

PG&E Corporation - Water 2018

W0. Introduction

W0.1

(W0.1) Give a general description of and introduction to your organization.

PG&E Corporation is an energy-based 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. Based in San Francisco, with approximately 23,000 employees, PG&E delivers some of the nation's cleanest energy to nearly 16 million people in Northern and Central California. PG&E Corporation had more than \$68 billion in assets as of December 31, 2017, and generated revenues of more than \$17 billion in 2017.

Water is essential to the California economy, as well as the health and well-being of its communities. Water is also integral to the state's energy infrastructure, including PG&E's vast hydroelectric system. In April 2017, Governor Brown issued an Executive Order signaling the end of California's drought state of emergency. Though drought conditions have improved in California, the impacts on groundwater supplies and tree mortality are still evident. Moreover, last year's record precipitation following the historic drought signals the importance of planning for extreme weather conditions and their effects.

PG&E continues to use information and maps from the National Integrated Drought Information System (NIDIS), which show about 20% of California is in a state of severe drought. Currently, only a small portion of PG&E's service area is within the NIDIS severe drought area.

In 2017, PG&E continued efforts to conserve water in our facilities, help customers reduce water usage through energy efficiency measures, and educate our employees. PG&E is promoting sustainable water use in several ways:

- Strategically managing our power generation facilities
- Reducing water consumption at PG&E offices and service yards
- Coordinating with key agencies to prevent and prepare for wildfires
- Providing outreach and guidance to customers, particularly those in the agricultural community, on how to reduce water usage

Water is essential to operating our infrastructure—including our vast network of hydroelectric generating stations—just as it is essential to our customers in their daily lives. At the same time, about 20 percent of California's electricity usage goes toward moving, treating, disposing of, heating and consuming water. This connection, also known as the "water-energy nexus," places PG&E in a unique position to help our state and our customers.

PG&E relies on dry-cooling technologies for all but one of its thermal power plants; the other plant uses saltwater to supply its once-through cooling systems. Most of PG&E's freshwater use is for non-consumptive purposes, including, importantly, the generation of hydroelectric power.

PG&E is taking steps to conserve water in its facilities and operations and remains focused on identifying, reporting and repairing leaks quickly; managing its irrigation systems; installing low-flow plumbing fixtures and replacing landscaping with drought-resistant approaches.

PG&E offers customers a wide range of options to help them reduce their water use. Our water-saving solutions for residential customers include energy efficiency rebates for high-efficiency appliances, such as clothes washers, and shower heads. We also offer incentives to agricultural customers who convert from sprinkler systems to water-efficient drip irrigation, as well as programs for energy efficient pumping systems and more. Altogether, customers who participated in PG&E’s energy efficiency programs reduced water usage by about 210 million gallons in 2017.

Extreme weather events driven by climate change are causing unprecedented and unanticipated wildfires. Years of drought, extreme heat and 129 million dead trees have created a new level of risk for our state, which must continue to adapt to meet these challenges. PG&E's Community Wildfire Safety Program implements additional precautionary measures intended to reduce wildfire threats and strengthen our communities for the future following the 2017 wildfires. We are bolstering wildfire prevention and emergency response efforts, putting in place new and enhanced safety measures, and doing more over the long term to harden our electric system to help reduce wildfire risks and to keep our customers safe.

W-EU0.1a

(W-EU0.1a) Which activities in the electric utilities sector does your organization engage in?

- Electricity generation
- Transmission
- Distribution

W-EU0.1b

(W-EU0.1b) For your electricity generation activities, provide details of your nameplate capacity and the generation for each power source.

	Nameplate capacity (MW)	% of total nameplate capacity	Gross generation (MWh)
Coal – hard	0	0	0
Lignite	0	0	0
Oil	0	0	0
Gas	1,403	18	5,712,000
Biomass			
Waste (non-biomass)			
Nuclear	2,240	29	17,951,000

	Nameplate capacity (MW)	% of total nameplate capacity	Gross generation (MWh)
Geothermal			
Hydroelectric	3,892	51	10,900,000
Wind	0	0	0
Solar	152	2	298,000
Other renewable			
Other non-renewable			
Total	7,687	100	34,861,000

W-OG0.1a

(W-OG0.1a) Which business divisions in the oil & gas sector apply to your organization?

Please select

W0.2

(W0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date
Reporting year	January 1, 2017	December 31, 2017

W0.3

(W0.3) Select the countries/regions for which you will be supplying data.

United States of America

W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.

USD

W0.5

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

Companies, entities or groups over which financial control is exercised

W0.6

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

Yes

W0.6a

(W0.6a) Please report the exclusions.

Exclusion	Please explain
PG&E owns and operates service centers, office buildings, substations, and gas compressor stations throughout our service area. We are currently tracking water use (not sewage) for 160 service centers and office sites, and a small percentage of substations and compressor stations.	PG&E plans to continue its efforts to assess, prioritize, and expand our collection and tracking of municipal water at the service centers and substation facilities that consume significant volumes of water using the Entech Environmental Management System data management system. The water use for most of these facilities is significantly less than that used in our electric generation operations.
PG&E is not able to track some of the delivered electricity purchased from the wholesale market back to a specific generator. Therefore, we are unable to report the associated water withdrawal from these power generation facilities.	PG&E purchases a portion of the electricity our customers demand from the wholesale market; however, we are unable to track the source of this electricity back to a specific generator and are therefore unable to report the associated water withdrawal.

W1. Current state

W1.1

(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Important	Important	PG&E owns and operates three natural-gas fired power plants: Humboldt Bay Generating Station, Colusa Generating Station, and Gateway Generating Station. These plants use dry-cooling technology. While some freshwater is used to generate steam, cool auxiliary equipment,

	Direct use importance rating	Indirect use importance rating	Please explain
			support fire water systems, and supply drinking water at the plants, these operations are largely closed-loop systems that minimize the amount of water consumed.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Important	PG&E owns and operates one of the nation's largest investor-owned hydroelectric systems and water quality is an important factor in the generation of this power. The system is built along 16 river basins stretching nearly 500 miles. Our hydroelectric power plants are largely non-consumptive, meaning that after water passes through turbines to produce electricity, it is returned to the river. PG&E's 66 powerhouses, as well as a pumped storage facility, have a total generating capacity of nearly 4,000 MW and rely on nearly 100 reservoirs. Approximately 5-15% of the power we deliver to our customers comes from hydroelectricity. PG&E has a long history of owning and managing thousands of acres surrounding our hydroelectric system. By managing these lands, PG&E is focused on protecting the water quality of the rivers that feed the hydroelectric system.

W1.2

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	100%	PG&E measures and monitors water withdrawal data for four power generation facilities owned and operated by PG&E. The facilities are Diablo Canyon Power Plant (Diablo Canyon), a 2,240 MW nuclear generation facility, and three state-of-the-art natural gas-fueled power plants that rely on dry cooling technology: Gateway Generating Station (530 MW), Humboldt Bay Generating Station (163 MW); and Colusa Generating Station (530 MW). PG&E also reports water withdrawal data for the three fuel cell units it owns and operates.
Water withdrawals – volumes from water stressed areas	100%	PG&E measures and monitors water withdrawal volume by sources and location.
Water withdrawals – volumes by source	100%	PG&E measures and monitors water withdrawal volume by sources. PG&E uses municipal water at its Gateway and Humboldt Bay Generating Stations, as well as its three fuel cell units.

	% of sites/facilities/operations	Please explain
Produced water associated with your oil & gas sector activities - total volumes	Not relevant	This question is not relevant to PG&E.
Water withdrawals quality	100%	PG&E measures and monitors water withdrawal data for four power generation facilities owned and operated by PG&E.
Water discharges – total volumes	100%	PG&E measures and monitors water discharge volumes. Of our owned power generation facilities, only one uses once-through cooling: Diablo Canyon Nuclear Power Plant. However, this power plant relies on saltwater (the Pacific Ocean) for once-through cooling. The chemical characteristics of the intake water at this plant are essentially the same as the discharged water. The plant operates in compliance with its respective water quality permit issued by the California State Water Resources Control Board. Diablo Canyon has a maximum discharge of 2.5 billion gallons per day. PG&E closely monitors the marine environment at the plant by conducting regular studies and sampling. The plant's Clean Water Act permit sets its maximum discharge levels and requires the monitoring and sampling initiatives that PG&E routinely engages in.
Water discharges – volumes by destination	100%	PG&E measures and monitors water discharge volumes by destination – saltwater (the Pacific Ocean) and local sanitation district for treatment.
Water discharges – volumes by treatment method	100%	PG&E measures and monitors water discharge volumes. However, Humboldt Bay and Gateway Generating Stations operate solely on municipal water for domestic and non-domestic purposes. After use at the plant, the water is discharged to the local sanitation district for treatment.
Water discharge quality – by standard effluent parameters	100%	PG&E measures and monitors water discharge quality in compliance with state and federal regulations.
Water discharge quality – temperature	100%	PG&E measures and monitors water discharge temperature in compliance with state and federal regulations.
Water consumption – total volume	100%	PG&E measures and monitors water consumption volumes. PG&E's three natural-gas fired power plants use dry-cooling technology. Some freshwater is used to generate steam, cool auxiliary equipment, support fire water systems, and supply drinking water at the plants, but these operations are largely closed-loop systems that minimize the amount of water consumed.

	% of sites/facilities/operations	Please explain
Water recycled/reused	51-75	A portion of the water used for hydrostatic testing was reused for other hydrostatic testing prior to being discharged, and more than half was recycled or reused for irrigation or dust control
The provision of fully-functioning, safely managed WASH services to all workers	Not relevant	This question is not relevant to PG&E.

W-EU1.2a

(W-EU1.2a) For your hydroelectric operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations measured and monitored	Please explain
Fulfilment of downstream environmental flows	100%	We have made it a priority to work collaboratively with diverse stakeholders regarding our ongoing management of the company's 25 federally-licensed hydroelectric projects that require regular renewal of operating licenses. Stakeholder interest primarily pertains to the levels and timing of stream flows as our hydroelectric facilities do not consume water. For example, in response to perilously dry conditions in Lake Pillsbury, a storage reservoir for PG&E's Potter Valley Hydroelectric Project, PG&E brought together key stakeholders, including state and local water resource agencies, federal and state fish and wildlife departments, and local Native American tribes and community groups to form the Lake Pillsbury Drought Working Group. Under our FERC license, PG&E is required to have a minimum amount of water flow downstream from Lake Pillsbury. The Working Group collaborated to make water management decisions that conserve enough water to ensure the health and protection of salmon and steelhead populations in the Eel River, as well as for agricultural and domestic water uses in the Russian River watershed.
Sediment loading	100%	As part of PG&E's 25 federally-licensed hydroelectric facilities, the utility is required to have Sediment Management Program Plans.
Other, please specify	Not relevant	

W1.2b

(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?

	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Total withdrawals	3,159,984	Lower	The "Brackish surface water/seawater" figure represents the volume of saltwater used for once-through cooling at Diablo Canyon power plant, as well as the saltwater used to produce (via reverse osmosis) the majority of the plant's freshwater.
Total discharges	3,158,980	Lower	These figures incorporate once-through cooling discharge (equivalent to withdrawal) plus estimated reverse osmosis system brine/backwash discharge. These figures also incorporate permitted freshwater discharge.
Total consumption	1,103	Higher	Data represents all municipal water withdrawals including domestic and process water for power plants, offices and service yards, public water systems owned and operated by PG&E, and water for hydrostatic testing of PG&E's natural gas system. The increase in water withdrawals are primarily related to an increase in safety-related hydrostatic testing on PG&E's natural gas transmission system. In addition, a greater number of PG&E offices and service yards are now included.

W1.2d

(W1.2d) Provide the proportion of your total withdrawals sourced from water stressed areas.

	% withdrawn from stressed areas	Comparison with previous reporting year	Identification tool	Please explain

W1.2h

(W1.2h) Provide total water withdrawal data by source.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Not relevant	<Not Applicable>	<Not Applicable>	PG&E does not withdraw fresh surface water for use at its power plants or facilities. In some cases, PG&E collects rainwater for use in landscape irrigation but does not measure quantities.
Brackish surface water/seawater	Relevant	3,158,907	Lower	PG&E uses saltwater at Diablo Canyon for once-through cooling in the electricity generation process. Diablo Canyon is PG&E's only once-through cooled plant. PG&E also uses saltwater at Diablo Canyon to generate the majority of the facility's freshwater through a seawater reverse osmosis process. This water is used for system operation, domestic/drinking water, and the fire water system and associated maintenance.
Groundwater – renewable	Relevant	21	Lower	Diablo Canyon freshwater sources are well water for backup and emergency purposes.
Groundwater – non-renewable	Not relevant	<Not Applicable>	<Not Applicable>	PG&E does not withdraw non-renewable groundwater.
Produced water	Not relevant	<Not Applicable>	<Not Applicable>	PG&E does not withdraw produced/process water; however, PG&E uses an on-site desalination plant to generate the majority of freshwater that supports the internal operations of the Diablo Canyon facility.
Third party sources	Not relevant	<Not Applicable>	<Not Applicable>	PG&E does not receive wastewater from another organization.

W1.2i

(W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water	Not relevant	<Not Applicable>	<Not Applicable>	PG&E does not discharge to fresh surface water.
Brackish surface water/seawater	Relevant	3,158,397	Lower	These figures incorporate once-through cooling discharge (equivalent to withdrawal) plus estimated reverse osmosis system brine/backwash discharge for PG&E's Diablo Canyon Power Plant.
Groundwater	Not relevant	<Not Applicable>	<Not Applicable>	PG&E does not discharge groundwater.
Third-party destinations	Not relevant	<Not Applicable>	<Not Applicable>	PG&E does not discharge wastewater for another organization.

W1.2j

(W1.2j) What proportion of your total water use do you recycle or reuse?

	% recycled and reused	Comparison with previous reporting year	Please explain
Row 1	Please select	Please select	

W-EU1.3

(W-EU1.3) Do you calculate water intensity for your electricity generation activities?

Yes

W-EU1.3a

(W-EU1.3a) Provide the following intensity information associated with your electricity generation activities.

Water intensity value	Numerator: water aspect	Denominator: unit of production	Comparison with previous reporting year	Please explain
0.03	Freshwater withdrawn	MWh	Lower	This includes PG&E's three natural gas-fueled power plants that rely on dry cooling technology: Gateway Generating Station, Humboldt Bay Generating Station; and Colusa Generating Station.
0.01	Freshwater withdrawn	MWh	Lower	This includes all of PG&E's owned generation facilities, including – nuclear and hydroelectric facilities

W-OG1.3

(W-OG1.3) Do you calculate water intensity for your activities associated with the oil & gas sector?

Please select

W1.4

(W1.4) Do you engage with your value chain on water-related issues?

Yes, our suppliers

W1.4a

(W1.4a) What proportion of suppliers do you request to report on their water use, risks and/or management information and what proportion of your procurement spend does this represent?

Row 1

% of suppliers by number

1-25%

% of total procurement spend

51-75

Rationale for this coverage

PG&E uses a competitive bid process to review and select sources of electric power for our customers. For renewable and new sources of conventional power, PG&E may conduct an environmental review as part of the due diligence process, considering factors such as water quality and availability. We are also taking a systematic, long-term approach to reduce the environmental impact of our non-fuel suppliers, enabling PG&E

to better serve our customers and take important steps toward our goal of environmental leadership. One important area of focus is establishing strong processes to manage the environmental performance of our top tier suppliers. These companies include the most strategic suppliers for our business, including those with whom we spend significant dollars and that are critical to our operations. We conduct recurrent performance evaluations with each top tier supplier using a scorecard of key performance indicators.

Impact of the engagement and measures of success

Impact of the engagement and measure of the success: PG&E distributes an annual Sustainability Survey to its top tier suppliers 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 survey to monitor suppliers' conformance with the company's Supplier Environmental Performance Standards. Results from the survey are used to generate an Environmental Performance score for each supplier. In 2017, over 40 suppliers had their Environmental Performance score incorporated in supplier performance scorecard reviews. Each scorecard review is attended by top management from both the supplier and PG&E, driving engagement in the key environmental areas.

Comment

With a result of 78%, PG&E exceeded its 2017 goal to have 75% of our top-tier suppliers achieve a three or higher on a five-point scale. Additionally, we added a new key performance indicator this year for environmental sustainability: Every applicable supply chain portfolio is to have at least 2 new initiatives identified or in progress annually.

W1.4b

(W1.4b) Provide details of any other water-related supplier engagement activity.

Type of engagement

No other supplier engagements

Details of engagement

<Not Applicable>

% of suppliers by number

<Not Applicable>

% of total procurement spend

<Not Applicable>

Rationale for the coverage of your engagement

Impact of the engagement and measures of success

<Not Applicable>

W2. Business impacts

W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts?

No

W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

No

W3. Procedures

W-EU3.1

(W-EU3.1) How does your organization identify and classify potential water pollutants associated with your business activities in the electric utilities sector that could have a detrimental impact on water ecosystems or human health?

W-EU3.1a

(W-EU3.1a) Describe how your organization minimizes the adverse impacts of potential water pollutants associated with your activities in the electric utilities sector on water ecosystems or human health.

Potential water pollutant	Description of water pollutant and potential impacts	Management procedures	Please explain
Other, please specify	Stormwater management	Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages	PG&E's operations are subject to extensive federal, state and local environmental laws and regulations. These requirements relate to a broad range of activities, including preventing the discharge of pollutants. To ensure we meet these requirements, PG&E follows an Environmental Management System (EMS) modeled after the ISO 14001 environmental management standard and consistent with the ISO standard's "Plan, Do, Check, Act" model for continuous improvement. The EMS uses a series of compliance work processes that help

Potential water pollutant	Description of water pollutant and potential impacts	Management procedures	Please explain
		Emergency preparedness	enable PG&E to manage regulatory compliance and our environmental impacts by each line of business. The Vice President, Land and Environmental Management of Pacific Gas and Electric Company, oversees our commitment to meeting environmental requirements. PG&E's integrated planning process provides a mechanism for managing environmental risk and compliance while driving continuous improvement, as do enterprise-wide initiatives such as our Corrective Action Program and numerous other forums. Compliance performance updates are reviewed monthly by PG&E's officers, and an annual environmental compliance summary is presented to the Compliance and Public Policy Committee of the PG&E Corporation Board of Directors.

W-OG3.1

(W-OG3.1) How does your organization identify and classify potential water pollutants associated with its activities in the oil & gas sector that may have a detrimental impact on water ecosystems or human health?
 Not applicable to PG&E.

W-OG3.1a

(W-OG3.1a) For each business division of your organization, describe how your organization minimizes the adverse impacts on water ecosystems or human health of potential water pollutants associated with your oil & gas sector activities.

Potential water pollutant	Business division	Description of water pollutant and potential impacts	Management procedures	Please explain
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W3.3

(W3.3) Does your organization undertake a water-related risk assessment?
 Yes, water-related risks are assessed

W3.3a

(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.
Direct operations

Coverage

Full

Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

Frequency of assessment

Annually

How far into the future are risks considered?

6 to 10 years

Type of tools and methods used

Databases

Other

Tools and methods used

National-specific tools or standards

Other, please specify (NIDIS)

Comment

PG&E uses information and maps from the National Integrated Drought Information System (NIDIS) U.S. Drought Portal to assess water risk and drought conditions at facilities located in water stressed areas. Additionally, since most of PG&E's facilities rely on municipal water supplies, these localities also maintain regular engagement with PG&E regarding drought conditions and voluntary or mandatory water conservation measures.

Supply chain**Coverage**

Partial

Risk assessment procedure

Water risks are assessed in an environmental risk assessment

Frequency of assessment

Annually

How far into the future are risks considered?

6 to 10 years

Type of tools and methods used

Databases

Tools and methods used

Other, please specify

To assess suppliers, PG&E leverages many external and internal data points -- contained in databases, produced by subject matter experts, and self-reported by suppliers to better understand and rank inherent risks and mitigation practices.

Comment

We prioritize our top tier suppliers, who represented approximately 60% of the company's spend in 2017, to participate in an annual Sustainability Survey. 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.

Other stages of the value chain**Coverage****Risk assessment procedure**

<Not Applicable>

Frequency of assessment

<Not Applicable>

How far into the future are risks considered?

<Not Applicable>

Type of tools and methods used

<Not Applicable>

Tools and methods used

<Not Applicable>

W3.3b

(W3.3b) Which of the following contextual issues are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	Water availability is vital to PG&E's hydroelectric operations. PG&E used the National Integrated Drought Information System (NIDIS) U.S. Drought Portal to assess facilities located in water stressed areas, as defined by level of drought. Additionally, PG&E employs a team of hydrographers who regularly measure snowpack to determine the spring runoff that ultimately will forecast how much hydroelectricity PG&E will generate for the coming year.
Water quality at a basin/catchment level	Relevant, always included	Water quality is vital to PG&E's operations. We are working to protect water quality in our operations through our program to comply with state permitting requirements for storm water management at our power plants and associated with construction projects.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	Throughout the FERC license renewal process for our hydroelectric facilities, PG&E works with stakeholders to assess the impacts of these projects and try to find agreement on appropriate resource management measures – such as fish and wildlife habitat protection, riverbed conservation, and recreational opportunities -- to include as conditions of the new licenses. We have made it a priority to work collaboratively with diverse stakeholders regarding our ongoing management of the company's 25 federally-licensed hydroelectric projects that require regular renewal of operating licenses. Stakeholder interest primarily pertains to the levels and timing of stream flows as our hydroelectric facilities do not consume water. For example, in response to perilously dry conditions in Lake Pillsbury, a storage reservoir for PG&E's Potter Valley Hydroelectric Project, PG&E brought together key stakeholders, including state and local water resource agencies, federal and state fish and wildlife departments, and local Native American tribes and community groups to form the Lake Pillsbury Drought Working Group. Under our FERC license, PG&E is required to have a minimum amount of water flow downstream from Lake Pillsbury. The Working Group collaborated to make water management decisions that conserve enough water to ensure the health and protection of salmon and steelhead populations in the Eel River, as well as for agricultural and domestic water uses in the Russian River watershed.
Implications of water on your key commodities/raw materials	Relevant, always included	PG&E's extensive hydroelectric system is an important source of clean energy for our customers. The actions we have taken to manage drought conditions are examples of our strategies to manage the risk associated with water scarcity.
Water-related regulatory frameworks	Relevant, always included	Existing and proposed federal and state water related laws and regulations are included in PG&E's water-related risk assessment activities.

	Relevance & inclusion	Please explain
Status of ecosystems and habitats	Relevant, always included	As part of PG&E's Land Conservation Commitment, we are permanently protecting some of California's most beautiful watershed lands—totaling more than 140,000 acres— through the donations of fee title and conservation easements on watershed lands to public agencies and qualified conservation organizations. These land donations will enhance or preserve natural habitat for fish, wildlife and plants; preserve open space and outdoor recreation for the general public; and protect sustainable forestry, agricultural uses and historic and cultural values in perpetuity. As an example of our efforts, PG&E donated 4,491 acres in the McArthur Swamp under an agreement with conservation groups designed to ensure the parcel will be preserved in perpetuity. PG&E retained ownership of an additional 3,168 acres at McArthur Swamp for hydropower generation, which will also be protected through a conservation easement held by Ducks Unlimited. This includes a nearly 500-acre parcel that PG&E restored to a seasonal wetland in 2012.
Access to fully-functioning, safely managed WASH services for all employees	Not considered	Not applicable.
Other contextual issues, please specify	Not considered	

W3.3c

(W3.3c) Which of the following stakeholders are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
Customers	Relevant, always included	PG&E provides some of the nation's cleanest energy to nearly 16 million people. The strong link between energy and water usage means that there is much PG&E can do. PG&E offers customers a wide range of options to help them reduce their water use through energy efficiency programs.
Employees	Relevant, always included	The actions by PG&E's approximately 23,000 employees at work and at home are important elements of the company's efforts to reduce water risk. PG&E has led employee water conservation campaigns to encourage employees to make a pledge to reduce their water usage at work and at home.
Investors	Relevant, always included	PG&E discloses water risk and actions we have taken to address drought conditions in California in our annual Corporate Responsibility and Sustainability Report and through the CDP information request.

	Relevance & inclusion	Please explain
Local communities	Relevant, always included	PG&E partners with local communities on water stewardship and natural resource management. We have worked together to manage risks associated with the drought, including collaborative efforts to reduce the risk of wildfire.
NGOs	Relevant, always included	PG&E coordinates with a diverse range of NGOs on water risks and actions to address drought conditions through its stakeholder engagement efforts.
Other water users at a basin/catchment level	Relevant, always included	In 2017, in response to record precipitation, PG&E strengthened its reservoir management to minimize spills or rapid changes in stream flows by coordinating across internal departments and frequently communicating and coordinating with government agencies and other organizations that may be affected by PG&E's water operations. Working with state agencies and other stakeholders, we found ways to manage water in our reservoirs so we could generate power during the summer peak demand periods. Conserving water early in the season also helps ensure adequate water supplies for communities, supports recreation and benefits the many species that depend on water. To manage reservoir storage, controlled spills (controlled releases greater than the required flow) were initiated at many locations in 2017 to drawdown reservoirs in preparation for snowmelt. Early controlled spills help mitigate large fluctuations in streamflow when uncontrolled spill occurs.
Regulators	Relevant, always included	PG&E works with numerous regulatory agencies to manage its water-related operations. For example, PG&E's hydroelectric system consists of 25 federally licensed projects. During the license renewal process, PG&E has made it a priority to work collaboratively with stakeholders, such as federal and state agencies, local community members, environmental organizations, Native American tribes, fishing interests and agricultural landholders.
River basin management authorities	Relevant, always included	PG&E actively participates as a stakeholder in the development and implementation of various water management plans.
Statutory special interest groups at a local level	Relevant, always included	PG&E works with watershed organizations and other groups at the local level.
Suppliers	Relevant, always included	PG&E maintains supplier environmental performance standards that set our expectation that all top tier suppliers: (1) implement an environmental management system that tracks: greenhouse gas emissions (Scope 1 and 2), energy, water, waste, and compliance with environmental requirements; (2) set voluntary reduction goals; and (3) publicly report their annual performance against goals.

	Relevance & inclusion	Please explain
Water utilities at a local level	Relevant, always included	PG&E remained focused on identifying, reporting and repairing leaks quickly; managing our irrigation systems; installing low-flow plumbing fixtures and replacing landscaping with drought-resistant approaches.
Other stakeholder, please specify	Relevant, always included	The 2017 water year set precipitation records as the wettest year on record in the Northern Sierra and PG&E's service area. PG&E actively collaborated with regulatory agencies and other stakeholders to assess the required water releases from our reservoirs to lessen drought impact on the environment as well as prolong availability of water for downstream users' needs. The reduced flows allow retention of water for later in the year while still preserving environmental values in the affected streams.

W3.3d

(W3.3d) Describe your organization's process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

The PG&E Corporation Board of Directors and Vice President, Internal Audit and Chief Risk Officer have oversight responsibility for risk management at PG&E. The senior-most executive of each line of business maintains a Risk and Compliance Committee, which has oversight responsibility for all associated activities for risk and compliance programs within their organization. As part of the integrated planning process, PG&E's senior executives annually assess our plans to manage risk and compliance, setting the foundation for structured strategy and resource allocation discussions. As part of a broader effort to build climate resilience, we are conducting foundational work to enable PG&E to assess infrastructure investments in light of climate change-related risk such as changing rainfall and runoff patterns, storm frequency and intensity, and sea level rise.

PG&E maintains a Climate Resilience Officer Coordination Committee and a Climate Resilience Working Group to manage the company's efforts to build climate resilience. Risks are reported to shareholders, the public, and other stakeholders through PG&E's Annual Form 10-K and Corporate Responsibility and Sustainability Report, and to regulators via reporting requirements.

PG&E is taking numerous steps, including working with the research community to better forecast water availability for hydro generation by installing a next-generation hydrographic data network that integrates satellite remote sensing data with ground-based measurements. This effort will enable PG&E to better measure and monitor snowpack, climate, soil moisture and other factors to improve monitoring and predictive tools, reduce uncertainty in water forecasts, and adapt to climate change. Additionally, as part of PG&E's enterprise risk management program, PG&E assessed a 2050 scenario of hydro conditions based on climate science projections.

W4. Risks and opportunities

W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes, both in direct operations and the rest of our value chain

W4.1a

(W4.1a) How does your organization define substantive financial or strategic impact on your business?

Water 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 for its customers and impact the long-term sustainability of PG&E as a company. PG&E recently refreshed its third-party led materiality assessment, which identified priorities for the long-term sustainability of our business. Developed through a structured process that included interviews with internal and external stakeholders, the assessment identified numerous material issues, including PG&E's GHG emissions, renewable energy, and climate change resilience. PG&E's Corporate Sustainability team then worked with the Corporate Strategy team to ensure the results of the materiality assessment informed and were appropriately reflected in PG&E's business strategy. Our water-related risk management efforts focus primarily on drought mitigation, climate change, once-through cooling, land subsidence, groundwater management, storm water, drinking water, water use and recycling, and discharge limitations.

W4.1b

(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?

	Total number of facilities exposed to water risk	% company-wide facilities this represents	Comment
Row 1	51	51-75	PG&E operates 106 hydroelectric generating units at 66 powerhouses. PG&E also operates two units at Diablo Canyon Nuclear Power Plant.

W4.1c

(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive impact on your business, and what is the potential business impact associated with those facilities?

Country/Region

United States of America

River basin

Other, please specify (Northern and Central California)

Number of facilities exposed to water risk

50

% company-wide facilities this represents

51-75

Production value for the metals & mining activities associated with these facilities

<Not Applicable>

% company's annual electricity generation that could be affected by these facilities

26-50

% company's global oil & gas production volume that could be affected by these facilities

% company's total global revenue that could be affected

Unknown

Comment

PG&E's hydroelectric generation facilities are located within the Pit, Cow-Battle Creek, Feather, DeSabra, Eel, Yuba, South Fork American, Mokelumne, Stanislaus, Merced, San Joaquin, Kings, Tule, and Kern River System Watersheds PG&E operates 106 generating units at 66 powerhouses. This proportion is based on the generation capacity of PG&E's hydroelectric generation system (3,892 MW) divided by the total generation capacity of the power plants PG&E owns and operates (7,687 MW). Climate scientists predict that climate change will result in significant reductions in snowpack in parts of the Sierra Nevada Mountains. This impact could, in turn, affect PG&E's hydroelectric generation.

Country/Region

United States of America

River basin

Other, please specify (Central Coast Region of California)

Number of facilities exposed to water risk

1

% company-wide facilities this represents

26-50

Production value for the metals & mining activities associated with these facilities

<Not Applicable>

% company's annual electricity generation that could be affected by these facilities

51-75

% company's global oil & gas production volume that could be affected by these facilities

Please select

% company's total global revenue that could be affected

Unknown

Comment

PG&E operates two units at Diablo Canyon Power Plant. This proportion is calculated by dividing the generation capacity of the facility (2,240 MW) by the total generation capacity of the power plants PG&E owns and operates (7,687 MW). It is important to note that while located in a water-stressed area, Diablo Canyon relies on salt water from the Pacific Ocean, not freshwater, for once-through cooling. In addition, Diablo Canyon primarily uses freshwater produced through seawater reverse osmosis. This freshwater is used in the plant's steam generation cycle, in closed cooling systems for auxiliary equipment, emergency fire water systems, and supply for the site's domestic drinking water system. Freshwater from well water is also used in limited circumstances, primarily as a back-up water supply for the plant's reverse osmosis system. The well water resource is confined to a topographically isolated aquifer at the Diablo Canyon Power Plant site.

W4.2

(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Region

United States of America

River basin

Other, please specify (Multiple river basins in California)

PG&E's hydroelectric generation facilities are located within the Pit, Cow-Battle Creek, Feather , DeSabra, Eel, Yuba, South Fork American, Mokelumne, Stanislaus, Merced, San Joaquin, Kings, Tule, and Kern River System Watersheds

Type of risk

Physical

Primary risk driver

Dependency on water intensive energy sources

Primary potential impact

Reduction or disruption in production capacity

Company-specific description

PG&E faces the risk of reduced hydroelectric output. (PG&E owns and operates the nation's largest investor-owned hydroelectric system, which relies on nearly 100 reservoirs located primarily in the higher elevations of California's Sierra Nevada and Southern Cascade mountain ranges.) Climate scientists predict that climate change will result in varying levels of precipitation in PG&E's service area. This impact could, in turn, affect PG&E's hydroelectric generation. One of the wettest water years on record was 2017. According to NOAA, precipitation during the 2016-2017 water year exceeded 100 inches across the higher elevations in the Sierra Nevada Mountains, with lesser amounts, 25-50 inches, falling across lower elevations.

Timeframe

More than 6 years

Magnitude of potential impact

Medium-high

Likelihood

Very likely

Potential financial impact

Explanation of financial impact

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.

Primary response to risk

Improve monitoring

Description of response

Development and calibration of distributed runoff forecasting models are enabling PG&E to improve planning and better manage increased variability and extremes. Possible long-term storage projects that would help mitigate the expected snowpack decline could potentially include the development of pump storage projects, new reservoir capacity, and additional capacity from other energy sources. To better understand precipitation patterns and potential impacts on PG&E's hydroelectric generation, the company is partnering with the University of California, Berkeley and the California Department of Water Resources on a multi-year research project involving PG&E's North Fork Feather River facilities. The research team is installing a next-generation hydrographic data network that integrates satellite remote sensing data with ground-based measurements. This will enable PG&E to better measure and monitor snowpack, climate, soil moisture and other factors to improve monitoring and predictive tools, reduce uncertainty in water forecasts and adapt to climate change. More broadly, PG&E has established an internal Climate Resilience Officer Committee, as well as a staff-level Climate Resilience Working Group, to coordinate work across enterprise risk management, integration and planning, and engagement.

Cost of response**Explanation of cost of response**

Management costs are projected to be less than 1% of operating revenue, which was more than \$17 billion in 2017.

Country/Region

United States of America

River basin

Other, please specify (Flooding from storm events)

Type of risk

Physical

Primary risk driver

Flooding

Primary potential impact

Impact on company assets

Company-specific description

Storm events in PG&E's service area can significantly impact PG&E's operations. This can create the need for emergency response from PG&E crews and require investments in infrastructure to make the system more resilient. There is an additional risk of infrastructure damage, customer outages and operational costs due to weather factors such as flooding, high winds and heavy snow.

Timeframe

More than 6 years

Magnitude of potential impact

Medium

Likelihood

Likely

Potential financial impact

125,000,000

Explanation of financial impact

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.

Primary response to risk

Improve monitoring

Description of response

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 a range of near-term risks, including extreme storms, and uses its risk-assessment process to assess infrastructure investments for longer-term risks associated with climate change. PG&E also engages with leaders from business, government, academia, and non-profit organizations to share information and plan for the future. More broadly, PG&E has established an internal Climate Resilience Officer Committee, as well as a staff-level Climate Resilience Working Group, to coordinate work across enterprise risk management, integration and planning, and engagement.

Cost of response

Explanation of cost of response

Management costs are projected to be less than 1% of operating revenue, which was more than \$17 billion in 2017.

Country/Region

United States of America

River basin

Other, please specify (Sea level rise)

Type of risk

Physical

Primary risk driver

Flooding

Primary potential impact

Impact on company assets

Company-specific description

PG&E faces the risk of higher inundation and flooding potential at coastal and low elevation facilities due to sea level rise when combined with high tides, storm runoff, and storm surges. There is the risk of levee erosion or failure, putting assets at risk. PG&E also faces the risk of damage to substations and other gas and electric infrastructure. PG&E is partnering with researchers at the UC Berkeley Center for Catastrophic Risk Management on a study to better understand how our gas transmission infrastructure may be impacted under the future risk of sea level rise coupled with a storm surge event. Based on a preliminary review of a worst case scenario of 1.4 meters of sea level rise coupled with a 100 year storm event, PG&E estimated the cost of mitigation efforts would be between \$4 and \$7 million annually.

Timeframe

More than 6 years

Magnitude of potential impact

Medium-high

Likelihood

Likely

Potential financial impact

4,000,000

Explanation of financial impact

PG&E partnered with researchers at the UC Berkeley Center for Catastrophic Risk Management on a study to better understand how our gas transmission infrastructure may be impacted under the future risk of sea level rise coupled with a storm surge event. Based on a preliminary review of a worst case scenario of 1.4 meters of sea level rise coupled with a 100 year storm event, PG&E estimated the cost of mitigation efforts would be between \$4 million and \$7 million annually.

Primary response to risk

Other, please specify (Improved planning and engineering)

Description of response

PG&E engineers are evaluating low elevation electric and gas facilities to determine site specific sea level rise risks. Where risks are identified, temporary mitigation measures can be initiated while permanent engineered adaptations are planned. More broadly, PG&E has established an internal Climate Resilience Officer Committee, as well as a staff-level Climate Resilience Working Group, to coordinate work across enterprise risk management, integration and planning, and engagement. In 2018, PG&E piloted beta versions of newly developed Climate Visualization and Screening tools on a significant transmission tower replacement initiative that is exposed to sea level rise. The results validated asset experts' desire to raise the transmission towers more than immediately necessary in light of future climate impacts. As a result, the transmission towers are being engineered to account for sea level rise projections.

Cost of response**Explanation of cost of response**

Management costs are projected to be less than 1% of operating revenue, which was more than \$17 billion in 2017.

W4.2a

(W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

W4.3

(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized

W4.3a

(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

Type of opportunity

Products and services

Primary water-related opportunity

Sales of new products/services

Company-specific description & strategy to realize opportunity

PG&E offers customers a wide range of options to help them reduce their water use. Our water-saving solutions for residential customers include energy efficiency rebates for high-efficiency appliances, such as clothes washers, and shower heads. We also offer incentives to agricultural customers who convert from sprinkler systems to water-efficient drip irrigation, as well as programs for energy efficient pumping systems and more. Working with Wexus Technologies, PG&E offered a new cloud-based tool that remotely connects pumps, buildings, SmartMeter devices and water flow meters, giving agricultural customers another option to track, interpret and manage their water and energy use effectively.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Medium

Potential financial impact

20,000,000

Explanation of financial impact

PG&E can earn a financial incentive for achieving the CPUC-approved customer energy efficiency targets. PG&E has earned between \$20-25 million per year based on historical averages. In 2017, PG&E was awarded \$21.9 million. Altogether, customers who participated in PG&E's programs reduced water usage by about 210 million gallons in 2017.

Type of opportunity

Efficiency

Primary water-related opportunity

Improved water efficiency in operations

Company-specific description & strategy to realize opportunity

We strive to achieve water reductions in our offices and service yards by finding and repairing leaks and replacing facility landscapes with drought-resistant designs, plants and materials. Outside 60 of our facilities, browning lawns displayed signs supporting the state's Save Our Water drought message.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Unknown

Potential financial impact

Explanation of financial impact

In 2017, we continued to operate and maintain our facilities using sustainable practices, but saw an increase in portfolio water usage by 1.6%. We have launched a number of strategic initiatives to improve facility sustainability performance.

Type of opportunity

Other

Primary water-related opportunity

Other, please specify (Collective Action)

Company-specific description & strategy to realize opportunity

For the fourteenth consecutive year, PG&E held a Water Conservation Showcase at our Pacific Energy Center in San Francisco, bringing together hundreds of industry professionals to hear from experts and engage with new technologies. For PG&E, the event is an extension of our focus on energy efficiency and sustainability, highlighting the direct connection between water and energy use.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Unknown

Potential financial impact

0

Explanation of financial impact

Hosted at the Pacific Energy Center in San Francisco, this free event is organized through collaboration with local chapters of the U.S. Green Building Council and American Institute of Architects as well as the San Francisco Public Utilities Commission and East Bay Municipal Utility District. A variety of topics were discussed including long-term water efficiency, strategies for eliminating water waste, the water-energy nexus, and more, from a range of institutions including the California Department of Water Resources, California Energy Commission, and the University of California. Sessions included talks on landscape irrigation, leak detection techniques and water reduction use at University of California campuses.

Type of opportunity

Other

Primary water-related opportunity

Other, please specify (Collective Action)

Company-specific description & strategy to realize opportunity

During the drought, PG&E placed a “Save Our Water” message on bills and envelopes sent to 4 million customers. Our 1.7 million e-bill customers received the drought message in e-bill inserts. We posted “Severe drought warning” signage at 200 buildings as well as at PG&E’s campgrounds located near our hydroelectric facilities.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Unknown

Potential financial impact

0

Explanation of financial impact

W5. Facility-level water accounting

W5.1

(W5.1) For each facility referenced in W4.1c, provide coordinates, total water accounting data and comparisons with the previous reporting year.

Facility reference number

Facility 2

Facility name (optional)

Diablo Canyon Power Plant

Country/Region

United States of America

River basin

Other, please specify (Central Coast Region of California)

Latitude

35.2117

Longitude

120.855

Primary power generation source for your electricity generation at this facility

Nuclear

Oil & gas sector business division

Not applicable

Total water withdrawals at this facility (megaliters/year)

3,158,928

Comparison of withdrawals with previous reporting year

Lower

Total water discharges at this facility (megaliters/year)

3,158,883

Comparison of discharges with previous reporting year

Lower

Total water consumption at this facility (megaliters/year)

46

Comparison of consumption with previous reporting year

About the same

Please explain

Diablo Canyon relies on salt water from the Pacific Ocean, not freshwater, for once-through cooling. In addition, Diablo Canyon primarily uses freshwater produced through seawater reverse osmosis. This freshwater is used in the plant's steam generation cycle, in closed cooling systems for auxiliary equipment, emergency fire water systems, and supply for the site's domestic drinking water system. Freshwater from well water is used in limited circumstances, primarily as a back-up water supply.

Facility reference number

Facility 1

Facility name (optional)

PG&E's hydroelectric generation facilities

Country/Region

United States of America

River basin

Other, please specify (Northern and Central California)

PG&E's hydroelectric generation facilities are located within the Pit, Cow-Battle Creek, Feather, DeSabra, Eel, Yuba, South Fork American, Mokelumne, Stanislaus, Merced, San Joaquin, Kings, Tule, and Kern River System Watersheds

Latitude

Longitude

Primary power generation source for your electricity generation at this facility

Hydroelectric

Oil & gas sector business division

Not applicable

Total water withdrawals at this facility (megaliters/year)

Comparison of withdrawals with previous reporting year

Total water discharges at this facility (megaliters/year)

Comparison of discharges with previous reporting year

Total water consumption at this facility (megaliters/year)

Comparison of consumption with previous reporting year

Please explain

PG&E operates 106 generating units at 66 powerhouses. This proportion is based on the generation capacity of PG&E's hydroelectric generation system (3,892 MW) divided by the total generation capacity of the power plants PG&E owns and operates (7,687 MW).

W5.1a

(W5.1a) For each facility referenced in W5.1, provide withdrawal data by water source.

Facility reference number

Facility 2

Facility name

Diablo Canyon Power Plant

Fresh surface water, including rainwater, water from wetlands, rivers and lakes

0

Brackish surface water/seawater

3,158,907

Groundwater - renewable

21

Groundwater - non-renewable

0

Produced water

0

Third party sources

0

Comment

The "Brackish surface water/seawater" figure represents the volume of saltwater used for once-through cooling at Diablo Canyon power plant, as well as the saltwater used to produce (via reverse osmosis) the majority of the plant's freshwater.

W5.1b

(W5.1b) For each facility referenced in W5.1, provide discharge data by destination.

Facility reference number

Facility 2

Facility name

Diablo Canyon Power Plant

Fresh surface water

0

Brackish surface water/Seawater

3,158,397

Groundwater

0

Third party destinations

486

Comment

These figures incorporate once-through cooling discharge (equivalent to withdrawal) plus estimated reverse osmosis system brine/backwash discharge. These figures also incorporate permitted freshwater discharge.

W5.1c

(W5.1c) For each facility referenced in W5.1, provide the proportion of your total water use that is recycled or reused, and give the comparison with the previous reporting year.

Facility reference number

Facility 2

Facility name

Diablo Canyon Power Plant

% recycled or reused

None

Comparison with previous reporting year

Please select

W5.1d

(W5.1d) For the facilities referenced in W5.1, what proportion of water accounting data has been externally verified?

Water withdrawals – total volumes

% verified

Not verified

What standard and methodology was used?

Water withdrawals – volume by source

% verified

Not verified

What standard and methodology was used?

Water withdrawals – quality

% verified

Not verified

What standard and methodology was used?

Water discharges – total volumes

% verified

Not verified

What standard and methodology was used?

Water discharges – volume by destination

% verified

Not verified

What standard and methodology was used?
Water discharges – volume by treatment method
% verified
Not verified

What standard and methodology was used?
Water discharge quality – quality by standard effluent parameters
% verified
Not verified

What standard and methodology was used?
Water discharge quality – temperature
% verified
Not verified

What standard and methodology was used?
Water consumption – total volume
% verified
Not verified

What standard and methodology was used?
Water recycled/reused
% verified
Not verified

What standard and methodology was used?

W6. Governance

W6.1

(W6.1) Does your organization have a water policy?
Yes, we have a documented water policy that is publicly available

W6.1a

(W6.1a) Select the options that best describe the scope and content of your water policy.

	Scope	Content	Please explain
Row 1	Company-wide	Description of business dependency on water Commitment to stakeholder awareness and education Commitment to water stewardship and/or collective action Recognition of environmental linkages, for example, due to climate change	PG&E's corporate environmental policy states the company's commitment to "find ways to produce, deliver, and use energy as safely and sustainably as possible." The policy also states the company's commitment to "comply fully with the letter and spirit of all applicable environmental laws and regulations" and "lead by example and reduce our impact on the environment by delivering clean energy, building more sustainable and climate-resilient operations, and serving as responsible stewards of land, wildlife and cultural resources," which includes continuing to pursue efforts to reduce water consumption. PG&E is promoting sustainable water use in a number of ways: (1) Strategically managing our power generation facilities, (2) Reducing water consumption at PG&E offices and service yards, (3) Coordinating with key agencies to prevent and prepare for wildfires, and (4) Providing outreach and guidance to customers, particularly those in the agricultural community, on reducing water use.

W6.2

(W6.2) Is there board level oversight of water-related issues within your organization?

Yes

W6.2a

(W6.2a) Identify the position(s) of the individual(s) on the board with responsibility for water-related issues.

Position of individual	Please explain
Other, please specify (Committee of the Board)	The Compliance and Public Policy Committee of PG&E Corporation's Board of Directors has primary oversight over PG&E's public policy, climate change, and corporate responsibility policies and practices. This includes the review of environmental 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.

W6.2b

(W6.2b) Provide further details on the board's oversight of water-related issues.

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - some meetings	<p>Monitoring implementation and performance</p> <p>Overseeing major capital expenditures</p> <p>Reviewing and guiding business plans</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding strategy</p> <p>Reviewing and guiding corporate responsibility strategy</p>	<p>The Compliance and Public Policy Committee of PG&E Corporation's Board of Directors has primary oversight over PG&E's public policy, climate change, and corporate responsibility policies and practices. This includes the review of environmental 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.</p>

W6.3

(W6.3) Below board level, provide the highest-level management position(s) or committee(s) with responsibility for water-related issues.

Name of the position(s) and/or committee(s)

Chief Sustainability Officer (CSO)

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

Annually

Please explain

At an individual level, PG&E's Chief Sustainability Officer has the overall responsibility for strategy and policy issues related to water, with input from the Vice President, Land and Environmental Management, among other officers.

W6.4

(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

No, and we do not plan to introduce them in the next two years

W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

Yes, direct engagement with policy makers

W6.5a

(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?

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. PG&E's approach to 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 leadership to share developments at the state and national levels and seek approval on policy positions. The Compliance and Public Policy Committee of PG&E Corporation's Board of Directors has primary oversight over PG&E's public policy, climate change, and corporate responsibility policies and practices. This includes the review of 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.

W7. Business strategy

W7.1

(W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	5-10	PG&E continually evaluates the potential impacts of climate change on its hydro generation system. The drastic change from a record-breaking drought to record-breaking precipitation marks a new era of climate extremes. The 2017 water year set precipitation records as the wettest year on record in the Northern Sierra and PG&E's service area.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	5-10	PG&E uses rainfall/snowmelt runoff forecasting tools to help provide guidance to operate hydro facilities safely. Streamflow forecasting consists of both long-term and short-term modeling tools. Longer-term, seasonal runoff models forecast the total amount of water expected at specific forecast points on rivers through July. This information is useful in reservoir planning and positioning reservoirs prior to snowmelt season. Short-term weather-dependent inflow forecasting is used to determine daily natural inflows and assists reservoir operators in short-term decision making. Reservoir management to minimize spills or rapid changes in stream flows requires effective communication with various departments. PG&E holds regular internal coordination calls to discuss weather outlook, flow forecasts, scheduled maintenance outages, risk of spill and operational plans. Additionally, there is frequent communication and coordination with government agencies and other organizations that may be affected by PG&E's water operations.
Financial planning	Please select	<Not Applicable>	

W7.2

(W7.2) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

	Water-related CAPEX (+/- % change)	Anticipated forward trend for CAPEX (+/- % change)	Water-related OPEX (+/- % change)	Anticipated forward trend for OPEX (+/- % change)	Please explain
Row 1					

W7.3

(W7.3) Does your organization use climate-related scenario analysis to inform its business strategy?

	Use of climate-related scenario analysis	Comment
Row 1	Yes	PG&E conducts proprietary modeling to assess key drivers of change for PG&E's relevant markets and to assess future risks and opportunities for PG&E's business strategy. PG&E's scenarios include specific assumptions for how climate-related factors could shape key elements of future markets including policy, technology, and customer trends. California's climate policies are a key component of the scenarios and set an overall emissions trajectory in line with 2°C goals. AB 32 requires the state to reduce GHG emissions to 1990 levels by 2020 and SB 32 requires 40% below 1990 levels by 2030. California's policy goals and regulatory structures including energy efficiency, vehicle and building electrification, renewable energy and energy storage factor prominently in the formation of assumptions used in our modeling. A range of market conditions, including demographics, household income growth, natural gas, carbon prices, and technology costs are also incorporated.

W7.3a

(W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?

Yes

W7.3b

(W7.3b) What water-related outcomes were identified from the use of climate-related scenario analysis, and what was your organization's response?

	Climate-related scenario(s)	Description of possible water-related outcomes	Company response to possible water-related outcomes
Row 1	Other, please specify (Propriety modeling)	Storm events in PG&E's service area can significantly impact PG&E's operations. This creates the need for emergency response from PG&E crews and require investments in infrastructure to make the system more resilient. There is an additional risk of infrastructure damage, customer outages and operational costs due to weather factors such as flooding, high winds and heavy snow. PG&E faces the risk of reduced hydroelectric output. (PG&E owns and operates one of the nation's largest investor-owned hydroelectric system, which relies on nearly 100 reservoirs located primarily in the higher	PG&E actively collaborates with our regulatory agencies and other stakeholders to assess the required water releases from our reservoirs to lessen drought impact on the environment as well as prolong availability of water for downstream users' needs. The reduced flows allow retention of water for later in the year while still preserving environmental values in the affected streams. In 2017, PG&E filed its Risk Assessment Mitigation Phase submittal with the CPUC, which includes quantifying top safety risks across PG&E and examines safety risks that may be exacerbated by climate change. The model

	Climate-related scenario(s)	Description of possible water-related outcomes	Company response to possible water-related outcomes
		<p>elevations of California's Sierra Nevada and Southern Cascade mountain ranges.) There is also increased risk to infrastructure from land subsidence that occurs as a result of increased groundwater extraction during extreme drought conditions. PG&E faces the risk of higher inundation and flooding potential at coastal and low elevation facilities due to sea level rise when combined with high tides, storm runoff, and storm surges. There is the risk of levee erosion or failure, putting assets at risk. PG&E also faces the risk of damage to substations and other gas and electric infrastructure. PG&E faces the risk of increased wildfire frequency and intensity in its service area. Wildfires pose a threat to 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 from our crews.</p>	<p>indicated potential safety consequences due to climate change, including in the near term.</p>

W7.4

(W7.4) Does your company use an internal price on water?

Row 1

Does your company use an internal price on water?

No, and we do not anticipate doing so within the next two years

W8. Targets

W8.1

(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.

	Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
Row 1	Company-wide targets and goals	Goals are monitored at the corporate level	Achieve top-decile performance in facility water reduction among industry peers

W8.1b

(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.

Goal

Engaging with customers to help them minimize product impacts

Level

Company-wide

Motivation

Sales of new products/services

Description of goal

PG&E offers customers a wide range of options to help them reduce their water use. Our water-saving solutions for residential customers include energy efficiency rebates for high-efficiency appliances, such as clothes washers, and shower heads. We also offer incentives to agricultural customers who convert from sprinkler systems to water-efficient drip irrigation, as well as programs for energy efficient pumping systems and more.

Baseline year

Start year

End year

Progress

Customers who participated in PG&E's programs reduced water usage by about 210 million gallons in 2017.

Goal

Engagement with public policy makers to advance sustainable water management and policies

Level

Company-wide

Motivation

Water stewardship

Description of goal

In response to California's drought, Governor Brown called on businesses to reduce water use by 25%. Although the state of emergency has been suspended, PG&E continues to work diligently to steward our water resources in a responsible manner.

Baseline year

Start year

End year

Progress

Generally, PG&E tracks legislative and regulatory developments involving water supply and discharge at the local, state, and federal levels. We coordinate with line of business managers to identify emerging issues, as well as evaluate specific regulatory and legislative proposals. Our water-related risk management efforts focus primarily on addressing climate change, drought impacts, once-through cooling, storm water, drinking water, water use and recycling, and discharge limitations.

Goal

Promotion of sustainable agriculture practices

Level

Company-wide

Motivation

Cost savings

Description of goal

Expanded agricultural energy efficiency programs and incentives.

Baseline year

Start year

End year

Progress

We continue to develop rebates and incentives on water and energy-saving appliances and equipment for our agricultural customers, including pump efficiency, variable frequency drives and energy efficiency financing. We are developing new approaches for managing irrigation and using audits to recommend energy and water conservation for food processing facilities. We are also helping customers replace sprinklers for field crops with more water efficient drip systems.

W9. Linkages and trade-offs

W9.1

(W9.1) Has your organization identified any linkages or tradeoffs between water and other environmental issues in its direct operations and/or other parts of its value chain?

Yes

W9.1a

(W9.1a) Describe the linkages or tradeoffs and the related management policy or action.

Linkage or tradeoff

Linkage

Type of linkage/tradeoff

Increased energy efficiency

Description of linkage/tradeoff

Water is essential to operating PG&E's infrastructure—including our vast network of hydroelectric generating stations—just as it is essential to our customers in their daily lives. At the same time, about 20 percent of California's electricity usage goes toward moving, treating, disposing of, heating and consuming water. This connection, also known as the "water-energy nexus," places PG&E in a unique position to help our state and our customers.

Policy or action

PG&E is promoting sustainable water use in a number of ways: • Strategically managing our power generation facilities • Reducing water consumption at PG&E offices and service yards • Coordinating with key agencies to prevent and prepare for wildfires • Providing outreach and guidance to customers, particularly those in the agricultural community, on how to reduce water usage PG&E's energy efficiency programs enable its residential and business customers to reduce water use, by incentivizing energy efficiency. Incentives for residential customers include energy efficiency rebates for high-efficiency appliances, such as clothes washers, and shower heads. We offer incentives to agricultural customers who convert from sprinkler systems to water-efficient drip irrigation, as well as programs for energy efficient pumping systems and more.

W10. Verification

W10.1

(W10.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1d)?

No, we do not currently verify any other water information reported in our CDP disclosure

W11. Sign off

W-FI

(W-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.

W11.1

(W11.1) Provide details for the person that has signed off (approved) your CDP water response.

	Job title	Corresponding job category
Row 1	Director, Corporate Sustainability	Environment/Sustainability manager