUC Gas Leak Abatement rulemaking require that PG&E conduct leak survey and repairs throughout PG&E's natural gas transmission and distribution operations. This requires investment in both mobile and stationary leak survey technology as well as R&D into new technologies.

PG&E's Natural Gas Leak Abatement Program includes annual methane emission tracking and reporting as well as the submission of a biennial best practice compliance plan (2020 Leak Abatement Compliance Plan), which is prepared in accordance with the CPUC's decision. The plan details activities taken to reduce emissions. For example, PG&E has made several programmatic changes to its leak and emission management practices to reduce methane emissions. PG&E's gas distribution organization moved to a three-year leak survey cycle on January 1, 2018. PG&E also continued to make improvements to its distribution leak management practices in 2018 with the Super Emitter leak abatement program. PG&E implemented an approach to identify larger leaks (greater than or equal to 10scfh), by conducting annual surveys to target these larger emissions. Focusing repairs on large leaks in a gas distribution system has the potential to be an effective way to reduce methane emissions because their contribution is disproportionally large: a 2014 WSU study found that 56% of methane emissions were due to only 2% of leaks. As a result of the Super Emitter program, PG&E identified and repaired super emitter leaks, resulting in the savings of 0.0290 billion cubic feet (BCF) of natural gas.

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical

Other, please specify

Increased number and severity of heat waves / increased nighttime temperatures

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

Average and extreme temperatures are projected to increase in PG&E's service area over the course of the 21st century; coastal areas will remain cooler than inland areas, but both will rise. Increasing temperatures and more intense and prolonged heat events represent an increased risk to PG&E's electrical system and to the safety of PG&E's customers.

Peak loads are expected to increase with increasing temperature due to direct impacts of ambient temperatures on equipment and direct impacts on electricity demand driven by rising air conditioning installation and usage.

The impacts of climate change on PG&E infrastructure are already a reality. Record breaking extreme heat and heat waves are now a regular occurrence throughout California. In the past two decades, PG&E's electric distribution system has experienced multiple, major outage-causing events associated with heat waves and peak loads. In July 2006, a heat event led to over 740,000 customer outages. During extreme heat days, PG&E must suspend the provision of power during Flex Alerts, which are voluntary calls for consumers to conserve electricity, when energy demand approaches available capacity. PG&E responded to five Flex Alerts in 2020, notifying 65,000 SmartRate customers and 103,000 Peak Day Pricing customers, both of which are voluntary demand response rates that encourage customers to reduce energy consumption on the hottest summer days.

In August 2020, a historic heat storm affected the western U.S. for several consecutive days. PG&E's customers played an instrumental role through their participation in demand response programs. Energy supply shortages led to two rotating power outages in the CAISO footprint. During the event, both residential and business customers participated in multiple demand response programs, helping to reduce energy demand by about 220 MW. However, this heat event was also associated with over 200 distribution transformer outages across PG&E's service area.

Power outages during high heat events present a public safety risk. PG&E is committed to providing safe and reliable power service across our service area. Findings from PG&E's Climate Vulnerability Assessment and other research efforts will be considered in the risk and strategic planning process.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

150,000,000

Potential financial impact figure – maximum (currency)

300,000,000

Explanation of financial impact figure

The July 2006 California heatwave was estimated to have a $150-300 million direct impact on PG&E due to costs to repair infrastructure and the increased price of

electricity due to peak-demand. Of this amount, the total costs to restore service and repair facilities from these events amounted to approximately $62 million. While this is a singular event, extreme heat events, even if rare, are projected to increase in frequency due to climate change.

Cost of response to risk

44,000,000

Description of response and explanation of cost calculation

PG&E's expenditures for demand response (DR) programs in 2020 were approximately $44 million. This figure is calculated by tracking costs associated with the implementation of the programs, which enable customers to reduce energy use during periods of peak demand.

PG&E's 2021 Climate Vulnerability Assessment for the San Francisco Bay Area found that the number of days above 95 degrees F will increase from 11 days, historically, to 53 days by the end of the century. Extreme heat not only threatens public safety due to increased health risks but also places a strain on our electricity system and infrastructure as there is greater demand on the system to meet surging electricity demand for air conditioning. During extreme heat days, PG&E must conserve electricity and shift demand. PG&E may need to increase inspection and replacement operations of sensitive equipment. PG&E can update design standards for sensitive equipment to increase reliability during heat events. PG&E's Climate Resilience Team is conducting a full Climate Vulnerability Assessment to understand the exposure, vulnerability, and potential impact of extreme heat on PG&E's assets and operations. An internal Climate Resilience Officer Committee oversees this work.

After the 2006 heat storm, PG&E made a number of improvements: increased emergency stock levels of equipment, installed SmartMeters to aggregate transformer loads in real time, added new tools for load growth planning to predict system overloads, and is working to update applicable company standards. Today, PG&E's DR programs (e.g., SmartRate, Peak Day Pricing, SmartAC [residential], Base Interruptible Program, Capacity Bidding Program [commercial & industrial]) and smart meter data enable customers to reduce energy use during periods of peak demand. For example, the SmartAC Program (offered May-October) allows PG&E to send a signal to a customer's air conditioner, cycling it to use less energy. In 2020, approximately 160,000 residential customers participated in the DR programs we offer, along with more than 100,000 larger commercial and industrial customers.

As a result of our DR programs, PG&E and our customers had the ability to provide up to 350 MW of load reduction in 2020—about the capacity of a large conventional power plant. This allowed us to leverage our programs on numerous occasions in 2020 to reduce demand and ensure reliable electric service for customers.

Comment

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

Storm events in PG&E's service area can significantly impact PG&E's operations. Storm events can cause direct damage to equipment and subsequent customer outages, as well as impair both essential day-to-day operations as well as emergency response operations before and after a storm—all of which may increase operational costs, increase the risk to worker and public safety, and decrease the reliability of the electrical grid to provide critical service to PG&E's customers.

PG&E participated in the Bay Area Council Economic Institute's 2015 Surviving the Storm report, which looked at the economic impact of a Superstorm and associated flooding on the Bay Area economy. The report concluded that a Superstorm and the associated flooding would be detrimental to PG&E both physically and economically, identifying several Bay Area substations that are at risk. The report identifies the potential for a $10.4 billion impact on the greater San Francisco Bay Area economy with PG&E's estimate of a $125 million impact based on six of PG&E's Bay Area substations. This estimate represents the associated outage cost—or loss of value—to PG&E customers, not the cost of replacing or repairing equipment. In the Bay Area, 355,000 residents (6% of the total exposed) live within a 100-year floodplain while over a million (17%) live in a 500-year floodplain.

PG&E's Climate Vulnerability Assessment is identifying all assets and operations that will be exposed to extreme storm events such as high wind, high rain, and heavy snow, to identify which assets and operations are most sensitive to these hazards. The vulnerability assessment will provide needed data and options to inform asset management strategy and other processes to enable PG&E to make investments that are prioritized to mitigate these potential risks.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

125,000,000

Explanation of financial impact figure

In April 2015, the Bay Area Council Economic Institute published “Surviving the Storm,” a report that finds that a Superstorm and the associated flooding could have a $10.4 billion impact on the Bay Area economy. Included in the report is PG&E’s estimate that disruption to our Bay Area substations could result in an economic impact of up to $125 million. This estimate represents the associated outage cost—or loss of value—to PG&E customers, not the cost of replacing or repairing equipment.

Cost of response to risk

205,000,000

Description of response and explanation of cost calculation

The CPUC allows utilities to recover the reasonable, incremental costs of responding to catastrophic events through a Catastrophic Event Memorandum Account (CEMA). The CEMA authorizes PG&E to recover costs incurred in connection with a catastrophic event that has been declared a disaster or state of emergency by competent federal or state authorities. The recorded costs associated with the repair of facilities and restoration of service associated with the 2019 Winter Storms in CEMA totaled $205 million as the 2019 Winter Storms were estimated to have damaged approximately 4,900 of PG&E’s Electric Distribution facilities, eight Electric Generation facilities, 300 Gas Distribution facilities, and disrupted service to approximately 2.3 million electric customers and approximately 300 gas customers across PG&E’s service area. There were no CEMA declared storms in 2020.

Severe storms could have both financial and operational impacts on PG&E. Severe storms can cause infrastructure damage, customer outages, and increase operational costs to mitigate these impacts, PG&E can identify upgrades to equipment standards, asset management strategies, and priority processes to ensure mitigation efforts are implemented in areas of increased risk and areas of high socio and economic vulnerability.

PG&E’s Climate Resilience Team is conducting a full Climate Vulnerability Assessment to understand the exposure, vulnerability, and potential impact of extreme storm events

on PG&E's assets and operations. An internal Climate Resilience Officer Committee oversees the work to enable the Climate Resilience Team to work broadly across enterprise risk management, integration and planning, and community engagement. PG&E is integrating climate data into the strategic risk planning process, and in June 2020 filed the second Risk Assessment Mitigation Phase report with the CPUC.

PG&E meteorologists have implemented a storm model that provides the utility advance forecasts of wind, rain, lightning, and heavy snow event intensities in terms of outage estimates for each local PG&E Division and storm timing. PG&E maintains emergency response plans and procedures to address extreme storms, and uses its risk-assessment process to assess infrastructure investments for longer-term risks associated with climate change. Thanks to these actions, PG&E will be better positioned to mitigate, prepare, and respond to severe storms.

Comment

Note: the $205 million does not equate to PG&E's revenue requirement request in the 2019 CEMA filing.

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical

Other, please specify

Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

PG&E owns and operates one of the nation's largest investor-owned hydroelectric systems, which relies on nearly 100 reservoirs located primarily in the higher elevations of California's Sierra Nevada and Southern Cascade mountain ranges. Climate change projections indicate that while the average levels of precipitation in PG&E's service area will vary over time, extreme wet and extreme drought periods are expected to increase in occurrence. PG&E faces the risk of reduced hydroelectric output because of an increased number of dry years, and additional spill past fully loaded powerhouses during the few very wet years.

As changes in the atmospheric water cycles happen and as temperatures continue to increase, it is highly expected that changes in groundwater will occur due to both natural and anthropogenic causes; land subsidence in areas of increased groundwater extraction is a long-term risk to PG&E's infrastructure and operations.

Precipitation patterns tend to vary significantly from year to year and, nationwide, California has the greatest annual coefficient of variation in annual precipitation. One of the wettest water years on record was 2017 and both 2015 and 2021 were among the driest on record. Historically, nearly two-thirds of California's storms that occur during the November through March five-month wet period are classed as Atmospheric Rivers (AR) type events. As a result of climate change, these AR events have entered California with significantly warmer temperatures in recent years -- bringing rainfall rather than snowfall to increasingly higher elevations. The decline in a measurable snowpack that would normally melt and runoff following the five-month wet season presents a trend of increased challenges for the hydro scheduler/reservoir planner.

Extreme precipitation can also cause a sharp increase in water levels, placing stress on hydro infrastructure and reinforcing the importance of dam safety measures. Increased evapotranspiration and loss of snowpack reflectivity is occurring from climate change. The increased loss of moisture from the watershed results in less inflow to reservoirs and the increased loss of soil moisture stresses watershed vegetation, which in turn increases fire risk on the watersheds. In addition to an increased number of PSPS outages, there is increased fire risk to hydroelectric facilities in the watersheds with consequent post-fire erosion and debris flow risk.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The annual cost of impacts of climate change on hydroelectric production would vary greatly by year. In 2017, the Pacific Institute released an assessment of the costs to California of lost hydroelectricity during the five years of drought from 2012 to 2016. The report found that the five years of drought led to an increase in electricity costs of more than $2.45 billion and the additional combustion of fossil fuels for electric generation also led to a 10% increase in the release of carbon dioxide from California power plants.

Cost of response to risk

151,000,000

Description of response and explanation of cost calculation

The $151 million figure above represents the average annual operations and maintenance costs for PG&E's hydroelectric operations during 2011 to 2014, the primary years of California's recent drought.

California’s recent drought saw near historically low levels of precipitation. During the drought, PG&E needed to conserve water in our reservoirs in the spring so more would be available during summer months. PG&E’s Climate Resilience Team is conducting a full Climate Vulnerability Assessment to understand the exposure, vulnerability, and potential impact projected from changes in precipitation patterns on PG&E’s assets and operations. An internal Climate Resilience Officer Committee oversees the work to enable the Climate Resilience Team to work broadly across enterprise risk management, integration and planning, and community engagement.

PG&E worked to reduce the required water releases from our reservoirs to lessen the drought’s impact on the environment and prolong availability of water for downstream users’ needs. Longer-term, development and calibration of new distributed runoff forecasting models are enabling PG&E to improve planning and better manage increased variability and extremes. Possible storage projects that would help mitigate the expected snowpack decline could include the development of pump storage projects, new reservoir capacity, and additional capacity from other energy sources. PG&E is engaging with state and local stakeholders and has adopted strategies such as maintaining higher winter carryover reservoir storage levels, reducing discretionary reservoir water releases, and collaborating on research and new modelling tools. As a result, PG&E will be able to improve planning and better manage increased water variability and extremes as it works to balance the broader community and ecosystem need for water with the need to generate and supply electricity for its customers.

Comment

Cost of management is difficult to determine as each year is dependent on the amount of precipitation received and the temperature (if the precipitation falls as rain or snow). There is an opportunity cost of winter and spring peak generation that is foregone for summer generation, but that is a calculated/optimized decision based on our water supply forecast and schedule optimization results - not a cost of management but a cost associated with the lack of precipitation.

There are some opportunities to address the expected increase in the coefficient of variation for annual precipitation in the Sierra Nevada Region. PG&E’s Power Generation Water Management organization may incur additional climate change costs from some or all the following: development/enhancement of distributed modelling tools such as the PRMS Model, enhancement of existing statistical runoff forecast tools to include additional snow courses and snow sensors outside of the targeted watershed/sub-basin, and installation of additional soil moisture probes at selected snow

sensors in the mid-elevation snow zone.

PG&E's ongoing Climate Vulnerability Assessment will seek to analyze the short and long-term exposure, vulnerability, and risk of changes in atmospheric water cycles, storms, and drought periods to PG&E's hydroelectric cycle.

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical
Rising sea levels

Primary potential financial impact

Increased capital expenditures

Company-specific description

PG&E faces the risk of higher inundation and flooding potential at coastal and low elevation facilities and assets due to high tides, storm runoff, and storm surges—risks that will be exacerbated by sea level rise. This risk extends to all coastal electric, gas, and generation assets, as well as any coastal PG&E property or facilities. Assets such as substations or other coastal facilities are at direct risk if the flood protection is not sufficient for future sea level rise. Similarly, transmission towers or distribution poles may face increased water exposure that may cause direct damage or corrosion damage to electrical equipment from increased exposure to salt water. The risk of groundwater intrusion or increased underground buoyant forces may also be at risk of increasing due to sea level rise, which may impact underground facilities or equipment putting assets at risk. PG&E is assessing the risk of sea level rise and associated flooding risk as part of its ongoing Climate Vulnerability Assessment.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

In 2020, PG&E partnered with the City of Menlo Park and other stakeholders to apply for a FEMA Building Resilience Infrastructure and Communities grant which would fund the design and construction of flood protection for a PG&E coastal substation and the surrounding the community. PG&E covered the costs of the application material ($130,000) and provided a non-federal match amount ($10,000,000) required for the FEMA application. PG&E was notified in July 2021 by FEMA that the project has been selected for further review and PG&E remains committed to the match dollars.

Cost of response to risk

10,130,000

Description of response and explanation of cost calculation

In 2020, PG&E partnered with the City of Menlo Park and other stakeholders to apply for a FEMA Building Resilience Infrastructure and Communities grant which would fund the design and construction of flood protection for a PG&E coastal substation and the surrounding the community. Our application found that, if flooded from coastal storm surge, the substation would need to go offline and 300,000 customers would lose power for up to 5 days. If funded, this project would provide flood protection for the next 30 years for the substation and protect this critical infrastructure.

PG&E faces the risk of higher inundation and flooding potential at coastal and low elevation facilities and assets due to sea level rise when combined with high tides, storm runoff, and storm surges. PG&E must evaluate low elevation assets, generation, and property to determine site-specific sea-level rise risks. Where risks are identified, temporary mitigation measures are initiated while permanent engineered adaptations are planned. PG&E has an internal Climate Resilience Officer Committee to coordinate work across enterprise risk management, integration and planning, and internal and external engagement.

PG&E's Climate Resilience Team is conducting a full Climate Vulnerability Assessment to understand the exposure, vulnerability, and the potential impact sea level rise will have on PG&E's assets and operations. An internal Climate Resilience Officer Committee oversees the work to enable the Climate Resilience Team to work broadly across enterprise risk management, integration and planning, and community engagement.

Comment

The costs of preparing for sea level rise will depend on site specific information, including the existing elevation of assets and surrounding land characteristics. Replacement or relocation of equipment or facilities can run in the thousands to millions of dollars, depending on the infrastructure asset. Levee design, permitting, and

construction for individual sites can run into the tens of millions of dollars. Completely moving and rebuilding a substation is estimated to cost at least $100 million.

Identifier

Risk 7

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased likelihood and severity of wildfires

Primary potential financial impact

Increased direct costs

Company-specific description

PG&E is experiencing increased wildfire frequency and intensity in its service area. Wildfires threaten the safety of customers as well as PG&E assets such as electric transmission and distribution lines, gas infrastructure and hydroelectric assets -- also creating the need for emergency response across PG&E crews. Wildfires also increase the risk of customer outages and increased risk of erosion and landslides in affected areas, putting communities and infrastructure assets at risk.

Numerous climate-related factors have contributed to increased wildfire frequency and intensity. For example, bark beetles and drought have contributed to record numbers of dead trees that fuel and amplify wildfires. Since 2010, more than 147 million trees have died in California. Moreover, as air temperatures rise, forests and land are drying out, increasing fire risks and creating weather conditions that readily facilitate the rapid expansion of fires.

Today, nearly one-third of the electric lines that provide our customers with power are now in High Fire-Threat District (HFTD) areas, as designated by the CPUC. PG&E's 2021 Wildfire Mitigation Plan (WMP) is intended to reduce the risk of wildfires in the CPUC's HFTD areas. PG&E is approaching the issue with urgency to do everything we can to prevent our facilities from creating public safety risks.

PG&E's 2021 WMP continues many of the actions undertaken in our 2019 and 2020 WMPs but also reflects an evolution to a more precise, technology-based approach to measure and mitigate wildfire risk, lessons learned from the 2020 WMP, and feedback received as to areas we can improve and gaps we should address.

California's climate-driven wildfire risks are increasing annually, and focused and sustained mitigation efforts are necessary to reduce the threat and impact of wildfires. Similar to previous WMPs, PG&E's 2021 WMP has three overarching goals: (1)

reducing wildfire ignition risk, (2) enhancing wildfire risk situational awareness, and (3) reducing the impact of PSPS events.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The potential financial figure is unknown but could be substantial. California law includes a doctrine of inverse condemnation that is routinely invoked in the state. If the Utility's facilities, such as its electric distribution and transmission lines, are determined to be the substantial cause of fires, and inverse condemnation applies, the Utility could be liable for property damage, business interruption, interest, and attorneys' fees without having been found negligent.

In accordance with the executed settlement agreements embodied in PG&E's Plan of Reorganization, PG&E has paid/will pay a total of approximately $25.5 billion at Plan Value in settlement of claims of wildfire victims, public entities, and subrogated insurers arising from the 2015 Butte Fire, 2017 North Bay Wildfires, and 2018 Camp Fire.

PG&E believes it is probable that it will incur a loss in connection with the 2019 Kincade fire and 2020 Zogg fires. At 3/31/2021, PG&E had recorded charges totaling $800 million and $300 million for potential losses in connection with the fires, respectively (before available insurance). The aggregate liability of each corresponds to the lower end of the range of PG&E's reasonably estimable range of losses, and is subject to change.

In 2019, CA's Governor signed into law AB 1054, establishing a state-wide fund for eligible electric utility companies to pay eligible claims for liabilities arising from wildfires occurring after 7/12/2019 caused by a participating electric utility company's equipment, subject to AB 1054 terms and conditions.

Electric utility companies that draw from the Fund will only be required to repay amounts that are determined by the CPUC in an application for cost recovery not to be just and reasonable, subject to a rolling 3-year disallowance cap equal to 20% of the utility company's transmission and distribution equity rate base and other conditions imposed by the statute.

The Fund will be capitalized with (i) $10.5 billion of proceeds of bonds supported by a charge to ratepayers, (ii) $7.5 billion in initial contributions from CA's three IOUs and (iii) $300 million in annual contributions paid by CA's three IOUs. PG&E's Wildfire Fund allocation metric is 64.2%.

On 7/1/2020, PG&E contributed an initial contribution of ~ $4.8 billion and first annual contribution of ~ $193 million to the Fund to secure participation. As of 7/1/2020, the Fund is available to PG&E to pay for eligible claims arising as of 7/12/2019.

Cost of response to risk

15,015,436,000

Description of response and explanation of cost calculation

PG&E faces the risk of increased wildfire frequency and intensity in its service area. We must reduce wildfire risks and keep customers and the communities we serve safe. As part of our ongoing efforts to mitigate wildfire threat, PG&E submitted our 2021 Wildfire Mitigation Plan to the CPUC. The Plan forecasts $15 billion in costs for the period of 2020 (actual) to 2022 (planned).

The plan expands and enhances PG&E's Community Wildfire Safety Program designed to address the growing threat of extreme weather and wildfires across our service area. The plan will continue expanded key safety work including: new grid technology; hardening of the electric system; accelerated inspections of electric infrastructure; enhanced vegetation management around power lines; and real-time monitoring and situational awareness tools to better understand severe weather impacts.

PG&E's plan includes changes to lessen the overall impacts of PSPS events while working to keep customers and communities safe:

(1) Installing 250 sectionalizing devices able to limit the size of outages so fewer communities are without power during times of highest wildfire threat; (2) Hardening 180 distribution circuit miles to increase system resiliency; (3) Meeting and exceeding state vegetation and safety standards across 1,800 miles to manage vegetation near power lines that could cause a wildfire or power outage; (4) Installing switches to redirect power and keep communities energized; (5) Installing microgrids that use generators to keep the electricity on during PSPS events; (6) Utilizing additional state-of-the-art weather tools, including weather stations and high-definition cameras, to improve extreme weather forecasting that will help better predict and target where and when PSPS events are necessary; (7) Monitoring conditions in real-time from our Wildfire Safety Operations Center to coordinate wildfire prevention and response; (8) Inspecting all lines and structures in Tier 3 areas and one-third of lines and structures in Tier 2

areas on the CPUC Fire-Threat Map to help reduce wildfire risks caused by equipment issues.

Pacific Gas and Electric Company's 2021 Wildfire Mitigation Plan Report: https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/wildfire-mitigation-plan/2021-Wildfire-Safety-Plan.pdf

Comment

Additional details for "Explanation of financial impact figure" are available at https://www.cawildfirefund.com/. See also PG&E Corporation and Pacific Gas and Electric Company's joint quarterly report on Form 10-Q at http://investor.pgecorp.com/. Forecasted cost information is available on slide 31 of PG&E's Business Outlook (Feb. 2020): http://s1.q4cdn.com/880135780/files/doc_financials/2019/q4/Business-Outlook-Presentation-Final-Feb-2020.pdf.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Returns on investment in low-emission technology

Company-specific description

The CPUC, in consultation with the California Energy Commission (CEC), establishes efficiency targets for electric and gas providers to achieve. SB 350 requires, among other things, that the state establish annual targets for state-wide energy efficiency savings and demand reduction that will achieve a cumulative doubling of state-wide energy efficiency savings in electricity and natural gas end uses of retail customers by

January 1, 2030. Through 2020, PG&E could earn a financial incentive for the impact and overall performance of its energy efficiency programs.

As the portfolio program administrator, PG&E's energy efficiency Business Plan is built on three guiding principles: (1) Scaling energy efficiency in a cost-effective way, (2) Making energy efficiency offerings easier to access by streamlining our portfolio, and (3) Developing energy efficiency as a cost-effective grid resource that is integrated with other distributed energy resources—enabling deeper savings, greater penetration and location-specific efficiency. PG&E will transition at least 60% of its program design and delivery to third parties by December 2022, with the goal of scaling energy efficiency cost-effectively and making energy efficiency offerings easier to access for customers, and in keeping with CPUC requirements.

In 2020, PG&E's estimated electric savings totaled 1,732 GWh and total natural gas savings came to 35.8 million therms. These energy savings translate into approximately $445 million in customer bill savings, based on average electric and gas rates across all customer classes, as well as avoided emissions of more than 769,000 metric tons of carbon dioxide. 2020 saw the continuation of ambitious energy efficiency partnerships and successful programs, as PG&E focused on key initiatives to drive deep energy savings and position the state to meet its energy efficiency and carbon reduction goals.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

15,299,119

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Through 2020, PG&E could earn a financial incentive for the impact and overall performance of its energy efficiency programs. CPUC Resolution E-5108 on February 11, 2021 approved $15,299,119 in shareholder incentives for PG&E, based on PG&E's request filed in 2020. Per Resolution E-5108, recovery of the incentive in rates and its payout to shareholders is not approved until 2022, due to the economic impact of the COVID-19 pandemic on ratepayers.

Cost to realize opportunity

201,756,241

Strategy to realize opportunity and explanation of cost calculation

In 2020, PG&E spent $201 million on its energy efficiency programs. This total includes $28 million for programs administered by Regional Energy Networks/Community Choice Aggregators (RENs/CCAs), whose impacts count toward PG&E's energy savings goals. These energy efficiency funds are collected from customers via public purpose program charges embedded in gas and electric rates and are therefore revenue neutral. To increase our impact, we also partner with state and local governments, community partners and third-party energy efficiency specialists.

The CPUC establishes annual targets for energy efficiency savings and demand reduction for PG&E and other energy efficiency program administrators. Through 2020, PG&E could earn a financial incentive for the impact and overall performance of its energy efficiency programs. To meet energy efficiency targets, PG&E's Customer Care organization is responsible for implementing our energy efficiency program, which includes: (1) Working to reduce financial barriers for residential, commercial and government customers; (2) Giving customers access to their data in coordination with tips, tools and programs to support smart energy planning and reduce their energy use; (3) Collaborating with retailers, distributors and others to increase the availability of high-efficiency products; (4) Supporting California's decarbonization goals by advocating for building codes that offer feasible, cost-effective pathways to designing all-electric buildings and by developing statewide all-electric residential and non-residential new construction programs; (5) Providing technical support for local governments that choose to exceed minimum requirements for state building codes; (6) Supporting communities through proactive outreach and engagement with greenhouse gas emissions inventories, Climate Action Planning and local ordinances.

In 2020, PG&E's estimated electric energy savings totaled 1,732 GWh and total natural gas savings came to 35.8 million therms. (These figures include savings from Regional Energy Network/Community Choice Aggregator programs in PG&E's service area, which represented approximately 1% or less of total annual savings). These energy savings translate into approximately $445 million in customer bill savings, based on average electric and gas rates across all customer classes, as well as avoided emissions of more than 769,000 metric tons of carbon dioxide.

Comment

In November 2020, the CPUC issued Decision 20-11-013, which imposed a moratorium on future shareholder incentive payments under the Energy Savings Performance Incentive mechanism, under which PG&E's 2020 shareholder incentive payment had been awarded. However, investor owned utilities were permitted to collect awards for which they had applied in September 2020. In February 2021, CPUC Resolution E-5108 approved the $15.3 million award PG&E requested in September 2020. Recovery of the award in rates and payout of incentives to utility shareholders was not approved until 2022, due to the economic impact of the COVID-19 pandemic on ratepayers. The

moratorium on future shareholder incentive payments shall remain in effect pending subsequent CPUC action. The Energy Savings Performance Incentive was first authorized in 2013, and was preceded by other shareholder incentive mechanisms for energy efficiency.

The shareholder performance incentive mechanism in use by the CPUC as of 2020 rewarded prior year program performance, because it relied on final results only available after the close of a program year. The shareholder incentive PG&E requested in 2020 was based on certain results for 2019 and certain results for 2018. However, 2020 impacts and expenditures are presented here in order to provide the most current information about PG&E's programs, and because disaggregating expenditures associated with the 2018 and 2019 results recognized in the most recent shareholder incentive award is not possible.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of new technologies

Primary potential financial impact

Other, please specify

Expanded markets

Company-specific description

SB 1371 requires the adoption of rules and procedures to minimize natural gas leakage from CPUC-regulated natural gas pipeline facilities. In the June 2017 Decision D. 17-06-015, the CPUC adopted 26 best practices related to natural gas leak abatement. In compliance with CPUC requirements, PG&E's Natural Gas Leak Abatement Program includes annual methane emission tracking and reporting as well as the submission of a biennial best practice compliance plan.

In 2018, PG&E submitted its first Natural Gas Leak Abatement Compliance filing with the CPUC, outlining our first two-year plan (2018-2019) to address the 26 best practices documented in the CPUC Natural Gas Leak Abatement OIR 15-01-008. These best practices emphasize minimizing methane emissions through changes to policies and procedures, recordkeeping, personnel training, leak detection, leak repair and leak prevention.

PG&E is working to reduce methane emissions 20% by 2025 and 40% by 2030, relative

to a 2015 baseline. To achieve these goals, PG&E engages in numerous technology research and development efforts into new technologies to improve leak detection, quantification and repair capabilities, as well as improvements in processes to limit the release of methane into the atmosphere.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

18,448,461

Potential financial impact figure – maximum (currency)

27,672,691

Explanation of financial impact figure

PG&E's investment in technologies and strategies to detect and reduce methane emissions enables the utility to reduce emissions associated with our natural gas transmission, storage and distribution infrastructure in California. New technologies often provide benefits that evolve over time. Some of the projects are funded through research consortiums and their costs are shared with other utilities or oil and gas companies. The average leverage ratio for the projects is higher than five, which means PG&E is paying approximately one-fifth of the research costs. This allows PG&E to keep R&D activities cost-effective.

To estimate the financial impact figure, we estimated the value of natural gas saved associated with detection and repair activities, the social cost of the methane, and the avoided cap and trade emissions allowance costs. The figures used in the calculations include the following: city gate price of natural gas $3/mscf; social cost of methane of $1,100 per ton, which is equivalent to approximately $22/mscf; and avoided cap and trade emission allowances costs of $3/mscf. This equals an estimated total of $28/mscf. PG&E's 2015 baseline is 3,294,368 mscf. The range provided quantifies the potential financial impact figure associated with a 20-30% reduction below 2015 levels by 2025.

Cost to realize opportunity

3,342,000

Strategy to realize opportunity and explanation of cost calculation

The $3.3 million cost associated with this work supports various methane emissions technology R&D activities for 2019-2020.

SB 1371 requires the adoption of rules and procedures to minimize natural gas leakage from CPUC-regulated natural gas pipeline facilities. PG&E is actively pursuing and testing methodologies and new technologies to reduce methane emissions from gas operations activities. PG&E has been using advanced mobile technology for compliance leak surveys and has been at the forefront of this development through its partnership with Picarro.

PG&E has also been using Differential Absorption Lidar (DIAL) LiDAR aerial surveys for a portion of its transmission system. Additionally, PG&E is engaged in R&D efforts to develop new solutions, including: piloting fixed wing DIAL LiDAR aerial surveys; developing and testing light UAV-mounted leak detection technologies; exploring optical imaging technologies; and piloting the use of high sensitivity handheld devices for leak surveys. Finally, PG&E has initiated several R&D projects to improve leak detection technologies, including gas speciation to differentiate between biomethane and pipeline gas. PG&E's gas distribution organization moved to a three-year leak survey cycle starting January 1, 2018 and implemented the Super-Emitter Program, which aims for early detection and repair of large leaks. With our R&D investment underway, PG&E is working to reduce methane emissions 20% by 2025 and 40% by 2030, relative to a 2015 baseline. Actions taken to date include:
• Quarterly leak surveys at compressor stations and storage facilities (CARB Oil & Gas Rule) – helped find and repair more leaks
• Accelerated leak surveys (3-year) – finding and fixing leaks faster
• Implemented the Super Emitter program – fixing larger leaks first
• Repaired a large amount (2,000+) distribution below ground Grade 3 leaks
• Abatement of ~80% of the total gas volume released from the transmissions pipeline using drafting and cross-compression

Up to 2020, PG&E’s Super-Emitter Program identified and repaired 424 super emitter leaks, resulting in the savings of 0.466 billion cubic feet (BCF) of natural gas.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of supportive policy incentives

Primary potential financial impact

Other, please specify

No financial impact

Company-specific description

The Low Carbon Fuel Standard (LCFS) program is a core component of California's climate change strategy and is intended to reduce the carbon intensity of certain transportation fuels. As a supplier of a low-carbon fuel, PG&E generates and sells LCFS credits on behalf of our electric and natural gas vehicle customers through the LCFS program. PG&E earns credits when customers charge their EVs or purchase compressed natural gas for their vehicles, which we sell to LCFS-regulated parties and then pass on the proceeds to our customers, as a $800 Clean Fuel Rebate for electric vehicle owners, and as an on-bill credit for compressed natural gas vehicle drivers. The rebate and on-bill credit offer additional non-ratepayer funded incentives to our customers to own clean fuel vehicles and contribute to emissions reductions in the transportation sector.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

100,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Since the Clean Fuel Rebate program began in 2016, PG&E has issued over 150,000 rebates to customers for the purchase of a new EV, distributing a total of over $100 million of incentives back to customers. PG&E will continue to distribute proceeds from our participation in the LCFS program through various customer programs.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

The cost of the response to the opportunity is estimated at $0 as there is no cost to participate and generate LCFS credits.

The LCFS program is authorized until 2030 and PG&E has the opportunity to participate as long as we remain a supplier of low-carbon transportation fuel. PG&E constructively engages with the California Air Resources Board (ARB) on matters relating to the LCFS and has been supportive of the program and its goals.

Recent amendments to the LCFS regulation now require PG&E to contribute a portion of the LCFS credit proceeds to a state-wide point-of-purchase EV incentive program, the California Clean Fuel Reward (CCFR), which launched in November 2020, and provides a point-of-purchase incentive for new EVs. With the launch of the CCFR, PG&E sunset the Clean Fuel Rebate Program, which provided a $800 rebate for new EVs to PG&E customers, at the end of 2020. As a result of the Clean Fuel Rebate program, PG&E has issued over 150,000 rebates to customers for the purchase or lease of a new or used EV, distributing a total of over $100 million of incentives back to customers.

Approximately 17% of EVs in the United States plug into PG&E's grid and the number of cumulative EV registrations in PG&E's service area reached over 320,000 in 2020. PG&E continues to support increased EV adoption and transportation electrification in our service area through the LCFS programs and has proposed five new LCFS-funded programs, totaling over $100 million, to support EV adoption and customers. PG&E also supports transportation electrification through our CPUC-approved "make-ready" infrastructure programs such as EV Fleet and EV Fast Charge. Increased EV adoption and EV charging could potentially allow PG&E to generate additional credits and distribute more revenue back to EV customers through the LCFS programs.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

	Is your low-carbon transition plan a	Comment

	scheduled resolution item at AGMs?	
Row 1	No, and we do not intend it to become a scheduled resolution item within the next two years	PG&E is committed to California's vision of a sustainable energy future. This includes our support for the state's implementation of SB 100 and carbon neutrality by 2045 in a reliable and cost-effective manner for customers. SB 100 requires 100% of PG&E's retail sales to come from eligible renewables or zero-carbon resources by the end of 2045. California's Executive Order B-55-18 sets a statewide goal to achieve carbon neutrality by 2045. While we do not have plans for a scheduled resolution item at AGMs, we will be an active participant in efforts in the Legislature to codify the carbon neutrality goal and in proceedings at the CPUC, CEC and CARB to determine how to achieve carbon neutrality.

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
RCP 8.5 Other, please specify PG&E Proprietary Scenarios	In 2020, PG&E initiated several scenario analysis efforts including: Integrated Resource Planning (IRP), state-wide scenarios to achieve carbon neutrality in California by 2045, and corporate wide scenario analysis of greenhouse gas emission reduction options and trajectories. PG&E is also conducting climate-related scenario analysis to assess the physical impacts of climate change. These scenarios inform ongoing climate and clean energy business strategy efforts. (1) California Senate Bill (SB) 350 requires the CPUC to establish an IRP process to ensure that load serving entities in the state shape their future energy portfolios to meet California's clean energy and climate change goals in a reliable and cost-effective manner. PG&E filed its IRP with the CPUC in September 2020 focused on electricity supply and demand through 2030. The IRP serves as a planning tool tor PG&E's electricity supply portfolio over the next ten years and includes forecasted electricity demand (including the impacts of energy efficiency and transportation electrification), RPS compliance requirements, and carbon dioxide constraints (including California cap and trade carbon allowance prices), among other elements.

	(2) In 2020, PG&E also began a state-wide decarbonization scenario analysis to evaluate different potential pathways of action to achieve carbon neutrality in California by 2045. Modelling encompassed California's energy system and associated GHG emissions through 2045, including supply and demand for electricity, natural gas, and transportation fuels across all sectors of California's economy and negative emissions technologies that interact with the energy system. Consistent with other pathways studies conducted to date in California, the analysis highlighted four pillars to decarbonization: • Decarbonize electricity supply • Adopt energy efficient products and technologies • Electrify vehicles and buildings, and • Scale up carbon capture, utilization and storage This includes the important role of clean fuels in the transition. PG&E is evaluating the results of the state-wide decarbonization scenarios, including strategies and opportunities for PG&E to enable the low carbon transition. (3) To inform opportunities to reduce our operational carbon footprint, PG&E is conducting an analysis of greenhouse gas emission reduction options and trajectories. (4) Related to the physical risks of climate change, in 2020, the CPUC directed PG&E and California's other investor-owned utilities to conduct a system-wide Climate Vulnerability Assessment of their assets, operations and services. The time horizons for this analysis include near term to 2030, mid-century, and end of the century. The CPUC also directed the utilities to engage with disadvantaged and vulnerable communities throughout this process. Starting in 2021 and continuing through 2023, PG&E is conducting a community engagement campaign to understand how some of the most vulnerable communities we serve think about climate hazards and adaptation. This critical information will help PG&E plan adaptive climate action informed by customer and community perspectives. The results of the analysis will help PG&E target investments to infrastructure that is most vulnerable to climate impacts and that could significantly impact customers in the event of service disruption.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Risks/opportunities related to the growing demand for clean energy (as referenced in C2.4a Opp. 3) have influenced our product-related strategy/product portfolio. As a California electricity supplier, PG&E is well positioned with the current low carbon intensity of our electricity supply for the requirement to supply 100% of retail sales from eligible renewable or zero-carbon resources by 2045. This trajectory provides an opportunity for PG&E to enable the GHG emission reductions necessary, particularly for the transportation and buildings sectors (~40% and ~25% of the state's emissions, respectively). Over 35% of PG&E's delivered electricity came from RPS-eligible renewable energy in 2020—and about 85% from greenhouse-gas free resources. As this grows and the transportation/building sectors are electrified, GHG emissions from these sectors will decline. As a dual gas and electric utility, PG&E welcomes the opportunity to avoid investments in new gas assets that might later prove underutilized as local and state governments work together to realize long-term decarbonization. With this in mind, in 2020, PG&E became the first combined natural gas and electric utility in California to support the Energy Commission's efforts to advance efficient, all-electric new construction through the rulemaking for the 2022 California Energy Code, which will go into effect in 2023. To support this transition, PG&E will implement a range of customer programs over the next ten years to enable building electrification. California's Zero Net Energy (ZNE) goals state that all new residential construction be ZNE by 2020; all new commercial construction by 2030. As another example, the San Joaquin Valley Electrification Pilot is designed to reduce pollution and lower energy costs by eliminating the use of propane/wood burning appliances in 11 disadvantaged communities without access to natural gas. Eight of these communities are in PG&E's service area (~1,200 customers). PG&E administers the pilot for three of

		these communities. The other communities have a third-party pilot administrator. We began conducting extensive customer education and outreach in 2020 and 143 customers were enrolled in PG&E administered communities as of year-end. Assessments and installations continue in 2021.
Supply chain and/or value chain	Yes	Establishing a multi-pronged approach to tackle sulphur hexafluoride (SF6) is part of PG&E's strategy to establish relationships with suppliers whose values and services converge with our climate commitments, while also helping PG&E address emerging regulatory obligations and contributing toward our Million Ton Challenge carbon reduction goal. SF6 is commonly used by PG&E and other utilities as an electrical insulating material in high-voltage circuit breakers and gas-insulated switchgear. California's proposed regulations necessitate the phase out of SF6 equipment at different voltage levels beginning in 2025. PG&E is working on an orderly and systematic transition away from the use of SF6 in gas insulated equipment due to the high global warming potential of SF6. In 2020, PG&E repaired or replaced 37 of the highest leaking circuit breakers, implemented SF6 cylinder best management practices, and continued the phase-in of SF6-free equipment working with its supply chain vendors. PG&E began to purchase and pilot circuit breakers and gas insulated switch gear that does not contain SF6 gas at the 72kV level in 2017 and continues to phase in circuit breakers at the 72kV and 115kV levels. PG&E's roadmap outlines a strategy to integrate non-SF6 equipment through 2030 and beyond as non-SF6 equipment becomes available from vendors. Integrating SF6-free technology will take time, and performance of new technology is essential to meeting the state's goal and maintaining safety and reliability (as reported in C2.2c, Technology Risk). Generally speaking, risks and opportunities related to our supply chain have a high impact on our business.
Investment in R&D	Yes	As a regulated electric and natural gas utility, PG&E leverages technology research and development. One key program is the Electric Power Investment Charge (EPIC), which provided funding through 2020 for applied R&D, technology demonstration and deployment, and market

		facilitation of clean energy technologies and approaches. EPIC consists of four funding areas: (1) Renewables and Distributed Energy Resource Integration, (2) Grid Modernization and Optimization, (3) Customer Service and Enablement, and (4) Cross Cutting/Foundational Strategies and Technologies. The annual EPIC budget of $162 million was collected from customers in electric utility distribution rates. PG&E contributed 50.1% - approximately $81 million annually – with the other IOUs making up the other 49.9%. The California Energy Commission (CEC) administered 80% of the EPIC funding, with the ability to invest in all of the approved EPIC activities. PG&E was approved to administer 20% of the EPIC funding in an amount proportional to the amount collected. While PG&E has funded a variety of programs since EPIC's inception in 2012, PG&E most recently launched four EPIC 3 (investments between 2018-2020) projects. These covered electric vehicle charging, next generation SmartMeters™ integration, drone enablement for transmission line and substation inspections, and Advanced Metering Infrastructure that could proactively predict imminent distribution equipment failures before they occur.
Operations	Yes	The most prominent component of our short-term strategy (over the next five years) that has been influenced by climate change is our exposure to wildfire risk. High winds can cause tree branches and debris to contact energized electric lines, damage our equipment, and cause a wildfire. California continues to experience an increase in wildfire risk and a longer wildfire season. Today, nearly one-third of the electric lines that provide our customers with power are now in High Fire-Threat District (HFTD) areas, as designated by the CPUC (as referenced in C2.3a Risk 8). We all need to work together—PG&E, our government and all Californians—to adapt our electric system to the growing threat of wildfires, while also helping our customers prepare for and mitigate service interruptions under our Public Safety Power Shutoff (PSPS) Program. Our Community Wildfire Safety Program includes short-, medium- and long-term plans to reduce wildfire risk and keep our customers and communities safe. It includes new grid

		technology, a critical hardening of the electric system, enhanced vegetation management, and more. It also includes listening sessions with stakeholders to improve our PSPS program going forward. Our 2021 Wildfire Mitigation Plan focuses on planned progress over the next three years from 2021-2023. We are delivering more assistance and outreach to help vulnerable customers, who include medical baseline customers and tribal communities, among others. For example, we are partnering with the Disability Disaster Access and Resources program, in partnership with the California Foundation for Independent Living Centers, to provide support to vulnerable customers before and during PSPS events. We are also offering Community Resource Centers so that customers without power can have a place to go for charging and other basic needs. We are also actively working with tribal governments to prepare their communities for PSPS events and obtain feedback from those that were impacted by prior events. Other initiatives include our Portable Battery Program, which provides no-cost backup portable batteries to low-income customers enrolled in the medical baseline program that rely on power for medical or independent living needs and reside in high fire-threat areas. Generally speaking, risks and opportunities related to operations can have a high impact on our business.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Capital expenditures Assets	Capital Expenditures: Our climate continues to change—and California continues to experience an increase in wildfire risk and a longer wildfire season. Today, nearly one-third of the electric lines that provide our customers with power are now in High Fire-Threat District (HFTD) areas, as designated by the CPUC. To mitigate this risk, PG&E invested approximately $1.2 billion in 2020 in

		capital expenditures for wildfire mitigation. Our Community Wildfire Safety Program (CWSP) includes short-, medium- and long-term plans to reduce wildfire risk and keep our customers and communities safe. We all need to work together—PG&E, our government and all Californians—to adapt our electric system to the growing threat of wildfires, while also helping our customers prepare for and mitigate service interruptions under our Public Safety Power Shutoff Program. PG&E's 2021 Wildfire Mitigation Plan (WMP) is intended to reduce the risk of wildfires in the CPUC's HFTD areas over the next three years from 2021-2023. The WMP provides details on PG&E's comprehensive CWSP and, incorporating lessons learned from the 2020 wildfire season, outlines the additional programs planned from 2021 to 2023 to prevent catastrophic wildfires. Key initiatives include: (1) Installing 250 sectionalizing devices able to limit the size of outages so fewer communities are without power during times of highest wildfire threat; (2) Hardening 180 distribution circuit miles to increase system resiliency; (3) Meeting and exceeding state vegetation and safety standards across 1,800 miles to manage vegetation near power lines that could cause a wildfire or power outage; (4) Installing switches to redirect power and keep communities energized; (5) Installing microgrids that use generators to keep the electricity on during PSPS events; (6) Utilizing additional state-of-the-art weather tools, including weather stations and high-definition cameras, to improve extreme weather forecasting that will help better predict and target where and when PSPS events are necessary; (7) Monitoring conditions in real-time from our Wildfire Safety Operations Center to coordinate wildfire prevention and response; (8) Inspecting all lines and structures in Tier 3 areas and one-third of lines and structures in Tier 2 areas on the CPUC Fire-Threat Map to help reduce wildfire risks caused by equipment issues.

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Both absolute and intensity targets

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Year target was set

2018

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

GHG emissions included in this target are: natural gas transmission and distribution fugitive and process methane and carbon dioxide emissions; greenhouse gas emissions from the vehicle fleet; and greenhouse gas emissions associated with the consumption of electricity and natural gas at PG&E owned buildings.

Base year

2016

Covered emissions in base year (metric tons CO2e)

1,540,000

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

38

Target year

2022

Targeted reduction from base year (%)

10

Covered emissions in target year (metric tons CO2e) [auto-calculated]

1,386,000

Covered emissions in reporting year (metric tons CO2e)

1,397,458

% of target achieved [auto-calculated]

92.5597402597

Target status in reporting year

Underway

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Target ambition

Please explain (including target coverage)

In 2020, PG&E continued to track progress towards the company's five-year greenhouse gas emission reduction goal for its operations (including natural gas transmission and distribution, vehicle fleet, and PG&E facilities). PG&E's voluntary goal entails a 10% reduction from a 2016 baseline by 2022. As part of this goal, PG&E launched a Million Ton Challenge, a five-year strategy to avoid one million metric tons of cumulative greenhouse gas emissions from 2018-2022.

Target reference number

Abs 2

Year target was set

2013

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Other, please specify

Scope 1 + 3 (downstream)

The C&T target years include 2020 and 2030. California's 2030 target is consistent with IPCC recommendations. California's 2016 GHG inventory showed that emissions are already lower than 1990 levels.

Base year

1990

Covered emissions in base year (metric tons CO2e)

0

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

0

Target year

2020

Targeted reduction from base year (%)

0

Covered emissions in target year (metric tons CO2e) [auto-calculated]

0

Covered emissions in reporting year (metric tons CO2e)

2,845,973

% of target achieved [auto-calculated]

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science-Based Targets initiative

Target ambition

2°C aligned

Please explain (including target coverage)

The Cap and Trade target years include 2020 and 2030. California's 2030 target is consistent with IPCC recommendations. California's 2017 GHG inventory (the most recent data publicly available) showed that emissions are 7 MMTCO2e below the 2020 GHG Limit of 431 MMTCO2e.

PG&E's target is to comply with Assembly Bill 32 (AB 32), Assembly Bill 398 (AB 398), and Senate Bill 32 (SB 32) and we are committed to helping the state meet its long-term greenhouse gas (GHG) reduction targets. AB 32 mandates the reduction of California's GHG emissions to the 1990 level (431 million metric tons of CO2e, as determined by ARB) by 2020. Under AB 32, PG&E and other "covered entities" that emit significant amounts of GHG emissions in California are included in a Cap-and-Trade (C&T) program for GHG emissions. The regulation became effective on January 1, 2012, and the program began implementation on January 1, 2013. The C&T program is one of many measures being implemented under AB 32 to meet the 2020 GHG emission reduction goal.

Approximately 73% of PG&E's Scope 1 voluntarily reported GHG emissions were covered by the C&T program in 2020. PG&E has a compliance obligation under the C&T program, as determined by the Air Resources Board, for emissions from: our electric generation units that exceed the inclusion threshold; imported electricity; natural gas compressor stations; and natural gas delivered to customers that are not separately covered by the C&T program. AB 398, passed in 2017, extended the C&T program out to 2030. SB 32, passed in 2016, requires the state to achieve a 40% reduction in greenhouse gases by 2030 compared to 1990 levels. PG&E is prohibited from disclosing any non-public information concerning allowance auction participation, which could include expected emissions trends.

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Year target was set
2011

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1

Intensity metric
Other, please specify
SF6 system wide leak rate

Base year
2011

Intensity figure in base year (metric tons CO2e per unit of activity)
66,840

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure
0.8

Target year
2020

Targeted reduction from base year (%)
90

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]
6,684

% change anticipated in absolute Scope 1+2 emissions
1

% change anticipated in absolute Scope 3 emissions
0

Intensity figure in reporting year (metric tons CO2e per unit of activity)
58,280

% of target achieved [auto-calculated]
14.2296695259

Target status in reporting year

Underway

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

Target ambition

Please explain (including target coverage)

PG&E continues to implement controls and tracking measures to enhance our program in compliance with California regulations, which require that the maximum annual SF6 emission rate decline from 10% in 2011 to 1% in 2020 and beyond. In 2020, PG&E's SF6 emission rate was 1.1%. As part of a multi-year effort, PG&E is piloting the installation of SF6-free high-voltage circuit breakers and gas-insulated switchgear.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Target(s) to reduce methane emissions

Net-zero target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2018

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Methane reduction target

Other, please specify

Total annual volume of natural gas leaks and emissions (Mscf)

Target denominator (intensity targets only)

Base year
2015

Figure or percentage in base year
3,294,368

Target year
2025

Figure or percentage in target year
2,635,494

Figure or percentage in reporting year
1,780,547

% of target achieved [auto-calculated]
229.7588006205

Target status in reporting year
Underway

Is this target part of an emissions target?
PG&E's methane emission reduction initiatives are part of Abs 1 - PG&E's Million Ton Challenge program. PG&E launched the “Million Ton Challenge,” a voluntary five-year carbon reduction goal for the company’s operations. The goal is to avoid one million tons of cumulative greenhouse gas emissions from our operations from 2018 through 2022, compared to a 2016 baseline. PG&E’s natural gas transmission and distribution system is included in this carbon reduction goal, specifically reducing methane emissions from our operations through leak detection and repair, pipeline replacement, and reducing transmission pipeline blowdowns. Natural gas distribution and transmission methane emissions totaled 1.54 million metric tons CO2e in 2016, the baseline year for the Million Ton Challenge.

Is this target part of an overarching initiative?
Reduce short-lived climate pollutants

Please explain (including target coverage)
PG&E’s goal is to reduce methane emissions by 20% by 2025 and 40% by 2030, relative to a 2015 baseline. PG&E’s natural gas transmission and distribution system leak abatement program includes annual methane emission tracking and reporting, and a biennial best practice compliance plan submission. PG&E’s two-year Compliance Plan (2020-2021) was submitted to the CPUC in March 2020.

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number

NZ1

Target coverage

Other, please specify

Country/Region: California economy-wide target

Absolute/intensity emission target(s) linked to this net-zero target

Not applicable

Target year for achieving net zero

2045

Is this a science-based target?

Yes, but we have not committed to seek validation of this target by the Science Based Targets initiative in the next 2 years

Please explain (including target coverage)

California's Executive Order B-55-18 sets a state-wide goal to achieve carbon neutrality by 2045 and net negative emissions thereafter. PG&E will be an active participant in future efforts in the Legislature to codify the carbon neutrality goal and in proceedings at the CPUC, CEC, and CARB to determine how to achieve carbon neutrality in an affordable and reliable way.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	7	0
To be implemented*	23	0
Implementation commenced*	21	125,000
Implemented*	28	380,550
Not to be implemented	1	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Other, please specify

Other, please specify

Initiative: Process emissions reductions; Initiative Type: changes in operations

Estimated annual CO2e savings (metric tonnes CO2e)

354,433

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

1,756,530

Investment required (unit currency – as specified in C0.4)

1,800,000

Payback period

No payback

Estimated lifetime of the initiative

1-2 years

Comment

In 2020, PG&E reduced methane emissions, compared to the 2016 baseline of the Million Ton Challenge, by 354,433 metric tonnes CO2e (mtCO2e). PG&E implemented drafting and cross compression strategies to reduce the amount of natural gas released to the atmosphere during construction and repair projects on our natural gas transmission system. Drafting and cross compression are strategies used to reduce and transfer the amount of natural gas from the part of the system needed to complete work to another part of our system. Reducing these gas transmission system “blowdown” emissions prevented the release of approximately 511 MMscf, equaling approximately 256,900 mtCO2e from entering the atmosphere. This performance eclipsed the annual abatement goal (200 MMscf) established in PG&E’s Natural Gas Leak Abatement Compliance Plan filing to the CPUC.

PG&E also continued implementing several additional strategies across natural gas pipelines and operations to reduce emissions including: 3–year leak survey cycle; Super-emitter survey and leak repair; replacement of high bleed pneumatic controllers;

and main and service replacement. PG&E's system wide process and fugitive methane emissions decreased about 97,500 mtCO2e compared to 2016 baseline levels. Gas network emissions decreases were driven by finding a greater number of leaks identified through distribution leak surveys.

Initiative category & Initiative type

Fugitive emissions reductions

Other, please specify

Repair of leaking SF6 equipment

Estimated annual CO2e savings (metric tonnes CO2e)

0

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

450,000

Payback period

No payback

Estimated lifetime of the initiative

11-15 years

Comment

PG&E strives to reduce its Scope 1 sulfur hexafluoride (SF6) emissions by implementing SF6 tracking, early detection measures for circuit breakers, and an active breaker replacement program. In 2020, PG&E repaired or replaced nearly 40 targeted circuit breakers to reduce emissions. The average annual expense for this type of work is $450,000, based on a 9-year period. Despite PG&E's proactive efforts, no reductions were recorded for 2020 -- resulting in a systemwide fugitive emissions increase relative to the 2016 baseline year of 8,157 MT CO2e.

Initiative category & Initiative type

Energy efficiency in buildings

Other, please specify

Building Energy Efficiency Upgrades and Solar Generation

Estimated annual CO2e savings (metric tonnes CO2e)

2,315

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

625,672

Investment required (unit currency – as specified in C0.4)

0

Payback period

4-10 years

Estimated lifetime of the initiative

6-10 years

Comment

As part of the Million Ton Challenge, a five-year carbon reduction goal for our operations, we are working to improve the sustainability performance of our facilities. PG&E utilized seven on-site solar PV installations at our facilities for 2020, along with reductions in building natural gas, resulting in savings of approximately 2,315 MT CO2e. PG&E completed one solar project in 2020 adding an extra 947 kW to its solar portfolio. Additional PV solar projects are in the planning stage this year. During the year, PG&E also continued to engage employees around energy efficiency and energy-saving actions.

Initiative category & Initiative type

Other, please specify

Other, please specify

Environmental Remediation Sites

Estimated annual CO2e savings (metric tonnes CO2e)

645

Scope(s)

Scope 3

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

0

Payback period

No payback

Estimated lifetime of the initiative

1-2 years

Comment

PG&E reduced its emissions in 2020 across various environmental remediation sites. PG&E achieved these results by incorporating sustainable practices on our remediation sites: using heavy construction and remediation equipment meeting Tier 3 and Tier 4 federal emission standards, reflecting the cleanest standards in the industry; using alternative fuels and renewable sources of energy for equipment and vehicles; and maximizing recycling, on-site reuse of materials and reductions in liquid and soil wastes generated during remediation.

We also added $7 million to the local economies near our project sites by sourcing our equipment and vendors from the local community, an effort we make whenever possible on our remediation projects.

Initiative category & Initiative type

Transportation
Company fleet vehicle replacement

Estimated annual CO2e savings (metric tonnes CO2e)

23,157

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

0

Payback period

No payback

Estimated lifetime of the initiative

6-10 years

Comment

As part of our commitment to reduce our operational footprint, we continue to incorporate innovative new vehicles into our fleet. PG&E managed approximately 13,700 on-road vehicles and related equipment in our fleet at the end of 2020. Of those,

about 1,360 were electric-based and 61 were powered by compressed natural gas. Our network of electric charging stations is also growing; last year we surpassed 1,267 charge points at 114 locations across our service area. We also maintain a network of 32 CNG vehicle refueling facilities, 24 of which are open to customers. PG&E also rolled out renewable diesel to more than 60 sites, using over 2.7 million gallons of renewable diesel in our conventional vehicles and reducing associated carbon emissions. PG&E accrues emission reductions through the life of the vehicles; the average life of PG&E's light- and heavy-duty vehicles is 8 to 10 years. Emission reductions are calculated as part of the Million Ton Challenge (2020 performance compared to the 2016 baseline).

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	PG&E uses an integrated planning process to link our business strategy with resource planning. This process is informed, in part, by an external Sustainability Advisory Council, which engages with PG&E leaders to provide feedback and identify new areas of opportunity. California's climate and energy goals serve as a catalyst for PG&E to assess costs and opportunities for low-carbon investments. This includes Executive Order B-55-18, which sets a statewide goal to achieve carbon neutrality by 2045. Additionally, AB 32 required the state to reduce GHGs to 1990 levels by 2020 and includes a Cap-and-Trade Program, among other program measures. AB 398 extended California's Cap-and-Trade program for reducing greenhouse gas emissions and providing cost protections for energy consumers to 2030. SB 32 codified an aggressive economy-wide GHG reduction goal of 40% below the 1990 level by 2030. SB 100 accelerates and increases the state's previous Renewable Portfolio Standard (RPS) requirements to 60% by 2030 and 100% of retail sales from eligible renewables and zero-carbon resources by 2045. Compliance with SB 1368 also drives investment in lower emissions generation; it prohibits any load-serving entity in California, such as PG&E, from entering into a long-term financial commitment for conventional electricity generation unless it complies with a GHG emission performance standard,.
Dedicated budget for energy efficiency	In 2020, PG&E spent $201 million on energy efficiency projects—a significant investment in energy efficiency by a U.S. utility. In 2020, the estimated electric savings totaled 1,732 GWh and total natural gas

	savings came to 35.8 million therms. These results avoided the emission of more than 769,000 metric tons of CO2.
Employee engagement	PG&E has a dedicated campaign to engage its employees to contribute towards the Million Ton Challenge.
Other	PG&E integrates emission reduction activities into business plans and operating budgets to reduce our Scope 1 SF6 emissions.
Other	PG&E integrates emission reduction activities into business plans and operating budgets to reduce our Scope 1 methane emissions from our natural gas transmission and distribution system.
Other	PG&E integrates activities into business plans and operating budgets to improve our fleet's efficiency and to incorporate low-emissions vehicles into our fleet.
Other	PG&E integrates emission reduction activities into business plans and operating budgets to improve our facility sustainability performance.
Other	PG&E conducts policy advocacy to drive investment in emissions reduction activities. For example, at the federal level, PG&E advocates to expand and enhance the current federal tax credit for electric vehicles; provide grants, tax credits and other incentives and policy changes to encourage the expansion of charging infrastructure; incentives to support electrification of fleet vehicles; and uphold California's ability to set its own vehicle emissions standards under the Clean Air Act.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Company-wide

Description of product/Group of products

PG&E offers customers some of the nation's cleanest energy. In 2020, about 85% of the electricity we supplied to customers was greenhouse-gas free and over 35% came from renewable sources, including solar, wind, geothermal, small hydroelectric, and various forms of bioenergy. We are well on our way toward meeting the state's 60% by 2030 renewable energy mandate set forth in Senate Bill (SB) 100.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

California Renewable Portfolio Standard

% revenue from low carbon product(s) in the reporting year

60

Comment

Percent revenue is based on PG&E's 2020 weighted average rate base. PG&E is required to deliver an average of ~30% over the 2018 to 2020 period. By the end of 2020, over 35% of the electricity PG&E delivered to its customers came from RPS-eligible resources, achieving the state's interim target.

Level of aggregation

Group of products

Description of product/Group of products

PG&E's Solar Choice program allows customers to purchase up to 100% of their power from solar energy, locally sourced in Northern and Central California.

PG&E's Regional Renewable Choice program enables customers to purchase renewable energy from a specific renewable project of their choice within PG&E's service area. Through the program, customers may contract with developers and subscribe to a portion of the power produced from a newly developed renewable project based in PG&E's service area.

Customers can subscribe to between 25 and 100% of their energy use. Through the program, PG&E will work with local renewable energy developers across Northern and Central California that will build small- and mid-sized renewable projects ranging from 0.5 to 20 megawatts. The energy for these new projects must be from renewable resources including, but not limited to, solar, wind or biomass.

In 2020, we launched the Green Saver program, our first community renewables program enabling customers in disadvantaged communities to subscribe to 100% solar energy from solar projects built within California. The program was fully subscribed by year-end. We approved contracts for 4.65 MW of solar to supply Green Saver customers and an additional 6 MW of solar resources procured for the Local Green Saver program, another community renewable program targeting customers in disadvantaged communities through which participants will eventually enroll in specific solar projects that come online.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

Green-e Energy certification (for both Solar Choice and Regional Renewable Choice)

% revenue from low carbon product(s) in the reporting year

1

Comment

Level of aggregation

Group of products

Description of product/Group of products

PG&E offers customers a comprehensive portfolio of energy efficiency options. Serving residential, commercial, agricultural, and other customers across the state, PG&E delivers energy efficiency solutions that empower customers to reduce energy use, reduce their carbon footprint, and save money. PG&E reaches customers using a variety of channels, from self-service software tools to PG&E's business customer account representatives. PG&E also partners with state and local governments, community partners and third-party energy efficiency specialists.

PG&E operates three training centers that offer energy efficiency education and training programs for building professionals, including architects, designers, engineers, contractors and technicians.

PG&E's energy efficiency priorities include: (1) Working to reduce financial barriers for residential, commercial and government customers; (2) Giving customers access to their data to support smart energy planning; (3) Collaborating with retailers, distributors and others to increase the availability of high-efficiency products; (4) Advocating for building codes that offer feasible, cost-effective pathways to designing all-electric buildings and by developing statewide all-electric residential and non-residential new construction programs; (5) Providing technical support for local governments that choose to exceed minimum requirements for state building codes; and (6) Supporting communities through proactive outreach and engagement with greenhouse gas emissions inventories, Climate Action Planning and local ordinances.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

CPUC approved Energy Efficiency program

% revenue from low carbon product(s) in the reporting year

1

Comment

Level of aggregation

Group of products

Description of product/Group of products

PG&E offers customers a comprehensive portfolio of demand response options to reduce consumer electricity use at periods of high demand. PG&E's demand response options are supported by SmartMeter™ technology, which helps customers better understand their energy usage and lower their energy costs. Approximately 160,000 residential customers participate in the programs we offer, along with more than 100,000 larger commercial and industrial customers. Demand response programs include SmartRate, SmartAC, Peak Day Pricing, Capacity Bidding Program, Base Interruptible Program, and AutoDR. The extreme heat events of the last year have underscored the critical importance of demand response as a strategy to conserve electricity and shift demand during extreme weather conditions.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

CPUC approved Demand Response program

% revenue from low carbon product(s) in the reporting year

1

Comment

Level of aggregation

Group of products

Description of product/Group of products

EV Charge Network program, Fast Charge Program, and EV Fleet Program. In 2020, PG&E installed nearly 4,200 Level 2 ports at workplaces and multi-family dwellings through the EV Charge Network program; 14 sites for the EV Fleet program; and the first site in the EV Fast Charge Program. Approximately 9% of new vehicle sales in

PG&E's market were electric – totaling more than 320,000 EVs in PG&E's service area at the end of 2020.

In 2020, PG&E launched two new programs – EV Schools and Parks and Empower EV. The EV Schools and Parks will invest approximately $12 million over two years in charging infrastructure at an estimated 22 schools and 15 state parks. At least 25% of the state park project sites and 40% of the school project sites will be focused on equity. Empower EV will support targeted community outreach to provide EV education and rebates for EV chargers and installation for income-qualified residential customers. The program will total $4 million over two years and aims to serve 2,000 households.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

CPUC-approved EV Charge Network program, Fast Charge Program and FleetReady Program

% revenue from low carbon product(s) in the reporting year

1

Comment

Level of aggregation

Group of products

Description of product/Group of products

Incentive programs for low-income solar, solar thermal water heating, fuel cells, wind, battery storage and other advanced technologies. Overall, 2020 was a historic year for the Self Generation Incentive Program (SGIP), with over 10,000 applications across all budget categories.

Additionally, there were more than 18,600 PG&E customers with battery storage in their homes or businesses, representing 225 MW of installed capacity – more than doubling installed capacity compared to 2019.

In 2020, we reached 530,000 interconnected solar systems, totaling more than 5,000 MW. In addition, we provided average incentives of about $3,400 each to single-family residential solar water heating projects, and an average of $54,000 for multi-family residential and commercial solar water heating installations. These incentives have helped support nearly 2,200 gas-offsetting projects of all types since the program's inception, which, in total, are expected to avoid more than 2.1 million therms annually.

The solar water heating program stopped accepting applications on July 31, 2020, and projects will continue to be completed and receive incentives through 2021 and beyond.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

CPUC-approved incentive programs for low-income solar, solar thermal water heating, fuel cells, wind, battery storage and other advanced technologies

% revenue from low carbon product(s) in the reporting year

1

Comment

C-EU4.6

(C-EU4.6) Describe your organization's efforts to reduce methane emissions from your activities.

PG&E's efforts to reduce methane emissions from our natural gas transmission and distribution operations include methane reduction targets, methane reduction projects, and collaborative initiatives to develop new methods and technologies and to reduce methane emissions through both mandatory and voluntary programs.

PG&E launched the Million Ton Challenge, a voluntary five-year carbon reduction goal for the company's operations (as described in C4.1a). The goal is to avoid one million tons of cumulative greenhouse gas emissions from our operations from 2018 through 2022, compared to a 2016 baseline. PG&E's natural gas transmission and distribution system is included in this carbon reduction goal, including reducing methane emissions from our operations through leak detection and repair, pipeline replacement, and reducing transmission pipeline blowdowns. Natural gas distribution and transmission methane emissions totaled 1.54 million metric tons CO2e in 2016, the baseline year for the Million Ton Challenge.

PG&E is working to reduce methane emissions by 20% by 2025 and 40% by 2030, relative to a 2015 baseline. PG&E took further steps in 2020 to reduce methane emissions using a variety of innovative techniques that were also implemented to meet regulations from the CPUC and CARB. We piloted a variety of technologies, including drones, to detect leaks in areas that are difficult to reach on foot. We also continued our vintage pipe replacement program. We implemented drafting, cross compression, flaring and project bundling—separately and in combination—to reduce as much as possible the amount of natural gas released to the atmosphere during construction and repair projects on our gas transmission system.

Beyond implementing emission reduction strategies, part of the challenge is arriving at methods to measure these reductions. We're testing a new generation of methane detectors, which will

be commercialized by RKI instruments. In addition to its high sensitivity, the instrument can identify the source of methane by measuring concentration levels and provides full traceability of leak surveys by collecting high accuracy GPS locations along with methane indications.

We've also partnered with the research consortium OTD to develop a new way to characterize meter set leak emissions using traditional soap test results. This method allows us to prioritize leak repairs on larger emitters and assess emission reductions.

PG&E's gas leak abatement program includes annual methane emission tracking reporting, and a biennial best practice compliance plan submission. PG&E's second two-year compliance plan (2020-2021) was submitted to the CPUC in March 2020 and includes incremental work.

In 2018, the California Air Resources Board began implementation of the Oil and Gas Regulation, which covers PG&E's compressor stations and gas storage facilities. The regulation directs compressors and storage facility operators to perform quarterly leak surveys, to repair leaks quickly after discovery, and to install stationary ambient methane detectors at storage facilities.

The Environmental Protection Agency's (EPA) Methane Challenge was launched in 2016 with PG&E as one of its 41 founding partners. The challenge is designed to give oil and gas companies, including utilities, a voluntary platform to make specific and transparent commitments to reduce methane emissions, including through the investment in technology. PG&E's commitments include adopting the EPA-identified best management practices in the following categories: excavation damages, transmission pipeline blowdowns, centrifugal compressor venting, pneumatic controllers, and reciprocating compressor venting. More information on PG&E's participation is available on EPA's Methane Challenge website.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2009

Base year end

December 31, 2009

Base year emissions (metric tons CO2e)

3,218,256

Comment

Scope 2 (location-based)

Base year start

January 1, 2009

Base year end

December 31, 2009

Base year emissions (metric tons CO2e)

1,060,153

Comment

Scope 2 (market-based)

Base year start

January 1, 2009

Base year end

December 31, 2009

Base year emissions (metric tons CO2e)

997,983

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

The Climate Registry: Electric Power Sector (EPS) Protocol
The Climate Registry: General Reporting Protocol
Other, please specify
California Energy Commission Power Source Disclosure; California and EPA protocols

C5.2a

(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

In 2015, the California Public Utilities Commission required all natural gas utilities to report yearly natural gas emissions from all sources pursuant to the Order Instituting Rulemaking to Adopt Rules and Procedures Governing Commission-Related Natural Gas Pipelines and Facilities to Reduce Natural Gas Leakage Consistent with Senate Bill 1371 (R.15-01-008). PG&E's report was used to determine releases (both intentional and unintentional) from PG&E's natural gas system.

The California Climate Action Registry (CCAR) Draft Natural Gas Transmission & Distribution (T&D) Protocol, (April 2009) and the U.S. EPA and California Air Resources Board Subpart W reporting protocols were used to derive estimates for the majority of PG&E's fugitive and process emissions from our natural gas T&D system. For certain emission sources in our natural gas T&D system for which we had more accurate methodologies and available data, PG&E used our own system-specific calculation methodologies to estimate emissions, which in general were more accurate. Emission factors obtained from past measurement studies, such as the 1996 GRI/EPA report, were used to calculate emissions where actual measurement values are not available and there is insufficient data to provide engineering estimates.

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

3,899,490

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

1,237,881

Scope 2, market-based (if applicable)

220,403

Comment

PG&E calculates Scope 2 emissions as the portion of our electricity use attributed to purchased electricity. We use an adjustment of our own emission rate (160.05 pounds CO2/MWh in 2020), which is still undergoing third-party verification. This rate differs from previous years (pre-2019) due to a methodology change to the California Energy Commission's Power Source Disclosure Report. The resulting Scope 2 market-based emissions should not be compared to previous years due to this methodology change.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

2,753,723

Emissions calculation methodology

In collaboration with the Electric Utility Industry Sustainable Supply Chain Alliance (EUISSCA.org) and Anthesis, PG&E mapped its 2019 spend with over 4,300 vendors to 39 product categories and used economic input-output tables and industry-level environmental data to construct a top-down database of environmental impact per dollar of sales. This mapping exercise helped PG&E quantify greenhouse gas emissions associated with goods and services procured in our supply chain. The key findings of this analysis were that over 80% of our supply chain emissions occur in construction services, vehicles and transportation, materials and equipment, landscaping and vegetation management, and environmental/remediation.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Please explain

Capital goods

Evaluation status

Not relevant, explanation provided

Please explain

As a supplier of electricity and natural gas, PG&E capital goods consist primarily of energy infrastructure and purchased electricity and natural gas. The emissions associated with our energy production and natural gas transmission and distribution are accounted for in our Scope 1 and Scope 2 emissions, and there are no other material emissions from our capital goods.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, calculated

Metric tonnes CO2e

1,353,208

Emissions calculation methodology

Reported to The Climate Registry in accordance with the Electric Power Sector (EPS) protocol. For energy deliveries, PG&E refers to the Power Source Disclosure Report (PSDR), a report that PG&E submits annually to the California Energy Commission. This report details the name, identification numbers, fuel types, net kWh purchased, and GHG emissions (MT CO2) for every power plant (renewable and non-renewable) from which PG&E purchases electricity.

Due to changes to the PSDR report and its methodology, emissions associated with purchased power have decreased compared to pre-2019 emissions reporting. The PSDR requires that any procurement (owned generation or purchases) in excess of retail sales (e.g., an oversupply of power) be subtracted from retail sales using a cascading formula. The prescribed CEC formula requires that all fossil fuel procurements be subtracted first and, if additional volumes are still required, then all other specified purchases are proportionality reduced until total procurement equals total retail sales. Due to this adjustment, some anthropogenic CO2 emissions were removed from PG&E's retail electricity supply mix.

The PSD regulations were new for the 2019 reporting year and continue for future reporting years. This approach differs from prior reporting years and results in a retail electricity supply emission rate that can be significantly lower.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

Upstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

PG&E's supply chain primarily consists of upstream purchased electricity and natural gas. Energy use and losses in transporting electricity and natural gas is accounted for in our Scope 1 and Scope 2 emissions, and there are no other material transportation and distribution emissions upstream.

Waste generated in operations

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

885

Emissions calculation methodology

PG&E measures volumes and weights of waste generated at all facilities and inputs this data to the U.S. EPA WARM Model Lifecycle GHG comparison. PG&E uses industry standard volume-to-weight conversions to generate tonnages for each weight type in instances where haulers do not provide primary weight data.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

20

Please explain

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

989

Emissions calculation methodology

This figure represents the emissions associated with vehicle, hotel, and air travel booked through any of the travel agencies that PG&E employs. These figures do not include emissions from travel booked by employees on personal or company credit cards as those emissions are difficult to track and quantify.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Please explain

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

2,016

Emissions calculation methodology

Employees were surveyed on miles traveled and mode of transport as part of PG&E's General Office LEED survey. Passenger miles traveled were input to the GHG Protocol Mobile Combustion GHG Emission Calculation Tool, v2.3 with custom emission factors for light rail from the U.S. Department of Transportation (0.3 pounds CO2/passenger mile traveled), and San Francisco BART (0.13 pounds CO2/passenger mile traveled).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Please explain

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

PG&E has entered into capital lease agreements to purchase energy and capacity with independent power producers that own generation facilities that meet the definition of a QF under federal law. Emissions from these sources are included in PG&E's Scope 3 emissions for electricity delivered to customers, included above.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

PG&E delivers electricity and natural gas directly to customers. There are no downstream operations to account for emissions in this category.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

PG&E delivers electricity and natural gas directly to customers. Any emissions from the processing of natural gas we deliver are included in Fuel-and-Energy-related activities above.

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

38,842,763

Emissions calculation methodology

Reported to the California Air Resources Board (ARB) in accordance with the AB 32 Mandatory Reporting Regulation (MRR) and to The Climate Registry. Excludes natural gas used by generating stations to generate electricity delivered to customers (Scope 3 Electricity Purchased for Customers). This category includes CO2e from purchased natural gas that is delivered to customers. The figure represents the emissions from the combustion of natural gas delivered to all entities on PG&E's distribution system, with the exception of gas delivered to other natural gas local distribution companies, as well as gas delivered to PG&E facilities such as power plants, compressor stations, and offices, the emissions of which are reported separately.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Please explain

The use of electricity and natural gas does not have a significant source of emissions related to disposal of the products.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

PG&E did not lease assets during the reporting year.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

PG&E did not operate any franchises during the reporting year.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

PG&E did not have significant emissions due to investments that are not captured in Scopes 1 and 2 or listed elsewhere on this table.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Please explain

PG&E did not operate any upstream assets during the reporting year.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

PG&E did not operate any downstream assets during the reporting year.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.00022

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

4,119,892

Metric denominator

unit total revenue

Metric denominator: Unit total

18,469,000,000

Scope 2 figure used

Market-based

% change from previous year

18

Direction of change

Decreased

Reason for change

A 9% decline in total Scope 1-2 emissions and 7% increase in total revenue compared to 2019. Emission reduction activities that contributed to the decline in Scope 1-2 emissions include: (1) energy efficiency (building services), (2) Natural Gas process/fugitive emissions savings, and (3) alternative fuel use in fleet vehicles.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	2,941,929	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	897,076	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	1,685	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	520	IPCC Fifth Assessment Report (AR5 – 100 year)

SF6	58,280	IPCC Fifth Assessment Report (AR5 – 100 year)

C-EU7.1b

(C-EU7.1b) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Total gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	616	26,294	2.48	795,639	Total gross Scope 1 emissions (metric tons CO2e) includes 520 MT of HFCs
Combustion (Electric utilities)	2,848,395	75	0	2,851,914	Total gross Scope 1 emissions (metric tons CO2e) includes 5.3 MT of N2O
Combustion (Gas utilities)	0	0	0	0	
Combustion (Other)	85,319	1.18	0	85,623	Combustion (mobile) Total gross Scope 1 emissions (metric tons CO2e) includes 1.02 MT of N2O
Emissions not elsewhere classified	7,598	5,668	0	166,313	This represents process emissions related to PG&E's natural gas operations during 2020

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	3,899,490

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By activity

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Sulfur Hexafluoride (SF6) from Electrical Equipment	58,280
Facility Natural Gas Use	7,986
Gas Compressor Stations	290,716
Owned Fossil Electric Generation	2,559,546
Process and Fugitive Emissions from Natural Gas System	895,678
Fleet (transportation emissions)	85,623
Other Emissions (e.g., propane use, stationary equipment gas and diesel use)	1,660

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Electric utility activities	3,899,490	

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
United States of America 1	1,237,881	220,403	113,759	236,026

[1]PG&E consumed approximately 296,120 MWh of electricity in 2020. Of this consumption, approximately 113,759 MWh was purchased; the remaining 182,361 MWh was generated by PG&E-owned facilities.

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By activity

C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
T&D Line Losses	1,115,581	198,598
Facility Electricity Use	53,028	9,440
Compressor Station Electricity Use	69,060	12,327
Electricity Use by Fleet	213	38

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	68,792	Increased	1.5	PG&E's owned fossil generation increased in 2020, resulting in reduced amounts of renewable energy consumption. This drove emissions associated with power generation upward by 68,792 MT CO2e Total percentage change is calculated

				as [68,792 MT/4,508,161 MT (total Scope 1 and Scope 2 emissions from 2019) x 100 = 1.5%]
Other emissions reduction activities	2,931	Decreased	0.07	Emission reductions activities include: (1) alternative fuel use in fleet vehicles: 1,652 MT CO2e, (2) reduced facility natural gas use: 1,278 MT CO2e, Total percentage change is calculated as [2,931 MT/4,508,161 MT (total Scope 1 and Scope 2 emissions from 2019) x 100 = 0.07%]
Divestment				
Acquisitions				
Mergers				
Change in output	209,469	Increased	4.6	Total Scope 1 emissions increased due to change in output activities include (1) Overall increase in fugitive SF6 emissions: 22,090 MT CO2-e, (2) reduced process and fugitive emissions from compressor stations: 27,330 MT CO2-e, (3) reduced emissions from Other Scope 1 sources: 350 MT CO2-e, (4) increased electricity T&D line losses: 193,927 MT CO2-e, and (5) increased facility electricity emissions: 21,131 MT CO2-e. Total percentage change is calculated as [209,469 MT/4,508,161 MT (total Scope 1 and Scope 2 emissions from 2019) x 100 = 4.6%]
Change in methodology	663,598	Decreased	14.7	Total Scope 1 emissions reductions due to change in methodology are from process and fugitive emissions from the natural gas system. For 2020, the California Public Utilities Commission approved PG&E's request to switch from a population-based emission factor to a leak-based emission factor calculation for customer meter leaks and distribution M&R station leaks. Total percentage change is calculated as [663,598 MT/4,508,161 MT (total Scope 1 and Scope 2 emissions from 2019) x 100 = 14.7%]

Change in boundary				
Change in physical operating conditions				
Unidentified				
Other				

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	111,894	14,964,226	15,076,119
Consumption of purchased or acquired electricity		49,485	246,635	296,120
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		161,378	15,210,861	15,372,239

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Biodiesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

9.45

Unit

kg CO2e per gallon

Emissions factor source

Climate Registry Default Emission Factors

Comment

Fuels (excluding feedstocks)

Compressed Natural Gas (CNG)

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

110

Unit

lb CO2 per 1000 cubic ft3

Emissions factor source

Climate Registry Default Emission Factors

Comment

Fuels (excluding feedstocks)
Fuel Oil Number 2

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
152,595

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

Emission factor
73.96

Unit
lb CO2 per million Btu

Emissions factor source
EPA Part 98

Comment

Fuels (excluding feedstocks)
Jet Kerosene

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
15,186

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

Emission factor
9.75

Unit
kg CO2 per gallon

Emissions factor source
Climate Registry Default Emission Factors

Comment

Fuels (excluding feedstocks)
Motor Gasoline

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
173,433

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

Emission factor
70.22

Unit
kg CO2 per million Btu

Emissions factor source
EPA Part 98

Comment

Fuels (excluding feedstocks)
Propane Gas

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
1,796

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat

0

Emission factor

61.46

Unit

kg CO2 per million Btu

Emissions factor source

EPA Part 98

Comment

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

14,990,307

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

53.02

Unit

kg CO2 per million Btu

Emissions factor source

EPA Part 98

Comment

Fuels (excluding feedstocks)

Other, please specify

Renewable Diesel Fuel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

110,589

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

73.96

Unit

kg CO2 per gallon

Emissions factor source

EPA Part 98

Comment

This represents Renewable diesel fuel used by PG&E diesel fleet vehicles.

Fuels (excluding feedstocks)

Other, please specify

Renewable Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1,305

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

53.02

Unit

kg CO2 per million Btu

Emissions factor source

Climate Registry Default Emission Factors

Comment

Converted to 110 lb CO2/1000 ft3 from 0.05 kg CO2/standard cubic foot (factor given in source). This represents renewable natural gas used by PG&E's CNG fleet vehicles.

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	22,482,517	182,361	455,019	16,151
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C-EU8.2d

(C-EU8.2d) For your electric utility activities, provide a breakdown of your total power plant capacity, generation, and related emissions during the reporting year by source.

Coal – hard

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Lignite

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Oil

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Gas

Nameplate capacity (MW)

1,403

Gross electricity generation (GWh)

6,393

Net electricity generation (GWh)

6,393

Absolute scope 1 emissions (metric tons CO2e)

2,559,546

Scope 1 emissions intensity (metric tons CO2e per GWh)

400.37

Comment

Biomass

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Waste (non-biomass)

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Nuclear

Nameplate capacity (MW)

2,240

Gross electricity generation (GWh)

16,310

Net electricity generation (GWh)

16,310

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Fossil-fuel plants fitted with CCS

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Geothermal

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Hydropower

Nameplate capacity (MW)

3,867

Gross electricity generation (GWh)

6,345

Net electricity generation (GWh)

6,345

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Wind

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Solar

Nameplate capacity (MW)

152

Gross electricity generation (GWh)

277

Net electricity generation (GWh)

277

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Marine

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Other renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Other non-renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Total

Nameplate capacity (MW)

7,662

Gross electricity generation (GWh)

29,325

Net electricity generation (GWh)

29,325

Absolute scope 1 emissions (metric tons CO2e)

2,559,546

Scope 1 emissions intensity (metric tons CO2e per GWh)

87.28

Comment

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method

Other, please specify

Grid mix of renewable electricity

Low-carbon technology type

Other, please specify

Solar PV, concentrated solar power (CSP), wind, hydropower, nuclear, biomass (including biogas)

Country/area of consumption of low-carbon electricity, heat, steam or cooling

United States of America

MWh consumed accounted for at a zero emission factor

236,026

Comment

After accounting for consumed electricity through the Solar Choice program, 79% of delivered electricity was delivered by zero-emitting resources [(% zero-emitting)*(electricity consumption - Solar Choice MWh) + Solar Choice MWh] = ~79%*(296,120-12,425)+12,425 = 236,026.

C-EU8.4

(C-EU8.4) Does your electric utility organization have a transmission and distribution business?

Yes

C-EU8.4a

(C-EU8.4a) Disclose the following information about your transmission and distribution business.

Country/Region

United States of America

Voltage level

Transmission (high voltage)

Annual load (GWh)

78,497

Annual energy losses (% of annual load)

14.07

Scope where emissions from energy losses are accounted for

Scope 2 (market-based)

Emissions from energy losses (metric tons CO2e)

198,598

Length of network (km)

29,000

Number of connections

35

Area covered (km2)

181,299

Comment

At December 31, 2020, the Utility owned approximately 18,000 circuit miles of interconnected transmission lines operating at voltages ranging from 60 kV to 500 kV. The Utility also operated 35 electric transmission substations with a capacity of approximately 66,000 MVA. The Utility's electric transmission system is interconnected with electric power systems in the Western Electricity Coordinating Council, which includes many western states, the Canadian provinces of Alberta and British Columbia, and parts of Mexico.

PG&E does not calculate the split between its transmission and distribution emissions from line-losses. The Scope 2 emission value and % annual energy losses represent the total line-losses for PG&E's transmission and distribution system.

Country/Region

United States of America

Voltage level

Distribution (low voltage)

Annual load (GWh)

78,497

Annual energy losses (% of annual load)

14.07

Scope where emissions from energy losses are accounted for

Scope 2 (market-based)

Emissions from energy losses (metric tons CO2e)

198,598

Length of network (km)

173,809

Number of connections

826

Area covered (km2)

181,299

Comment

The Utility's electric distribution network consists of approximately 108,000 circuit miles of distribution lines (of which, as of December 31, 2020, approximately 25% are underground and approximately 75% are overhead), 68 transmission switching substations, and 758 distribution substations, with a capacity of approximately 32,000 MVA. The Utility's distribution network interconnects with its transmission system, primarily at switching and distribution substations, where equipment reduces the high-voltage transmission voltages to lower voltages, ranging from 44 kV to 2.4 kV, suitable for distribution to the Utility's customers.

These distribution substations serve as the central hubs for the Utility's electric distribution network. Emanating from each substation are primary and secondary distribution lines connected to local transformers and switching equipment that link distribution lines and provide delivery to end-users. In some cases, the Utility sells electricity from its distribution facilities to entities, such as municipal and other utilities, that resell the electricity. The Utility operates electric distribution control center facilities in Concord, Rocklin, and Fresno, California; these control centers form a key part of the Utility's efforts to create a smarter, more resilient grid.

PG&E does not calculate the split between its transmission and distribution emissions from line-losses. The Scope 2 emission value and % annual energy losses represent the total line-losses for PG&E's transmission and distribution system.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C-EU9.5a

(C-EU9.5a) Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation.

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Gas	12,337,000	5	2021	Capital budget includes costs primarily related to employee safety or regulatory requirements for natural gas generation and costs to install new or replace existing equipment or components to support natural gas generation activities.
Nuclear	22,000,000	8	2021	Capital budget includes replacement of equipment and capital structures, systems and components to safely and reliably operate and protect the plant. The costs also include costs to design, develop and enhance applications,

				systems and infrastructure technology solutions, and projects established for Nuclear Safety and Security regulatory-mandated projects.
Hydropower	223,617,000	87	2021	Capital budget includes purchase of tools and equipment required to perform various functions to maintain the safety and reliability of hydroelectric generation operations, costs for complying with the conditions required by FERC licenses, and other compliance work.

C-EU9.5b

(C-EU9.5b) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
Electric vehicles	PG&E has long been an industry leader in programs that encourage and facilitate the growth of electric vehicles in California. Our programs cover a wide range of offerings and serve a variety of customers. PG&E's $414 million of EV programs is one of the largest utility investment portfolios in the United States. PG&E's EV portfolio includes: (1) the EV Charge Network program: a $130 million program (ending 2021) to install Level 2 charging ports at multi-unit dwellings and workplaces; (2) SB 350 Programs: up to approximately $269 million to support make ready infrastructure for medium and heavy-duty fleets in the EV Fleet program (ending 2024) and to support DC fast charger installations at public sites in the EV Fast Charge program (ending 2025);	414,000,000	11.8	2025

	(3) the EV Schools and Parks program: an approximately $11 million program (ending 2023) to install charging infrastructure at California schools and state parks and beaches; and (4) the Empower EV program: an approximately $4 million program (ending 2022) that supports chargers and panel upgrades for low- and moderate-income customers through incentives and education and outreach opportunities. The total CAPEX for products and services refers to PG&E's annual capital expenditures for electric operations.			
Smart grid	Highlights of PG&E's Smart Grid deployment update include: (1) Distribution Supervisory Control and Data Acquisition (SCADA) Program, which is focused on increasing SCADA penetration in the distribution system and improving reliability for PG&E's customers. PG&E's goal is to achieve 100% visibility and control over all critical distribution substation breakers over the next few years by adding or replacing SCADA for approximately 530 substations and 3,400 breakers. Between 2011 and 2020, the project has upgraded or replaced SCADA in 517 substations and 2,230 breakers. PG&E estimates that it will achieve 98% penetration by December 2022. (2) Modular Protection Automation and Control (MPAC) Installation Program, which aims to deploy pre-engineered, fabricated, and standardized control buildings in transmission substations. As of 2020, PG&E had installed and completed 124 MPAC buildings and avoided $2.6 million in capital costs over traditional upgrade methods in 2020. PG&E has avoided $72.4 million in	78,513,000	2.2	2021

	capital costs cumulatively since the program began in 2005. The total CAPEX for products and services refers to PG&E's annual capital expenditures for electric operations.			

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

C-CO9.6a/C-EU9.6a/C-OG9.6a

(C-CO9.6a/C-EU9.6a/C-OG9.6a) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Other, please specify Methane detection and reduction	Applied research and development	21-40%	1,800,000	In response to California SB 1371, PG&E is actively pursuing and testing methodologies and technologies to reduce methane emissions from gas operations. PG&E has been using advanced mobile technology for compliance leak surveys and has been at the forefront of this development through its partnership with Picarro. PG&E has also been using Differential Absorption Lidar (DIAL) LiDAR aerial surveys for a portion of its gas transmission system. PG&E has also initiated several R&D projects to improve leak detection technologies, including gas speciation to differentiate

				between biomethane and pipeline gas. During the 2020 Compliance Plan period (2020-2021), PG&E evaluated technologies that will be able to quantify emissions from compressor stations and its regulator stations. In parallel, PG&E outlined efforts to explore new and advanced technologies to detect above ground leaks including gas imaging cameras, low-cost point sensors, and drone-based leak quantification technology through R&D projects. In this period, PG&E's R&D and Innovation team is pursing the following projects: (1) Developing a classification framework and methodology that will provide more accurate quantitative emissions at regulator stations. (2) Exploring meter set leak qualifications, which PG&E has proposed to calculate using a bubble size-based approach. After PG&E published the procedure in December 2019, it became effective in July 2020. (3) Pursuing new methodologies to reduce methane emission from gas operations activities (e.g., alternatives to flaring by catalytically oxidizing methane) Exploring use of ZEVAC technology, which uses compressed air to eliminate emissions, in gas operations for non-emergency blowdowns. In PG&E's 2020 General Rate Case, PG&E had a total forecast of $1.2 million per year for R&D projects that support the 2020

				Compliance Plan (2020-2021) activities. In addition, PG&E has an adopted forecast of $0.6 million from the 2019 Gas Transmission and Storage rate case to support 2020 Compliance Plan activities. Therefore, PG&E has a total forecast of $1.8 million per year for R&D projects.
Infrastructure 1	Applied research and development	≤20%	12,200,000	The CPUC established the Electric Program Investment Charge (EPIC) to provide funding for public interest investments that benefit the electricity customers of PG&E, Southern California Edison, and San Diego Gas & Electric. EPIC provides funding for the following public interest investments: Applied research and development, Technology demonstration and deployment, and Market facilitation of clean energy technologies and approaches. The EPIC program enables PG&E to execute emerging technology demonstration and deployment projects that address emergent grid needs. Projects in the third triennial investment plan period include: Advanced Distributed Energy Resource Management Systems (DERM) and Advanced Distribution Management System (ADMS); Location Targeted DERs; Proactive Wire Down Mitigation; and Data Analytics for Predictive Maintenance. PG&E completed a total of 36 projects in its EPIC 1 & 2 triennial cycles, and has launched a total of 9 EPIC 3 projects. PG&E expects to launch 5 additional EPIC 3 projects before the end of 2021.

[1]EPIC provides funding for the following public interest investments:
Applied Research and Development (R&D)
Technology Demonstration and Deployment
Market facilitation of clean energy technologies and approaches

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Underway but not complete for reporting year – previous statement of process attached

Type of verification or assurance
Third party verification/assurance underway

Attach the statement

PG&E Emissions Verification Statement 2019.pdf

Page/ section reference
Pages 1-2

Relevant standard
The Climate Registry's General Verification Protocol

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Underway but not complete for reporting year – previous statement of process attached

Type of verification or assurance
Third party verification/assurance underway

Attach the statement

PG&E Emissions Verification Statement 2019.pdf

Page/ section reference
Pages 1-2

Relevant standard
The Climate Registry's General Verification Protocol

Proportion of reported emissions verified (%)
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Underway but not complete for reporting year – previous statement of process attached

Type of verification or assurance
Third party verification/ assurance underway

Attach the statement

PG&E Emissions Verification Statement 2019.pdf

Page/section reference

Page 23 - Electricity Purchased on Behalf of Customers; EPS Metric G-4; Average power deliveries metrics for system mix; All facility-specific generation metrics. Scope 3 sources include business Travel, customer natural gas use, electricity purchased on behalf of customers, employee commute, and waste.

Relevant standard

The Climate Registry's General Verification Protocol

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C4. Targets and performance	Other, please specify Generation emissions intensity	TCR Electric Sector Protocol	Verification of CO2 emissions intensity (lbs./MWh) of retail electricity sales (PG&E generation and procured electricity) [1]

[1]PG&E EPS Verification Statement 2019.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

California CaT - ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

California CaT

% of Scope 1 emissions covered by the ETS

73

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

40,507,062

Allowances purchased

Verified Scope 1 emissions in metric tons CO2e

2,845,973

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

The California Air Resources Board (ARB) allocates allowances to electrical distribution utilities (EDU) and natural gas suppliers (NG suppliers) on behalf of their ratepayers. PG&E receives allowance allocations under the EDU and NG allocation. PG&E is required under the regulation to consign all of its allocated EDU allowances for sale in ARB-run auctions. In 2020, PG&E was required to consign at least 50% of its allocated allowances as a NG supplier for sale in ARB-run auctions. This amount will increase by 5% each year through 2030. PG&E has been authorized by the CPUC to procure compliance instruments needed to meet its GHG compliance obligations. PG&E returns the revenue from consigned allowances to customers per CPUC decisions, primarily

through the California Climate Credit.* In 2020, the total Climate Credits were $71 for PG&E's residential electric customers and $27 for PG&E's natural gas customers.

Under ARB rules, PG&E is prohibited from disclosing any non-public information concerning auction participation and we are unable to provide the number of allowances purchased.

Allowances purchased: For the latest public data, see CARB's 2018 Compliance Report at https://www.arb.ca.gov/cc/capandtrade/2019compliancereport.xlsx?_ga=2.107182086.585127932.1624306181-1495786163.1599568900

Verified emissions in metric tons CO2e: For the latest public data, see CARB's Mandatory Reporting Rule webpage at https://ww2.arb.ca.gov/mrr-data

*For more information, see: https://www.cpuc.ca.gov/industries-and-topics/natural-gas/greenhouse-gas-cap-and-trade-program/california-climate-credit

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

PG&E has a compliance obligation under ARB's C&T program for emissions from: our electric generation units that exceed the inclusion threshold; imported electricity; natural gas compressor stations; and natural gas delivered to customers that are not separately covered by the C&T program (i.e., natural gas supplier obligation).

Each year, PG&E receives an allowance allocation for the following calendar year. PG&E's obligations with respect to the allocation differ based on whether the allowances are associated with its business as an EDU, or its business as a natural gas supplier. Under the C&T program, allowances are allocated to EDUs at no cost for the benefit of their customers. PG&E is required under the regulation to consign its EDU allowances in ARB-managed auctions, the revenues from which are distributed to customers primarily via the biannual Climate Credit. Starting in 2015, allowances are also allocated to natural gas suppliers at no cost for the benefit of their customers. Only a portion of these allowances are required to be consigned to auction, the revenues from which are primarily distributed via the annual Climate Credit, with the remainder being used directly for compliance. The ARB requires the consignment minimum to increase by 5% per year.

Compliance entities can also purchase ARB-issued offset credits from parties that develop projects from CARB-approved protocols that reduce GHG in sectors not regulated under the cap, such as forest management, destruction of ozone depleting substances, and methane capture projects. Compliance entities can use the ARB-issued offset credits to satisfy up to 8% of their compliance obligations up to 2020. On specified deadlines, entities must surrender compliance instruments (i.e., allowances and offset credits) in an amount equal to their GHG emissions during the period, to the ARB.

To manage regulatory risks, compliance, and costs, PG&E developed a GHG procurement strategy as part of its Bundled Procurement Plan that was approved by the CPUC.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Change internal behavior
Drive low-carbon investment

GHG Scope

Scope 1
Scope 3

Application

As an economy-wide market, the CA cap-and-trade (C&T) program covers emissions from PG&E's fossil-fuel power plants, natural gas distribution to customers not directly covered by the program, compressor stations, and electricity imported into CA. By applying a carbon price to the majority of PG&E's emissions, the C&T program allows PG&E to internalize the cost impacts of CO2 emissions across our business operations. In addition to market participation, PG&E also develops an IRP according to SB350. In the IRP, we consider several scenarios that combine constraints on GHG emissions and GHG allowance prices with other factors determined by the CEC and the CPUC as well as PG&E's propriety modeling. The overarching objective of the IRP process is to ensure that CA's load serving entities (such as PG&E) meet emissions reduction/renewable energy targets that allow the electricity sector to contribute to CA's economy-wide GHG emissions reduction goals. PG&E's IRP includes a 10-year forecast.

Actual price(s) used (Currency /metric ton)

Variance of price(s) used

Internal prices are confidential. Historical prices are available from CARB.

PG&E uses current and projected market prices for GHG emissions allowances based on the California Cap-and-Trade program. The annual allowance auction reserve price was $16.68 in 2020 and increases annually by 5% plus the rate of inflation. The average allowance price for 2020 was $17.12 (weighted average calculated from four auctions held in 2020).

In our IRP process, the conforming scenario GHG emission allowances prices ($2018) start at $14.73 in 2020 and increase to $53.16 in 2030. Additional scenarios and GHG emission allowances prices used by PG&E are confidential.

Type of internal carbon price

Other, please specify

Market Price

Impact & implication

Integrating carbon pricing helps achieve the three core objectives of the IRP analysis:
• Clean Energy: Focuses on meeting the state's aggressive goals for RPS, as well as meeting PG&E's LSE GHG planning target.
• Reliability: Includes PG&E's contribution to system and local reliability, in compliance with the CPUC's resource adequacy requirements.
• Affordability: Selects resources to meet the state's clean energy and reliability goals in a least cost manner and provides a system average rate forecast in compliance with the CPUC's requirements for IOUs.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change

Climate change performance is featured in supplier awards scheme

% of suppliers by number

5.4

% total procurement spend (direct and indirect)

78

% of supplier-related Scope 3 emissions as reported in C6.5

80

Rationale for the coverage of your engagement

We prioritize suppliers who represent approximately 80% of the company's spend (this represents our critical, most strategic suppliers) as well as our direct manufacturers, for focused attention on environmental sustainability. The spend data used is from the previous full calendar year. (Suppliers we are no longer doing business with are excluded from the spend data and assessment.) We evaluate suppliers against PG&E's Supplier Environmental Performance Standards (which incorporate greenhouse gas emissions and energy use elements) and use the resulting environmental performance scores to prioritize support.

We offer training for our suppliers, including a workshop on the basics of greenhouse gas calculations and reporting. The workshop included an exercise in which attendees had the opportunity to practice how to prepare a GHG report by setting the required boundaries, selecting the key performance indicators, and using the GHG calculators to determine the Scope 1 and 2 carbon dioxide equivalent (CO2e) emissions in a given case study. In addition to the in-depth GHG calculation workshop for PG&E suppliers, we also hosted a workshop for small and diverse businesses on understanding the importance of GHG causes and impacts.

Impact of engagement, including measures of success

As part of PG&E's Supplier Environmental Performance Standards, our scoring methodology (totaling five points) is broken down into three categories:
(1) Environmental Management System (EMS) & Tracking (2 points): Organization has an EMS in place to measure and track five performance areas: GHG emissions (Scope 1 and 2); energy; water; waste; and compliance with environmental requirements;
(2) Voluntary Reduction Goals (2 points): Organization has set voluntary reduction goals; and (3) Public Disclosure (1 point): Organization publicly reports annual progress against goals.

To score suppliers against the Supplier Environmental Performance Standards, as well as to identify areas for improvement, PG&E distributes an annual Sustainability Assessment to its suppliers with questions on how they are managing environmental impacts in their operations, including the five performance areas. Results from the assessment are used to generate an Environmental Performance score for each supplier.

In 2019, we enhanced the sustainability assessment to request supplier GHG emissions

and other environmental impact data. In 2020, 89% of respondents measured environmental performance, 51% set reduction targets, and 43% publicly reported on environmental performance.

Suppliers are encouraged to meet our expectations as part of doing business with PG&E and their own continuous improvement. PG&E's Supply Chain Responsibility team provides one-on-one coaching to suppliers to identify gaps and help them enhance their environmental performance.

PG&E's goal in 2020 was for 75% of top-tier suppliers to receive a score of 3 out of 5 or higher (point breakdown outlined above). In 2020, 66% of PG&E's suppliers met this target (a 4% improvement compared to 2019) with a 97% response rate from our 35 top-tier suppliers. Similar to 2019, suppliers not providing specific information on reduction targets were the primary driver of not meeting the 75% goal. In response, PG&E continues to increase efforts to educate suppliers on setting and sharing environmental reduction targets. PG&E also tracks the supplier response rate to the Annual Alliance Sustainability Assessment, which was 68% in 2020.

Comment

Type of engagement

Compliance & onboarding

Details of engagement

Included climate change in supplier selection / management mechanism
Climate change is integrated into supplier evaluation processes

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

% of supplier-related Scope 3 emissions as reported in C6.5

100

Rationale for the coverage of your engagement

PG&E has processes for identifying, assessing, mitigating, and monitoring environmental, social, and governance risks in the company's supplier base. To assess suppliers, PG&E leverages supplier conformance reviews conducted by a third-party, and data self-reported by suppliers to better understand risks and mitigation practices.

In many of our Request for Proposals (RFP), suppliers respond to a series of environmental sustainability questions designed to gauge the maturity of their environmental sustainability program prior to onboarding a supplier. A multiple-choice format set of 12 questions focuses on a supplier's company governance and operations,

assessment and scope, management system attributes, extent of reporting, and supplier/sub-contractor management. There are also two open-ended questions. In the first question, the supplier shares their three to five most significant environmental risks and their corresponding risk management processes. In the second question, the supplier can highlight best practices and innovative approaches that will be used to reduce the environmental footprint of the specific scope of work referenced in the bid opportunity. This specific question set is to be included in RFPs that will result in master service agreements or in bid events over $1 million dollars.

PG&E's Supplier Code of Conduct contains details around supplier expectations for environmental leadership and includes human rights, labor practices and conditions, child labor, fair and humane treatment, non-discrimination, and freedom of association, among other topics. The Code is included in our general terms and conditions in supplier contracts and is further communicated via Code training workshops.

Impact of engagement, including measures of success

The top priorities of PG&E's supply chain management strategy are safety, reliability, affordability, customer service, and supply chain responsibility. Environmental sustainability, program maturity, and supplier diversity are weighted up to 25% in the evaluation score for applicable RFPs. Additionally, contractors and sub-contractors performing medium- and high-risk work are required to meet minimum pre-qualification safety requirements to perform work for or on behalf of PG&E. For some top strategic suppliers, we use a supplier scorecard review process.

In 2019, we selected more than 130 suppliers to participate in a conformance review—managing supplier risk by evaluating our suppliers' management systems. In 2020, suppliers without a proper management system in place were given a corrective action plan to help bring them into conformance.

Comment

Type of engagement

Innovation & collaboration (changing markets)

Details of engagement

Other, please specify

SF6 Free Equipment Phase In

% of suppliers by number

0

% total procurement spend (direct and indirect)

0

% of supplier-related Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

Sulfur hexafluoride (SF6) is used as an electrical insulating material in high-voltage circuit breakers and gas-insulated switchgear. It's also a potent greenhouse gas—about 23,500 times as potent as carbon dioxide (CO2) on a per-ton basis and, once emitted, can live in the atmosphere for 800 to 3,200 years. The California Air Resources Board (ARB) SF6 regulation requires PG&E to achieve a 1% leak rate by 2020 and maintain this rate thereafter. PG&E is working with its suppliers and other utilities to advance technologies that do not contain SF6 gas. This will reduce emissions of SF6 and, therefore, contribute to greenhouse gas reduction goals and reduce risk for PG&E.

Impact of engagement, including measures of success

PG&E's near-term target is to achieve a 1% SF6 leak rate by 2020, which we narrowly missed with a rate of 1.1%. PG&E is also working towards the longer-term objective to phase-in SF6-free equipment as it becomes available and partnering with industry groups and other energy companies to accelerate the move to SF6-free equipment.

Comment

In 2020, PG&E continued to plan and contract for SF6-free circuit breakers at the 72kV and 115kV levels and gas insulated switchgear at different voltage levels as part of a pilot initiative. This equipment began to be installed in 2019 and progress continued in 2020. PG&E's Sourcing Department also amended PG&E's Qualified Supplier List to remove all 72kV equipment that contains SF6.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

5.4

% total procurement spend (direct and indirect)

78

% of supplier-related Scope 3 emissions as reported in C6.5

80

Rationale for the coverage of your engagement

We ask suppliers to provide information on their sustainable performance through requests for proposals (RFP), supplier scorecard reviews, and participation in an annual sustainability assessment. The supplier's response allows us to gauge the maturity of their environmental management systems and request quantitative data around their GHG, energy, water, and waste impacts.

All suppliers responding to the assessment are evaluated against PG&E's Supplier Environmental Performance Standards (which incorporate greenhouse gas emissions

and energy use elements) and use the resulting environmental performance scores to prioritize support. Additionally, in 2020, PG&E performed a utility supply chain GHG hot spot assessment with the Electric Utility Industry Sustainable Supply Chain Alliance. This resulted in the identification of construction services, vegetation management, and manufacturing as key sources of GHG emissions in supply chain.

Impact of engagement, including measures of success

PG&E distributes an annual Sustainability Assessment to its top spend suppliers and direct manufacturers with questions on how they are managing environmental impacts in their operations, including greenhouse gas emissions, energy and water usage, waste, and materials management. PG&E uses the assessment to monitor suppliers' conformance with the company's Supplier Environmental Performance Standards. Results from the assessment are used to generate an Environmental Performance score for each supplier.

PG&E's goal in 2020 was for 75% of top-tier suppliers to receive a score of 3 out of 5 or higher (point breakdown outlined above). In 2020, 66% of PG&E's suppliers met this target (a 4% improvement compared to 2019) with a 97% response rate from our 35 top-tier suppliers. Similar to 2019, suppliers not providing specific information on reduction targets were the primary driver of not meeting the 75% goal. In response, PG&E continues to increase efforts to educate suppliers on setting and sharing environmental reduction targets. PG&E also tracks the supplier response rate to the Annual Alliance Sustainability Assessment, which was 68% in 2020.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Education/information sharing

Details of engagement

Share information about your products and relevant certification schemes (i.e. Energy STAR)

% of customers by number

100

% of customer - related Scope 3 emissions as reported in C6.5

Please explain the rationale for selecting this group of customers and scope of engagement

By taking advantage of new technologies to help customers understand, actively manage, and reduce their energy use, PG&E enables customers to make more informed decisions. We work with customers to help them achieve energy savings and GHG emission reductions through programs and incentives for energy efficiency, demand response, and solar installations.

Based on extensive market research. PG&E has identified discrete customer segments to help the company develop tailored engagement strategies. This helps ensure that PG&E offers programs and incentives that are attractive and relevant to customers and ensures those customers who would benefit from the programs and incentives are aware of the options PG&E is offering.

For example, PG&E offers an EV Fleet program, designed to expand PG&E's charging infrastructure programs to medium- and heavy-duty fleets. Our goal is to install or rebate make-ready infrastructure at 700 sites by 2024 to support the adoption of 6,500 medium- and heavy-duty EVs -- at least 25% of the infrastructure portion of the budget will be invested in disadvantaged communities.

PG&E recognized that not all fleet managers are alike. A fleet manager at a school district has a different level of understanding of EV challenges and opportunities compared to a fleet manager at a large company. We implemented a targeted, persona/segment-specific outreach campaign that considered motivations for deploying EVs, commercial vehicle availability, grant funding opportunities, relevant messaging, and communications channels.

In 2019, efforts focused primarily on schools and transit segments due to the combination of grant funding availability and state mandates supporting electrification. In 2020, we expanded our focus to the distribution and delivery and the shuttle bus segments, since both have burgeoning markets, vehicle availability, and grant funding available.

Other efforts include offering energy efficiency audit and opportunity identification services to commercial customers, financial support to low income residential customers for energy-saving treatments, rebates to all customers implementing qualified energy efficiency measures, and helping local governments develop strategies and implementation plans to reduce emissions. We're also building out a growing network of EV charging stations for workplaces and apartment buildings.

Impact of engagement, including measures of success

We reach out to customers through a variety of channels, including mobile phones, email, web, and social media. The vast majority of customers can view and download their hourly usage and cost data.

We measure a composite score of customer satisfaction and are committed to improving satisfaction, which we benchmark against our peers. In 2018, our customer satisfaction rose to a high of 77.3, driven by customer satisfaction with service reliability

and pricing. In 2019, due to PG&E's Chapter 11 filing and multiple PSPS events, customer satisfaction with PG&E decreased from the prior year – the 2020 score remained consistent at 72.0.

In 2020, PG&E's programs helped customers save more than $308 million on their energy bills and avoid the emission of over 769,000 metric tons of CO2. We also brought the total number of interconnected private solar customers to more than 500,000 and customers with battery storage to nearly 19,000 -- double the installed capacity compared to 2019; and we expanded our energy efficiency financing program, which provides commercial customers and government agencies with loans for energy efficiency upgrades with no out-of-pocket costs and zero interest, funding 707 loans worth a total of $57 million.

We expanded our Home Energy Reports program in 2020, increasing participation by 20% from 2019 to reach 1.8 million customers by the end of the year. The program shows customers how their energy usage changes over time and how their usage compares with similar homes in their area. We placed a major emphasis on digital outreach in 2020, with more than 200,000 customers added to the email Home Energy Reports program. PG&E also enhanced rebates for smart thermostats. PG&E also promotes the Home Energy Checkup, a self-guided online assessment completed by 189,000 customers in 2020. Marketplace, an online tool to help customers research the efficiency of home appliances and consumer electronics -- and which also provided backup power equipment options to support customers affected by wildfires and Public Safety Power Shutoff events -- was visited by 91,500 in 2020.

For workforce education and training, PG&E held more than 400 classes and webinars while also offering 55 on-demand classes --reaching 19,800 participants to help building professionals gain new skills and expertise in energy efficient design and construction.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers
Trade associations
Funding research organizations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Clean energy generation	Support	PG&E is committed to California's implementation of SB 100 and carbon neutrality by	PG&E will be an active participant in future efforts in the Legislature to codify the carbon

		2045 in a reliable and cost-effective manner for customers. SB 100 is still being implemented by the CPUC, CEC, and CARB. PG&E generally supports the focus of this legislation, with consideration given to impact on customer rates. Additionally, Executive Order B-55-18 sets a state-wide goal to achieve carbon neutrality by 2045. PG&E is also engaging with federal policy makers on proposals to enact a federal Clean Energy Standard (CES) for the power sector.	neutrality goal and in proceedings at the CPUC, CEC, and CARB to determine how to achieve carbon neutrality in an affordable and reliable way. At the federal level, PG&E advocates that any national CES consider existing state programs, such as California's, and permit states to continue their more ambitious programs in a manner that continues to promote affordability, reliability, and clean energy deployment.
Other, please specify Transportation Electrification	Support	PG&E has engaged federal policy makers directly and through allied organizations, including as members of the National Coalition for Advanced Transportation, the Zero Emission Transportation Association, and the Edison Electric Institute to promote policies to increase the affordability of electric transportation, expand and increase access to refueling infrastructure, educate customers about electric vehicles, and promote research and development on grid benefits. At the state level, PG&E has engaged CARB in the development of the Advanced Clean Fleets regulation, which will require fleet owners or large entities that engage fleets to purchase more ZEV trucks over time. PG&E is supportive of the transition to ZEVs in its own fleet and is working with CARB to	At the federal level, PG&E advocates to expand and enhance the current federal tax credit for electric vehicles; provide grants, tax credits, and other incentives and policy changes to encourage the expansion of charging infrastructure; incentives to support electrification of fleet vehicles (e.g., school buses); and uphold California's ability to set its own vehicle emissions standards under the Clean Air Act.

		support the charging infrastructure that will be necessary to meet the ZEV fleet needs.	
Other, please specify Sulfur Hexafluoride Emissions Reduction	Support	PG&E supported CARB's proposed amendments to strengthen the sulfur hexafluoride (SF6) regulation. PG&E supports an orderly and systematic transition of the electricity transmission and distribution industry away from the use of SF6 in gas insulated equipment due to the high global warming potential of SF6 and the lack of a feasible destruction method for this persistent greenhouse gas. PG&E continues to work with CARB and industry on this rulemaking in 2021.	CARB will finalize regulatory amendments to phase out use of SF6 in gas-insulated equipment (GIE), further reduce GHG emissions, and clarify regulatory requirements in 2021.
Other, please specify All-Electric New Building Construction	Support	PG&E supported the California Energy Commission's efforts to advance efficient, all-electric new construction, when it is feasible and cost-effective, through the forthcoming rulemaking for the 2022 iteration of California's Energy Code (Title 24, Part 6). PG&E submitted a letter of support in June 2020.	Achieving California's climate and clean air goals requires a range of approaches and tools, including increasing the use of energy-efficient electric appliances in buildings when cost-effective.
Adaptation or resilience	Support	PG&E was an active participant in the CPUC's first proceeding focused specifically on climate adaptation and resilience (Climate Change Adaptation Order Instituting Rulemaking). In response, PG&E is conducting a multi-year Climate Vulnerability Assessment and an associated community engagement campaign to understand how some of the most vulnerable communities we serve think about climate hazards and	This proceeding resulted in technical and policy guidance that will assist utilities in their mission to provide safe, reliable, affordable, and clean energy despite more frequent and severe climate impacts. At the federal level, PG&E advocates to institute incentives and policies that encourage infrastructure owners to increase the resilience of their systems to the effects of climate change, and provide investments,

		adaptation. This critical information will help PG&E plan adaptive climate action informed by customer and community perspectives. PG&E has also engaged federal policy makers directly and through allied organizations, such as the Business Council for Sustainable Energy, to support federal policies to increase climate adaption and resilience, such as an expansion to the FEMA Building Resilient Infrastructure and Communities Program and additional resources for tribal communities to bolster their resilience to climate change.	incentives, and technical guidance to communities to increase their climate resilience.
Other, please specify Renewable Natural Gas	Support	SB 1440 is intended to explore how California's gas delivery system can support the cost-effective reduction of short-lived climate pollutants (SLCP) and CO2 through the delivery of biomethane. In December 2019, PG&E participated in a Technical Workshop to Consider SB 1440 implementation – renewable natural gas (RNG) procurement as a cost-effective SLCP reduction strategy. In 2020, PG&E participated in Working Groups on RNG Interconnection Agreements and hydrogen injection standards and research. The staff proposal was released in June 2020.	PG&E contributed lessons learned from past procurement programs that should guide the formulation of an RNG procurement goal or target: 1) go slow to start, 2) who buys and who pays matters, 3) need for rules-based cost containment mechanism, and 4) one inclusive low carbon fuel program.
Other, please specify Federal Carbon Pricing	Support	PG&E has engaged Congressional policy makers directly and through allied organizations, including the CEO Climate Dialogue, to advocate for a federal price on carbon. The	Institute a well-designed federal price on carbon that enables cost-effective achievement of GHG reduction goals, covers all emitting sectors, provides flexibility in emission-reduction

		CEO Climate Dialogue is a group of 22 companies with over $1.4 trillion in combined annual revenue and 4 leading environmental non-profit organizations that are committed to advancing climate action and durable federal climate policy in the U.S. Congress.	strategies, promotes equity, and enables harmonization across jurisdictions over time. One of the six guiding principles of the CEO Climate Dialogue states that “an economy-wide price on carbon is the best way to use the power of the market to achieve carbon reduction goals in a simple, coherent and efficient manner.”
Energy efficiency	Support	PG&E has engaged federal policy makers directly and through allied organizations, such as Alliance to Save Energy and the Business Council for Sustainable Energy, to support federal policies to increase customer incentives for energy efficiency and robust federal energy efficiency standards for appliances and equipment.	Expand and enhance tax credits for energy efficiency improvements; provide robust federal funding for weatherization programs; and advocate for robust and timely implementation of the energy efficiency standards for appliance and equipment as required under the Energy Policy and Conservation Act.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

California Chamber of Commerce

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association’s position

The California Chamber of Commerce supports climate change laws and regulations that are cost-effective, technology-neutral, and promote the use of market-based strategies to reduce GHGs. The Legislature should ensure that any changes to California law safeguard the economy while having a demonstrable impact on GHG reduction and attract private capital to the state.

How have you influenced, or are you attempting to influence their position?

Serving on the Board

Trade association

California Council for Environmental and Economic Balance (CCEEB)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

CCEEB's Climate Change Project was launched in 2006 to assist the state in its implementation of AB 32 and the development of California climate change policies. Today, CCEEB continues to work to support California's climate leadership. The project brings together a diverse group of organizations, and frequently communicates directly with legislative and administration decision makers. The project works to ensure that California develops an efficient and effective regulatory structure and reduces GHG emissions for the greatest benefit to Californians. To protect the health of the economy, CCEEB supports credible, peer-reviewed, and transparent economic evaluations of state programs. The Climate Change Project works to ensure accurate and comprehensive emission inventories, clear and consistent reporting protocols and enforcement, and credit for early action measures, and verifiable GHG reductions.

How have you influenced, or are you attempting to influence their position?

PG&E actively participates in CCEEB's Climate Change Project and its work to develop and advocate for policy positions on pending climate change legislation and regulations. PG&E also serves on the board.

Trade association

Silicon Valley Leadership Group

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

The Silicon Valley Leadership Group (SVLG) continues to be actively involved in helping ensure the implementation of California's climate policies rewards efficiency, protects innovation, and provides flexibility to seek out and implement the lowest-cost solutions, while also meeting GHG reduction goals. In addition, the group is increasingly active in federal-level advocacy for smart energy and climate policies, as well as local climate change resilience.

How have you influenced, or are you attempting to influence their position?

Serving on the Board

Trade association

California Electric Transportation Vehicle Coalition

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

CalETC supports and advocates for the transition to a zero-emission transportation future as a means to spur economic growth, fuel diversity and energy independence, ensure clean air, and combat climate change. With every major automaker producing or announcing production of some type of electric vehicle, California is poised to continue to lead the transition of the transportation sector away from petroleum and towards electricity. CalETC will continue to support all aspects of the shift to electric transportation, working closely with our government, environmental, and industry partners to ensure a successful transition and cleaner air in California.

How have you influenced, or are you attempting to influence their position?

Serving on the Board

Trade association

Alliance to Save Energy

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Alliance states that energy efficiency is our nation's most abundant energy resource and a critical component of U.S. productivity and environmental sustainability. It is both a significant economic opportunity – representing one of the largest employment sectors in the energy economy – and the single most effective strategy we have for addressing climate change.

How have you influenced, or are you attempting to influence their position?

Serving on the Board

Trade association

Edison Electric Institute

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

Global climate change presents one of the biggest energy and environmental policy challenges this country has ever faced. EEI member companies are committed to addressing the challenge of climate change and have undertaken a wide range of initiatives over the last 30 years to reduce, avoid, or sequester GHG emissions. Policies

to address climate change should seek to minimize impacts on consumers and avoid harm to U.S. industry and the economy.

How have you influenced, or are you attempting to influence their position?

Serving on the Board

Trade association

American Gas Association

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's position

The American Gas Association's "Climate Change Position Statement" notes that the organization and its members are committed to reducing greenhouse gas emissions through smart innovation, new and modernized infrastructure, and advanced technologies that maintain reliable, resilient, and affordable energy service choices for consumers. AGA believes the development of an effective national policy approach to reducing greenhouse gas emissions and addressing climate change should: be economywide; recognize the benefits of natural gas; remove barriers to the modernization of natural gas infrastructure including for methane emission reductions; improve energy efficiency; promote use of renewable natural gas; expand research and development; and preserve customer choice.

How have you influenced, or are you attempting to influence their position?

Serving on the Board

Trade association

Nuclear Energy Institute

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

NEI states that we need deep decarbonization to hit our climate goals. As the nation's largest source of clean energy, nuclear power is critical to reduce carbon emissions. Wind, solar, and geothermal are on the rise, but the smartest policies will ensure these technologies complement, not replace, nuclear's clean energy production.

How have you influenced, or are you attempting to influence their position?

Membership in organization

Trade association

National Hydropower Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

NHA believes hydropower can facilitate the transition to a low-carbon, clean, affordable, and reliable electric power system. Hydropower projects, including conventional, run of river, marine energy, hydrokinetic and pumped storage, are critical resources to enable this transition. Hydropower can and should continue to play a key role in meeting existing and future carbon reduction goals in both the electricity and transportation sectors. Policies should be designed to achieve the most efficient carbon reductions through technology-neutral, market-based signals that incentivize the choice of "least-cost" generation that meet carbon emission goals while maintaining electric reliability. Such policies should be indifferent to project size, age, or location.

How have you influenced, or are you attempting to influence their position?

Serving on the Board

Trade association

Interstate Natural Gas Association of America (INGAA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Interstate Natural Gas Association of America (INGAA) launched in 2021 its vision for addressing climate change. The vision outlines members' commitments to reduce individual GHG emissions from natural gas transmission and storage operations and as an industry reach net-zero GHG emissions from natural gas transmission and storage operations by no later than 2050, supported by necessary technology advancements and sound public policy initiatives.

How have you influenced, or are you attempting to influence their position?

Serving on the Board

Trade association

California Hydrogen Business Council

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The vision of the California Hydrogen Business Council is to reinforce California's position as the most advanced clean energy state in the nation, expanding the sustainable use of its precious natural and renewable resources and providing clean air

to its citizens, by adopting hydrogen and fuel cell technologies in transportation, power and goods movement markets.

How have you influenced, or are you attempting to influence their position?

Serving on the Board

Trade association

The Coalition for Renewable Natural Gas (RNG Coalition)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

RNG Coalition advocates for sustainable development, deployment, and utilization of renewable natural gas so that present and future generations will have access to domestic, renewable, clean fuel and energy.

How have you influenced, or are you attempting to influence their position?

Serving on the Board

Trade association

The Zero Emission Transportation Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

ZETA is the first industry-backed coalition of its kind advocating for the full adoption of electric vehicles (EV) by 2030, which will create hundreds of thousands of new jobs, secure American global EV manufacturing leadership, dramatically improve public health, and significantly reduce carbon pollution. The organization supports a broad suite of policies to advance electric transportation, including robust GHG standards for vehicles to drive down emissions and support cooperative federalism of California's Clean Air Act waiver authority.

How have you influenced, or are you attempting to influence their position?

Serving on the Board

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

No

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Since 2006, PG&E has maintained a Climate Change Policy Framework to guide our activities and ensure consistency with PG&E's climate change strategy. The framework outlines principles for PG&E's programs and policies to address global climate change. Specifically, PG&E supports national action, and is also focused on state, regional, and local action that achieves economy-wide emission reductions efficiently, economically, and in a way that encourages the next generation of energy technologies and minimizes impacts to the U.S. economy.

Our approach to climate change policy is managed by a cross-functional team comprised of representatives from across the company. The team meets regularly and actively coordinates with PG&E's executives to share developments at the state and national levels and seek approval on policy positions.

PG&E's Climate Change Policy Principles state the following: Meeting the challenge of climate change is central to PG&E's ability to deliver on our "triple bottom line" approach of serving people, the planet and California's prosperity—underpinned by strong operational performance.

Consistent with this framework, PG&E works to reduce greenhouse gas emissions and environmental impacts from our operations and acts as a valuable partner and enabler to do so with our customers, the State of California and beyond. PG&E also builds climate resilience by adapting to and preparing for a changing climate and associated weather patterns that could affect our assets, infrastructure, operations, coworkers and customers.

PG&E is committed to achieving more sustainable operations and enabling our customers to reduce greenhouse gas emissions by:

- Making our facilities more energy efficient and sustainable, increasing clean vehicles and fuels in our fleet, and adopting environmentally responsible products and services.
- Reducing emissions of methane, a potent greenhouse gas released from the operation of natural gas infrastructure, by implementing Senate Bills 1371 and 1383, which address leak abatement and short-lived climate pollutants, respectively.
- Evolving the natural gas system by supporting emerging renewable gas technologies to decarbonize the gas system coupled with critical low-carbon thermal generation to supply electricity during peak electric demand.
- Supporting all-electric building codes and standards for new construction and identifying opportunities for strategic electrification.
- Engaging with our customers to help them use less energy and better manage their energy footprint through solutions that include energy efficiency and demand response; clean and renewable energy and fuels; storage; and low-carbon transportation fuels and fueling infrastructure.
- Integrating climate science into PG&E's decision-making and asset planning to mitigate climate risks and build resilience to long term climate-driven impacts.

PG&E advocates for policies that:

- Position California to achieve economy-wide carbon neutrality by 2045 and support nation-wide decarbonization efforts consistent with science-based emissions reduction targets to achieve carbon neutrality by 2050 or sooner.
- Support cost-effective achievement of greenhouse gas emission-reduction goals through clean energy and technology-neutral and flexible strategies that foster innovation and technology, including California's Low Carbon Fuel Standard.
- Support well-designed carbon pricing mechanisms, including California's Cap-and-Trade Program, with environmental integrity, cost containment and recognition of early actions.
- Support disadvantaged and vulnerable communities and the workforce in an equitable and just transition to a carbon neutral future.
- Support strategies that also lead to community-level local air quality improvements.
- Promote research and development of natural climate solutions and new technologies needed to enable decarbonization, including hydrogen production, carbon capture, energy storage, renewable natural gas and other power-to-gas/liquids technology.
- Support policies that will enable the unprecedented infrastructure build rates and the associated transmission system that will be necessary to decarbonize the economy.
- Support PG&E's ability to invest in and adaptively manage a modern and resilient energy system that can better withstand climate-related impacts and enable PG&E to continue providing safe, reliable, affordable and clean energy in the face of a changing climate.
- Support market reforms and changes to the regulatory structure that enable deep decarbonization, including building codes and appliance standards, policies to address gas and electric system affordability, and enhanced integration of the Western grid to accommodate demand and supply-side shifts in energy.
- Promote and support customer incentives that do not unduly shift costs to other customers, including energy efficiency, building electrification, and zero emission vehicle adoption and fueling infrastructure installation.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports

Status

Complete

Attach the document

2021 Proxy.pdf

2020 Annual Report.pdf

Page/Section reference

Whole document

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication

In voluntary sustainability report

Status

Complete

Attach the document

PGE_CRSR_2020.pdf

Page/Section reference

Whole document

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication

In other regulatory filings

Status

Complete

Attach the document

PGE-GRC-Application-2023.pdf

Page/Section reference
Whole document

Content elements
Risks & opportunities

Comment

Publication
In voluntary communications

Status
Complete

Attach the document

PGE_climate_resilience_report.pdf

Page/Section reference
Whole document

Content elements
Other, please specify
Climate resilience

Comment

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Executive Vice President, Corporate Affairs	Chief Sustainability Officer (CSO)