FILE NO: 171300

Petitions and Communications received from November 27, 2017, through December 4, 2017, for reference by the President to Committee considering related matters, or to be ordered filed by the Clerk on December 12, 2017.

Personal information that is provided in communications to the Board of Supervisors is subject to disclosure under the California Public Records Act and the San Francisco Sunshine Ordinance. Personal information will not be redacted.

From the Office of the Mayor, pursuant to Charter, Section 3.100, designating Supervisor Breed as Acting-Mayor from Monday, December 4, 2017, at 6:35 a.m. until Wednesday, December 6, 2017, at 10 a.m. Copy: Each Supervisor. (1)

From Julianne Polanco from the Department of Park and Recreation's Office of Historic Preservation, pursuant to Federal Regulations 36 CFR Part 60.6, submitting notice of National Register of Historic Places Nominations for The Woman's Building, San Francisco Central YMCA, and Coit Memorial Tower. Copy: Each Supervisor. (2)

From Tracey Bye, paralegal, Symantec Corporation, regarding the permanently eliminated positions in the Mountain View and San Francisco offices. Copy: Each Supervisor. (3)

From Pacific Gas & Electric Company, submitting a notice to increase rates for Gas Transmission and Storage Application. Copy: Each Supervisor (4)

From Colin Paul, regarding the need for a beekeeping ordinance. Copy: Each Supervisor. (5)

From concerned citizens, regarding the L-Taraval. Copy: Each Supervisor. (6)

From David J. Romano, regarding the homelessness and opioid. Copy: Each Supervisor. (7)

From concerned citizens, regarding the proposed MCD project located at 2161-2165 Irving Street. 2 letters. File No. 171188. (8)

From Sara Chandler, of the SFPUC Policy and Government Affairs, pursuant to Administrative Code, Section 21.15(c), submitting a Declaration of Emergency for the Tesla Treatment Center. (9)

From the Office of the Controller, submitting results of the 2017 City Survey. Copy: Each Supervisor. (10)

From Tessa D'Arcangelew, regarding Urban Shield. File No. 171196. Copy: Each Supervisor. (11)

From United States Bankruptcy Court Northern District of California San Francisco Division, submitting notice of a hearing on motion of the United States Trustee to convert or dismiss Chapter 11 Case. Copy: Each Supervisor. (12)

From Police Chief William Scott, Police Department, submitting a letter regarding the proposed legislation to rename the 600 block of Stevenson Street to "Odd Fellows Way." Copy: Each Supervisor. (13)

From Clean Power SF, pursuant to Ordinance 223-15, submitting a report on the CleanPowerSF Program for FY2016-2017. Copy: Each Supervisor. (14)

BOS-11
COBS, AIDE
Deputies, Dep
City Attny,
Mayor's Sft

OFFICE OF THE MAYOR
SAN FRANCISCO

EDWIN M. LEE
MAYOR

RECEIVED
BOARD OF SUPERVISORS
SAN FRANCISCO
2017 DEC -1 PM 4:14
BY: AK

December 1, 2017

Ms. Angela Calvillo
San Francisco Board of Supervisors
1 Dr. Carlton B. Goodlett Place, Room 244
San Francisco, CA 94102

Dear Ms. Calvillo,

Pursuant to Charter Section 3.100, I hereby designate Supervisor London Breed as Acting-Mayor from the time I leave the State of California on Monday, December 4, 2017, at 6:35 a.m. until I return on Wednesday, December 6, 2017, at 10:00 a.m.

In the event I am delayed, I designate Supervisor Breed to continue to be the Acting-Mayor until my return to California.

Sincerely,

Edwin M. Lee
Mayor

cc: Mr. Dennis Herrera, City Attorney

1 DR. CARLTON B. GOODLETT PLACE, ROOM 200
SAN FRANCISCO, CALIFORNIA 94102-4681
TELEPHONE: (415) 554-6141

State of California • Natural Resources Agency
Edmund G. Brown Jr., *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Lisa Ann L. Mangat, *Director*

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

BOS-11

November 29, 2017

Clerk of the Board
San Francisco County Board of Supervisors
City Hall, Room 244
1 Dr. Carlton B. Goodlett Place
San Francisco, California 94102

RE: National Register of Historic Places Nomination for The Women's Building

Dear Board of Supervisors:

Pursuant to Federal Regulations 36 CFR Part 60.6(c) I am notifying you that the State Historical Resources Commission (SHRC) at its next meeting intends to consider and take action on the nomination of the above-named property to the National Register of Historic Places (National Register). Details on that meeting are on the enclosed notice. The National Register is the federal government's official list of historic buildings and other cultural resources worthy of preservation. Listing in the National Register provides recognition and assists in preserving California's cultural heritage. If the item is removed from the scheduled agenda, you will be notified by mail.

Local government comments regarding the National Register eligibility of this property are welcomed. Letters should be sent to California State Parks, Attn: Office of Historic Preservation, Julianne Polanco, State Historic Preservation Officer, 1725 23rd Street, Suite 100, Sacramento, California 95816. So that the SHRC will have adequate time to consider them, it is requested, but not required, that written comments be received by the Office of Historic Preservation fifteen (15) days before the SHRC meeting. Interested parties are encouraged to attend the SHRC meeting and present oral testimony.

As of January 1, 1993, all National Register properties are automatically included in the California Register of Historical Resources (California Register) and afforded consideration in accordance with state and local environmental review procedures.

The federal requirements covering the National Register program are to be found in the National Preservation Act of 1966, as amended, and in Federal Regulations 36 CFR Part 60. State law regarding the California Register is in the Public Resources Code, Section 5024. Should you have questions regarding this nomination, or would like a copy of the nomination, please contact the Registration Unit at (916) 445-7009.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

Enclosures: Meeting Notice

NR_Local Gov County Notice_Final.doc

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

MEETING NOTICE

FOR: State Historical Resources Commission Quarterly Meeting

DATE: Friday, February 2, 2018

TIME: 9:00 A.M.

PLACE: State Resources Building—Auditorium
1416 9th Street
Sacramento, California 95814

This room is accessible to people with disabilities. Questions regarding the meeting should be directed to the Registration Unit (916) 445-7008.

BOS-11

State of California • Natural Resources Agency
Edmund G. Brown Jr., *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Lisa Ann L. Mangat, *Director*

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
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November 29, 2017

Clerk of the Board
San Francisco County Board of Supervisors
City Hall, Room 244
1 Dr. Carlton B. Goodlett Place
San Francisco, California 94102

RE: National Register of Historic Places Nomination for San Francisco Central YMCA

Dear Board of Supervisors:

Pursuant to Federal Regulations 36 CFR Part 60.6(c) I am notifying you that the State Historical Resources Commission (SHRC) at its next meeting intends to consider and take action on the nomination of the above-named property to the National Register of Historic Places (National Register). Details on that meeting are on the enclosed notice. The National Register is the federal government's official list of historic buildings and other cultural resources worthy of preservation. Listing in the National Register provides recognition and assists in preserving California's cultural heritage. If the item is removed from the scheduled agenda, you will be notified by mail.

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Sincerely,

Julianne Polanco
State Historic Preservation Officer

Enclosures: Meeting Notice

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY EDMUND G. BROWN, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816
(916) 445-7000 Fax: (916) 445-7053
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BOS 4

State of California • Natural Resources Agency
Edmund G. Brown Jr., *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Lisa Ann L. Mangat, *Director*

Julianne Polanco, State Historic Preservation Officer
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Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

November 29, 2017

Clerk of the Board
San Francisco County Board of Supervisors
City Hall, Room 244
1 Dr. Carlton B. Goodlett Place
San Francisco, California 94102

RE: National Register of Historic Places Nomination for Coit Memorial Tower (Amendment)

Dear Board of Supervisors:

Pursuant to Federal Regulations 36 CFR Part 60.6(c) I am notifying you that the State Historical Resources Commission (SHRC) at its next meeting intends to consider and take action on the nomination of the above-named property to the National Register of Historic Places (National Register). Details on that meeting are on the enclosed notice. The National Register is the federal government's official list of historic buildings and other cultural resources worthy of preservation. Listing in the National Register provides recognition and assists in preserving California's cultural heritage. If the item is removed from the scheduled agenda, you will be notified by mail.

Local government comments regarding the National Register eligibility of this property are welcomed. Letters should be sent to California State Parks, Attn: Office of Historic Preservation, Julianne Polanco, State Historic Preservation Officer, 1725 23rd Street, Suite 100, Sacramento, California 95816. So that the SHRC will have adequate time to consider them, it is requested, but not required, that written comments be received by the Office of Historic Preservation fifteen (15) days before the SHRC meeting. Interested parties are encouraged to attend the SHRC meeting and present oral testimony.

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Sincerely,

Julianne Polanco
State Historic Preservation Officer

Enclosures: Meeting Notice

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MEETING NOTICE

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1416 9th Street
Sacramento, California 95814

This room is accessible to people with disabilities. Questions regarding the meeting should be directed to the Registration Unit (916) 445-7008.

BOS-11

Symantec.

November 29, 2017

Sent via UPS

Mayor John McAlister
500 Castro Street
Mountain View, CA 94041

Mayor Edwin M. Lee
City Hall, Room 200
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

NOVA Consortium (North Santa Clara)
Ms. Kristan Stadelman, Director
North Valley Job Training Consortium (NOVA)
505 W. Olive, Suite 550
Sunnyvale, CA 94086

County of Santa Clara
Santa Clara Board of Supervisors
70 West Hedding Street, 10th Floor, East Wing
San Jose, CA 95110

County of San Francisco
San Francisco Board of Supervisors
1 Dr. Carlton B. Goodlett Place #244
San Francisco, CA 94102

WARN Act Coordinator
Program Support Unit
Workforce Services Division
Employment Development Department
722 Capitol Mall, MIC 50/Room 5099
Sacramento, CA 95814
eddwarnnotice@edd.ca.gov

Re. Notice of Layoff: Mountain View, California and San Francisco, California

To Whom It May Concern:

This letter is to notify you that Symantec Corporation will be permanently eliminating the positions of 33 employees in the Mountain View and San Francisco, California offices.

In the event the California Worker Adjustment and Retraining Notification Act is applicable, we hereby provide you with the following information in compliance with its provisions (Cal. Labor Code § 1400 et seq):

3

1. Location of Mountain View, California and San Francisco, California facilities:

Symantec Corporation
350 Ellis Street
Mountain View, California 94043

Symantec Corporation
303 2nd St. #1000
San Francisco, CA 94107

2. Expected dates of layoff:

Employees were notified in November 2017 and their termination date will be January 17, 2018. The layoffs are expected to be permanent.

3. Bumping rights:

None of the affected employees are represented by a union, and no bumping rights exist.

4. Job titles of positions to be affected, and the number of affected employees in each job:

See Attachment A.

5. For further information, please contact:

Mona Ramamurthy
Symantec Corporation
Human Resources
350 Ellis Street
Mountain View, CA 94043
(650) 527-3495

Any assistance that the State might provide to Symantec employees who will be losing their employment in Mountain View and San Francisco would be appreciated.

Sincerely,

Tracey Bye
Paralegal

Symantec

ATTACHMENT A

November 2017 Notifications (Symantec)		
Job Title	Headcount	Term Dates
Business Operations Analyst	2	1/17/2018
Princ Accountant	2	1/17/2018
Princ Financial Analyst	1	1/17/2018
Princ Program Manager	1	1/17/2018
Princ User Interface Designer	1	1/17/2018
Sr Administrative Specialist	1	1/17/2018
Sr Mgr, Finance	3	1/17/2018
Sr Princ Business Ops Analyst	2	1/17/2018
Princ Pricing & Licensing Spec	2	1/17/2018
Dir, Global Customer Service	1	1/17/2018
Sup, Consumer Support	1	1/17/2018
Sr Renewals Center Agent	3	1/17/2018
Inside Partner Sales Rep 2	1	1/17/2018
Mgr, Payroll	1	1/17/2018
Sr Tax Accountant	1	1/17/2018
Dir, On-Line Business Mktg	1	1/17/2018
Sr Princ Product Mktg Spec	1	1/17/2018
Dir, Search Strategy	1	1/17/2018
Sr Paralegal	1	1/17/2018
Software Development Engineer 5	2	1/17/2018
Sr. Payroll Specialist	2	1/17/2018
Dir, Development	1	1/17/2018
Dir, Marketing Ops	1	1/17/2018

November 29, 2017
TO: STATE, CITY AND LOCAL OFFICIALS

NOTIFICATION OF PACIFIC GAS AND ELECTRIC COMPANY'S REQUEST TO INCREASE RATES FOR GAS TRANSMISSION AND STORAGE APPLICATION (A.17-11-009)

Summary

On November 17, 2017, Pacific Gas and Electric Company (PG&E) filed its Gas Transmission and Storage (GT&S) application with the California Public Utilities Commission (CPUC) requesting to increase rates for the following:

- Comply with new regulatory requirements for the safety of gas transmission and storage facilities
- Infrastructure investments to ensure gas transmission pipelines and storage facilities continue to operate safely and reliably
- Retirement of two gas storage fields in order to reduce costs to customers in the long term, reduce risk and streamline operations

Related to the programs above, PG&E is requesting a total increase of $1.317 billion to be collected in rates from customers during the period 2019-2021.

Background

The GT&S Application is submitted approximately every three years by PG&E. The scope of the Application includes gas transmission and gas storage facilities. In this Application, PG&E forecasts the costs necessary to operate gas transmission and storage facilities in a safe and reliable manner. This Application also proposes how the costs to operate PG&E's transmission and storage business will be assigned to each customer class. The Application covers the years 2019-2021, although PG&E has also forecast the costs necessary for 2022 should the CPUC or stakeholders wish to consider extending the case into a fourth year.

How will PG&E's Application affect me?

A summary of the rate impact for PG&E's gas customers was provided in a bill insert sent directly to customers in December. For each year covered in this Application, PG&E is requesting increases of$289 million in 2019, $135 million in 2020 and $180 million in 2021. If approved, this application would increase rates effective beginning January 1, 2019.

Based on rates currently in effect, the bill for a typical residential non CARE customer averaging 34 therms per month of gas usage would increase from $54.85 to $55.96, or 2.0 percent. Actual impacts will vary depending on energy usage across the months.

How will PG&E's Application affect customers who buy gas from a third party?

Certain residential customers only receive gas distribution services from PG&E and purchase their gas from a third party. PG&E does not purchase gas for these customers. The impact of PG&E's Application on the transportation component of the bill is an average increase of $0.65, or 1.6 percent. Transportation components of the customer bill are the same regardless of whether the customer obtains gas service from PG&E or from a third party.

How do I find out more about PG&E's proposals?

If you have questions about PG&E's filing, please contact PG&E at **1-800-743-5000**. For TTY, call **1-800-652-4712**. Para más detalles llame al **1-800-660-6789** • 詳情請致電 **1-800-893-9555.** If you would like a copy of PG&E's filing and exhibits, please write to PG&E at the address below:

Pacific Gas and Electric Company
2019 GT&S Application (A.17-11-009)
P.O. Box 7442
San Francisco, CA 94120

A copy of PG&E's filing and exhibits is also available for review at the CPUC's Central Files Office by appointment only. For more information, contact **aljcentralfilesid@cpuc.ca.gov** or **1-415-703-2045**. PG&E's Application (without exhibits) is available on the CPUC's website at **www.cpuc.ca.gov**.

CPUC process

This Application will be assigned to an Administrative Law Judge (Judge) who will determine how to receive evidence and other related documents necessary for the CPUC to establish a record upon which to base its decision. Evidentiary

hearings may be held where parties will present their testimony and may be subject to cross-examination by other parties. These evidentiary hearings are open to the public, but only those who are formal parties in the case can participate.

After considering all proposals and evidence presented during the hearings, the assigned Judge will issue a proposed decision which may adopt PG&E's proposal, modify it or deny it. Any of the five CPUC Commissioners may sponsor an alternate decision. The proposed decision, and any alternate decisions, will be discussed and voted upon at a scheduled CPUC Voting Meeting.

The Office of Ratepayer Advocates (ORA) may review this Application. ORA is the independent consumer advocate within the CPUC with a legislative mandate to represent investor-owned utility customers to obtain the lowest possible rate for service consistent with reliable and safe service levels. ORA has a multi-disciplinary staff with expertise in economics, finance, accounting and engineering. For more information about ORA, please call **1-415-703-1584**, email **ora@cpuc.ca.gov** or visit ORA's website at **www.ora.ca.gov**.

Stay informed
If you would like to follow this proceeding, or any other issue before the CPUC, you may use the CPUC's free subscription service. Sign up at: **http://subscribecpuc.cpuc.ca.gov/**. If you would like to learn how you can participate in the proceeding, have informal comments about the Application, or have questions about the CPUC processes, you may access the CPUC's Public Advisor Office (PAO) webpage at **http://consumers.cpuc.ca.gov/pao/**.

You may also contact the PAO as follows:
Email: **public.advisor@cpuc.ca.gov**
Mail: CPUC
Public Advisor's Office
505 Van Ness Avenue
San Francisco, CA 94102
Call: **1-866-849-8390** (toll-free) or **1-415-703-2074**
TTY: **1-866-836-7825** (toll-free) or **1-415-703-5282**

If you are writing or emailing the PAO, please include the application number (2019 GT&S Application; A.17 -11-009). All comments will be circulated to the Commissioners, the assigned Judge and appropriate CPUC staff, and will become public record.

SAN FRANCISCO CITY CLERK OF THE BOARD
CITY & CNTY OF SAN FRANCISCO
1 DR CARLTON B GOODLETT PL RM 244SAN
FRANCISCO

From: Board of Supervisors, (BOS)
To: BOS-Supervisors
Subject: FW: The Need For a Beekeeping Ordinance

-----Original Message-----
From: Colin Paul [mailto:colinpaul@yahoo.com]
Sent: Wednesday, November 29, 2017 5:09 PM
To: Morgan, Cree (DPH) <cree.morgan@sfdph.org>; Cushing, Stephanie (DPH) <Stephanie.Cushing@sfdph.org>; Yee, Norman (BOS) <norman.yee@sfgov.org>; Sheehy, Jeff (BOS) <jeff.sheehy@sfgov.org>; Maybaum, Erica (BOS) <erica.maybaum@sfgov.org>; Jones, Justin (BOS) <justin.jones@sfgov.org>; Tang, Katy (BOS) <katy.tang@sfgov.org>; Board of Supervisors, (BOS) <board.of.supervisors@sfgov.org>; andrea@urbanbeeimpact.com; Lee, Mayor (MYR) <mayoredwinlee@sfgov.org>; Jue, Tyrone (MYR) <tyrone.jue@sfgov.org>
Cc: andrea@urbanbeeimpact.com
Subject: The Need For a Beekeeping Ordinance

Hi-

I live in a single family home at 230 Baden Street in the Sunnyside/Glen Park neighborhoods. The skylights and windows of my house, and the windows and paint on my car are constantly covered by bee 'poop' generated by the bees from all the neighborhood bee hobbyists. This material is waxy and does not come off with a standard cleaning. It's marginalizing my views, causing me a lot of extra work to clean and possibly damaging the paint on my house and car. I appreciate the need for honey bees and the good intentions of the hobbyists, but without regulation, they are badly over-running some neighborhoods like ours. I've also heard it's not natural or healthy for bees to live in such densities.

I would greatly appreciate anything you can do to put a bee ordinance in place that limits the density of bees in our city. Thank you for your consideration.

Sincerely,

Colin Paul
230 Baden Street
San Francisco CA 94131
colinpaul@yahoo.com

5

From:	Aaron Goodman <amgodman@yahoo.com>
Sent:	Monday, November 27, 2017 2:51 PM
To:	Ltaravalrapid@sfmta.com
Cc:	CAC; Board of Supervisors, (BOS); MTABoard
Subject:	L Taraval - Should be Extended and Looped out on Sloat back to West Portal
Attachments:	19th_ave_corridor_study.JPG; L_taraval_distance.JPG; focus_at_zoo.JPG

SFMTA (L-Taraval) Rapid and the proper planning for light-rail services on the westside.

The current proposals should be coupled with larger-scaled improvements and connectivity of systems. The proposed platform and parking changes are minimal, and do not indicate a planning effort of adequate size and quality for the west-side growth that is to occur.

The L-Taraval as part of the Ocean Beach Master Plan proposal will extend over Sloat the L-Line. With the ongoing development of sites at the terminus of the L-Line, it makes more sense to connect the L-Line in planning and staging back up Sloat to West Portal and the Stern Grove and Lakeshore Mall areas. The need to ensure adequate secondary systems are in place will allow for transition during track repairs, and continue to serve a growing population and more housing development on the westside.

The track length is about a 1.8 mile extension back up Sloat Blvd. with the Zoo and Ocean Beach also being draws for the use and extension.

The Pomoroy Center, Lake Merced area and Golf Course and rehab, alongside the possiblity of extending it southbound to the westside of Stonestown, Parkmerced and SFSU-CSU to Daly City should be seen as a possible bi-county development and connection to Daly City BART.

To make the initial link across Sloat, means bigger moves are needed. The platforms, and changes proposed are road-diets, but not adequate transit planning and provision for future rail service needs and larger population growth and retail changes occuring in the district.

There is also the opportunity to look at trackless trains, and shuttle bus services to implement a north-south connector up to GG Park so that the Sunset Blvd. and westside great highway areas can better service, and lessen traffic along the great highway coastal zones.

Please look more seriously at these considerations for the general public benefits they would create.

Sincerely

Aaron Goodman D11

(6)

From: David Romano <droma4@gmail.com>
Sent: Monday, December 04, 2017 3:47 PM
To: Board of Supervisors, (BOS); Lee, Mayor (MYR)
Subject: Homelessness and the Opioid Crisis

David J. Romano
759 La Playa Street, #1
San Francisco CA 94121

December 4, 2017

Dear Supervisors and Mayor Lee,

Over the past year I have read a myriad of articles and editorials in the San Francisco Chronicle talking about homelessness and the opioid crisis and one thing is clear: if anyone ever heard the saying, "An ounce of prevention is worth a pound of cure," they're not letting on.

The idea of planning for the future is an afterthought for the politicians and developers who want to build their way out of the "homeless crisis." To say, "we need more houses" is no replacement for saying, "we need to take care of people so that they don't become homeless and/or drug addicts in the first place."

Hubert Humphrey said "the moral test of government is how that government treats those who are in the dawn of life, the children; those who are in the twilight of life, the elderly; those who are in the shadows of life; the sick, the needy and the handicapped." Until this prescription for the general good becomes the policy of our government homelessness and drug addiction will persist.

Money that could have been used to create infrastructure, jobs and a better educated and healthier America went, instead, to the military-industrial complex that Eisenhower warned us against. Hundreds of billions of dollars that should have gone to meet the needs of the American people went down rat holes in Afghanistan and Iraq. In 2016, 57% of the federal budget was spent on the Department of Defense, wars and weapons programs, according to the American Friends Service Committee; 6% was spent on education.

A federal report from 2011 shows $60 billion lost to war zone contractor waste and fraud alone. Disabled and traumatized veterans return home to families broken by the loss and injury of war and don't get the support or treatment they need. Homelessness and opioid addiction is the result. "About 11% of the adult homeless population are veterans. Roughly 45% of all homeless veterans are African American or Hispanic, despite only accounting for 10.4% and 3.4% of the U.S. veteran population, respectively," - National Coalition for Homeless Veterans.

The prison-industrial complex, where corporations run prisons for profit and poor people and people of color are the main "clients" makes it even harder for those on the margins to maintain homes and get jobs. The United States has the highest documented incarceration rate in the world. The self-serving actions of bankers and government officials during the housing crisis complete the picture of the looting of America's tax revenues and the eviction of people from their homes.

7

According to Forbes "The Special Inspector General for the Toxic Assets Recovery Program (TARP) summary of the bailout says that the total commitment of government is $16.8 trillion dollars with $4.6 trillion already paid out." That was in 2016. The banks got the money and have grown even larger but the regular wage earner can't get financing for a home purchase. Could we have had government-backed low interest loans? Of course we could have. With easier credit after 2008, people would be in houses now, not out on the street. The taxpayer's money bailed out the big banks. Nobody could get a home loan while the banks bought back their stock, bought other banks, and bought the houses they foreclosed on. Does anyone think that might have something to do with the current housing crisis?

The federal minimum wage is $7.50 an hour. California's minimum wage is $10.50 an hour. "Experts estimate that still buys only about half of what a minimum wage did in 1980," - San Francisco Chronicle. You can't even pay rent in California with that income.

The leading cause of bankruptcy is medical expenses. Might there be some connection between bankruptcy and homelessness? Single payer universal health care would cost less and provide better care than a system that is drowning in paperwork and regulation. The invasions of Afghanistan and Iraq marked the beginning of the privatization of military services and supplies. The contract to build Guantanamo went to Halliburton (Dick Cheney's old company.) An unintended irony of the so-called war on terror: the inmates of Guantanamo get better medical services than most Americans, as Michael Moore shows in his film, "Sicko."

"U.S. spending on the Afghanistan nation-building project over the last dozen years now exceeds $104 billion, surpassing the $103.4 billion current-dollar value of Marshall Plan expenditures, which helped rebuild European nations after World War II"("U.S. aid to Afghanistan exceeds Marshall Plan in costs" San Francisco Chronicle, August 2014). Imagine if $104 billion had been invested in preschools, education, job training, and social services in the US? Helping individual homeless people is important, but if you really want to change people's lives for the better, take a look at where our tax dollars are going and imagine where they could be going.

David Romano
San Francisco CA

From: Board of Supervisors, (BOS)
Sent: Monday, December 04, 2017 1:02 PM
To: BOS-Supervisors; BOS Legislation, (BOS)
Subject: FW: Please do not approve a marijuana dispensary at Irving and 22nd Avenue

Categories: 171188, 171128

From: Thomas Stark [mailto:tom_s5402001@yahoo.com]
Sent: Monday, December 04, 2017 10:26 AM
To: Board of Supervisors, (BOS) <board.of.supervisors@sfgov.org>
Subject: Please do not approve a marijuana dispensary at Irving and 22nd Avenue

As a life-long, Sunset district resident (St. Gabriel School & St. Ignatius HS) and Holy Name of Jesus Catholic Church parishioner, I am concerned that the Board might approve a marijuana dispensary for our neighborhood. Regardless of the CA state-wide or SF voting to approve sales of this drug, a dispensary would not fit well with the conservative culture of the Outer Sunset and Parkside neighborhoods.
Marijuana is a psychotropic drug that still has not been completely studied and can cause users (especially first-time) to experience disturbing effects. The newer more potent varietals are not like the more mellow *cannabis* sold years ago.
I am afraid that having the dispensary so close to our children will encourage them to experiment with unknown dosages in an unregulated way.

Sincerely,

Thomas A Stark
2335-38th Avenue
SF CA 94116

Mchugh, Eileen (BOS)

From: Board of Supervisors, (BOS)
Sent: Monday, December 04, 2017 12:57 PM
To: BOS-Supervisors; BOS Legislation, (BOS)
Subject: FW: Sunset Res says YES to MCD

Categories: 171188, 171128

From: Sandy Weil [mailto:sweil46117@aol.com]
Sent: Monday, December 04, 2017 11:41 AM
To: Board of Supervisors, (BOS) <board.of.supervisors@sfgov.org>
Subject: Sunset Res says YES to MCD

Please forward to all Board Members.

Dear Supervisor,

I am a resident of the Sunset, 2083 28th Ave for 25 years and a SF native, and I patronize merchants of the Irving St commercial corridor quite often. I am in support of the proposed Barbary Coast MCD at 2161-2165 Irving St, so I respectfully ask that you to deny the appeal before you on Tuesday December 5th. There is currently no MCD on the entire west side of San Francisco, and it is time for our District to do its fair share. Additionally, there are almost a hundred empty storefronts in the Sunset, which means that we do not have the luxury to deny a legal business from opening. It will bring more foot traffic and new customers to the established merchants on Irving St. Finally, we all know that the opposition to legal cannabis businesses is led by out-of-town anti-LGBT hate groups, so we shouldn't, as a City, let them pollute our municipal discourse.

Thank you,

Sandy Weil

BOS-11

From: Chandler, Sara <SChandler@sfwater.org>
Sent: Monday, December 04, 2017 8:41 AM
To: Rosenfield, Ben (CON); Board of Supervisors, (BOS); Calvillo, Angela (BOS); Tugbenyoh, Mawuli (MYR)
Cc: GESSNER, FRANCESCA (CAT); Jacobo, Carlos (PUC); Scarpulla, John (PUC)
Subject: Declaration of Emergency - Tesla Treatment Facility Flywheel UPS
Attachments: Tesla Emergency Declaration_Amended.pdf

Good Morning All,

Please see attached for a **revised** SFPUC Declaration of Emergency for the Tesla Treatment Facility Flywheel UPS.

Please let me know if you have any questions about this Declaration.

Best,
Sara

Sara Chandler
SFPUC - Policy and Government Affairs
schandler@sfwater.org (415) 554-0758

(9)

San Francisco
Water Power Sewer
Operator of the Hetch Hetchy Regional Water System

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.4603
F 415.554.3225
TTY 415.554.3488

INTER-OFFICE MEMORANDUM

December 1, 2017

TO: Ike Kwon, President

FROM: Harlan L. Kelly, Jr., General Manager

SUBJECT: Emergency Declaration Revision
WD-2846 (E) Tesla Treatment Facility Flywheel UPS

In my memorandum to you dated October 17, 2017, I declared an emergency due to the failure of, and need to repair, the Tesla Treatment Facility (TTF) Flywheel Uninterruptible Power Supply (UPS). You provided your written concurrence and approval.

I declared the emergency under Chapter 21, Section 21.15(c) of the San Francisco Administrative Code, which pertains to the emergency procurement of commodities or services. Staff has now learned further information about the scope of the needed repair work and determined that a contractor holding a California Contractors C-10 Electrical License should perform the work. Staff, in consultation with the City Attorney's office, has determined that the emergency repair work meets the definition of a "public work" under Chapter 6 of Administrative Code, and not "services" under Chapter 21. Accordingly, the appropriate authority for an emergency declaration in this case is Administrative Code Chapter 6, Section 6.60(b).

I have determined that the UPS failure constitutes an "actual emergency" under:

- Administrative Code Section 6.60(c) as an unexpected occurrence involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of or damage to life, health, or essential public services; and

- Section 6.60(c)(2)(C) as the breakdown of equipment necessitating immediate emergency repair to maintain the public health.

I am therefore updating the October 17, 2017 declaration of an emergency to reflect these changes – authorization of the declaration under Chapter 6, Section 6.60 (b). I trust that this meets with your concurrence and approval.

CONCUR AND APPROVE:

Ike Kwon – President,
San Francisco Public Utilities Commission

cc: SFPUC Commissioners
Steven R. Ritchie, Asst. General Manager, Water
Clerk of the Board of Supervisors
Ben Rosenfield, Controller
Mayor Ed Lee

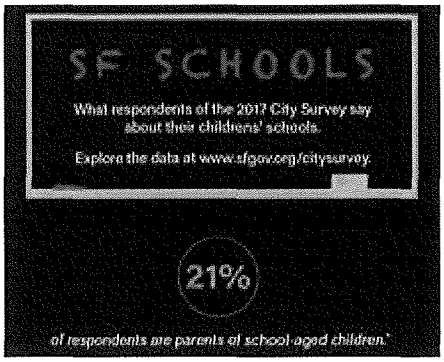
Attachment: October 17, 2017 Emergency Declaration

5)

From: Mchugh, Eileen (BOS)
Sent: Thursday, November 30, 2017 11:25 AM
To: BOS-Supervisors
Subject: FW: Issued: 2017 City Survey Infographic: Schools

From: Reports, Controller (CON)
Sent: Thursday, November 30, 2017 11:22 AM
To: Mchugh, Eileen (BOS) <eileen.e.mchugh@sfgov.org>; BOS-Legislative Aides <bos-legislative_aides@sfgov.org>; Howard, Kate (MYR) <kate.howard@sfgov.org>; Tsang, Francis <francis.tsang@sfgov.org>; Tucker, John (MYR) <john.tucker@sfgov.org>; Hussey, Deirdre (MYR) <deirdre.hussey@sfgov.org>; Canale, Ellen (MYR) <ellen.canale@sfgov.org>; Docs, SF (LIB) <sfdocs@sfpl.org>; CON-EVERYONE <con.everyone@sfgov.org>; gmetcalf@spur.org; thart@sfchamber.com; jballesteros@sanfrancisco.travel
Subject: Issued: 2017 City Survey Infographic: Schools

The Controller's Office is pleased to release the first 2017 City Survey Infographic. Results from the 2017 City Survey show that 21% of respondents report they are parents of school-aged children, which is consistent with prior years. Click the image below to find out more.



Please visit the City Survey website to access the full report, interactive dashboards and a full dataset of survey responses. Infographics on additional topics will be released periodically on the website.

To view the Infographic, please visit http://sfgov.org/citysurvey/2017-city-survey-infographics.

This is a send-only e-mail address.

For questions, please contact citysurvey@sfgov.org.

Follow us on Twitter @SFController.

10

Moving Out

This infographic shows what respondents say of the 2017 City Survey say about their intentions to move out of San Francisco in the next three years. 31% of residents say they are likely to move out of the City: that's nearly one-third. This percentage has remained relatively steady since 2005, hovering between 20% and 33% in that timeframe.

Families

43% of parents with children age 0 - 5 years old say they are likely to move out of San Francisco in the next three years. Parents with kids age 0 - 5 years old say they are likely to move 1.5 times more frequently than parents with kids age 6 - 18 years old.

Race and Ethnicity

The general population of San Francisco is increasing, with minor shifts in the racial makeup from 2010 to 2015, according to the U.S. Census Bureau. While white residents are the least likely to report plans to move in the next three years, they represent a slightly decreasing proportion of the population. The breakdown of what percent of respondents are likely to move out by ethnicity & race and the percentage of the ethnicity & race of the population is as follows: 31% of Asians are likely to move and their percent of the population has increased by 0.2% since 2010; 37% of Hispanics are likely to move and their population proportion has increased by 0.6%; 38% of Blacks are likely to move and their population proportion has decreased by 0.7%; 29% of Whites are likely to move and their population proportion has decreased by 0.8%; and 33% of Other are likely to move and their population proportion has increased by 0.8%. The rise of total population in San Francisco rose from 789,172 in 2010 to 840, 763 in 2015.

Age

Younger residents are the most likely to say they will move from the City. 46% of respondents less than 25 years old reported they are likely to move, while 29% of those 35 to 54 years old and 16% of those older than 54 years old said the same.

For the purposes of this document, the word "likely" refers to those who responded they were either "very likely" or "somewhat likely" to move out of San Francisco in the next three years.

Our data on population is from the U.S. Census Bureau. The following is our citation: U.S. Census Bureau. (2011-2015). San Francisco County, DP05 Demographic and Housing Estimates. 2015 American Community Survey 5-year Estimates.

The infographic was produced the Office of the Controller in the City & County of San Francisco. Learn more about the City Survey at www.sfgov.org/citysurvey.

San Francisco School Ratings

This infographic shows what respondents who are parents of school-aged children say about the schools their kids attend. 21% of all respondents reported they were parents of school-aged children. "School-aged" refers to children aged 6 to 18 years of age.

The average grade that parents gave their children's schools was a B+. Parents with children at public schools gave their public schools a B+ on average, while parents with children at private schools have their private schools an A- on average.

66% of these parent respondents have children who attend public school; 27% have children who attend private school; 7% responded with a situation categorized as "Other." This category encompasses children who are homeschooled or do not attend schools in San Francisco.

There is no significant difference in average school ratings between parents who say they are "Likely" to move out of the City and those who say they are "Not Likely" to do so. 81% of parents reporting they were likely to move rated their children's local schools with an A or B, while 80% of parents reporting they were unlikely to move rated their children's local schools with those grades. Footnote: "Likely" refers to those who responded "Very Likely" or "Somewhat Likely" to move out of the City in the next three years, while "Unlikely" encompasses the "Very Unlikely" and "Somewhat Unlikely" responses.

All results in this infographic are consistent with prior results. The infographic was produced the Office of the Controller in the City & County of San Francisco. Learn more about the City Survey at www.sfgov.org/citysurvey.

From: Tessa D'arcangelew <tdarcangelew@aclunc.org>
Sent: Tuesday, November 28, 2017 4:00 PM
To: Board of Supervisors, (BOS)
Subject: File # 171196 (Budget and Finance Committee, Nov 30, 2017) RE Urban Shield
Attachments: 11.28..2017_Urban Shield_ACLU-NC Letter.pdf

Categories: 171196

Hello,

I write on behalf of the ACLU of Northern California to submit a letter expressing our concerns with San Francisco City and County participation in Urban Shield, which will be discussed at the Budget and Finance Committee on Thursday, November 30th, File #171196.

Kind Regards,
Tessa D'Arcangelew

Tessa D'Arcangelew | ACLU of Northern California
Leadership Development Manager
Tech & Civil Liberties Organizer
39 Drumm Street, San Francisco, CA 94111
tdarcangelew@aclunc.org | 415-293-6355
@Tessassarara | *My gender pronouns are she/her*

TIMOTHY S. LAFFREDI (WI 1055133)
Assistant United States Trustee
MARGARET H. MCGEE (SBN 142722)
Trial Attorney
JARED A. DAY (SBN 275687)
Trial Attorney
United States Department of Justice
Office of the U.S. Trustee
450 Golden Gate Ave., Rm 5-0153
San Francisco, CA 94102
Telephone: (415) 252-2080
Facsimile: (415) 705-3379
E-mail: Maggie.McGee@usdoj.gov

Attorneys for the United States Trustee for Region 17
TRACY HOPE DAVIS

UNITED STATES BANKRUPTCY COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

In re	Case No. 16-31253 HLB
MELINDA BILGERA CORTEZ and ALEX C. CORTEZ,	Chapter 11
Debtors.	Date: January 4, 2018 Time: 10:00 a.m. Ctrm: Honorable Hannah L. Blumenstiel 450 Golden Gate Ave., Ctrm 16 San Francisco, CA

NOTICE OF HEARING ON MOTION OF THE UNITED STATES TRUSTEE, PURSUANT TO 11 U.S.C. § 1112(b) AND FEDERAL RULES OF BANKRUPTCY PROCEDURE 1017(f) AND 9014, TO CONVERT OR DISMISS CHAPTER 11 CASE

PLEASE TAKE NOTICE that a hearing will be held on **January 4, 2018** at **10:00 a.m.**, before the **Honorable Hannah L. Blumenstiel, 450 Golden Gate Avenue, Courtroom 16, San Francisco, California**, on the United States Trustee's Motion To Convert or Dismiss Chapter 11 Case Under 11 U.S.C. § 1112(b) and F.R.B.P. 1017(f) and 9014.

The motion is based upon this notice of hearing, the motion of the United States Trustee, the memorandum in support and declarations filed concurrently herewith, the pleadings, orders, and other documents on file in this case, and upon such evidence as may be presented to the Court at the hearing or in response to any opposition to the motion.

You may obtain a copy of the Motion, the memorandum in support, and accompanying declaration from the Court's docket on the PACER system or by contacting the undersigned.

//

A response, if any, to the motion shall be made in writing and served upon the United States Trustee, and filed with the Bankruptcy Court, at least fourteen (14) days prior to the hearing date pursuant to B.L.R. 9014-1(c)(1). If there is not a timely opposition to the motion, the court may enter an order granting the requested relief by default.

Dated: November 27, 2017

Respectfully Submitted,
TRACY HOPE DAVIS
UNITED STATES TRUSTEE

By: */s/ Timothy S. Laffredi*
TIMOTHY S. LAFFREDI
Assistant United States Trustee
MARGARET H. MCGEE
Trial Attorney for the United States Trustee
JARED A. DAY
Trial Attorney for the United States Trustee

BOS-11
LV Cleek

CITY AND COUNTY OF SAN FRANCISCO
POLICE DEPARTMENT
HEADQUARTERS
1245 3RD Street
San Francisco, California 94158

EDWIN M. LEE
MAYOR

WILLIAM SCOTT
CHIEF OF POLICE

RECEIVED
BOARD OF SUPERVISORS
SAN FRANCISCO
2017 DEC -5 AM 9:13

November 28, 2017

Ms. Angela Calvillo
Clerk of the Board of Supervisors
City Hall, Room 244
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4694

Dear Ms. Calvillo:

RE: File No. 171018 – Street Name Change – Odd Fellows Way

The San Francisco Police Department has no concerns regarding the recognition to the historical significance of the architectural and cultural contributions to the street name "Odd Fellows Way" to the 600 block of Stevenson Street. If I can be of further assistance, please contact my office.

Sincerely,

William Scott
WILLIAM SCOTT
Chief of Police

/kd

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

CleanPowerSF
Same Service • Cleaner Energy

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.0773
cleanpowersf@sfwater.org

MEMORANDUM

DATE: November 22, 2017

TO: Clerk of the Board of Supervisors

THROUGH: Harlan L. Kelly, Jr., General Manager

FROM: Barbara Hale, Assistant General Manager, Power
Michael Hyams, Director, CleanPowerSF

SUBJECT: Fiscal Year 2016-17 Report on the CleanPowerSF Program Pursuant to Ordinance 223-15

Pursuant to Ordinance 223-15, the SFPUC hereby provides the following report to you on the CleanPowerSF program. Ordinance 223-15 requires the SFPUC to submit annual reports to the Board of Supervisors, detailing "program costs, the rates charged by the SFPUC to CleanPowerSF customers to recover the costs, and a comparison of those CleanPowerSF rates to PG&E rates."

This report addresses the information requested in Ordinance 223-15 and provides an update on the status of program enrollment.

Program Background and Update

CleanPowerSF is San Francisco's Community Choice Aggregation (CCA) program. Authorized under State law, the CCA program allows cities and counties to partner with their investor-owned utility (PG&E in San Francisco) to deliver cleaner energy to residents and businesses.

Under CleanPowerSF, PG&E continues to maintain the power grid, respond to outages and collect payment. CleanPowerSF replaces the generation component on participating customers' PG&E energy bills with a new charge for the cleaner electricity supply provided by CleanPowerSF.

Today, CleanPowerSF offers San Franciscans with two options for their electricity supply:

- *Green:* The *Green* Product is CleanPowerSF's default electricity supply offering and features 40% renewable energy and prices that are

competitive with PG&E's standard electricity offering (33% renewable in 2016).

- *SuperGreen:* The *SuperGreen* Product is CleanPowerSF's voluntary 100% renewable energy option. Any electricity customer in San Francisco can "opt-up" to *SuperGreen* service for a small premium per kilowatt-hour consumed (premiums are currently 2 cents per kWh for residential customers, amounting to about $6 of additional charges on an average San Francisco residential customer's bill each month).

The San Francisco Public Utilities Commission initiated its first phase of CleanPowerSF service to customers in San Francisco in May 2016. CleanPowerSF's Phase 1 service included an initial enrollment of approximately 7,800 accounts, including customers who had signed up for the program and commercial customers in Supervisory Districts 5, 8 and 10. A subsequent enrollment in November 2016 included approximately 72,000 accounts, which included additional sign-ups and residential customers in Districts 5 and 8. Between November 2016 and the end of FY 2016-17 (June 30, 2017), CleanPowerSF enrolled an additional 2,000 customers that either signed up for the program or are Net Energy Metering customers in Districts 5 and 8.

CleanPowerSF completed its first full fiscal year of operations on June 30th 2017 (FY 2016-17). Statistics summarizing customer enrollment and opt-out as of the end of FY 2016-17 are summarized in Table 1 below.

Table 1: Summary of Program Enrollment Statistics (as of June 30, 2017)

Category	Number of Accounts
Total Enrolled	81,505
Enrolled – Inactive[1]	3,011
Opted-Out	2,695
Enrolled – Active	75,799
Green – 40% Renewable	73,195
SuperGreen – 100% Renewable	2,604

As of the end of FY 2016-17, the CleanPowerSF program has enrolled approximately 21% of the potential CleanPowerSF accounts within the City and County of San Francisco. On May 9, 2017 the PUC set a goal of completing citywide enrollment in the CleanPowerSF program by July 2019 or sooner if possible.

[1] "Inactive" refers to a physical service location that was enrolled by CleanPowerSF but at the time of the report was not occupied or did not have an active PG&E electric service account.

Our CleanPowerSF team has been working to procure the electric power needed to complete citywide enrollment and anticipates conducting a second large phase (about 150,000 accounts) in July 2018. A final large enrollment phase (about 160,000 accounts) is expected no later than July 2019.

Annual Program Costs

As noted above, CleanPowerSF completed its first full fiscal year of operations on June 30th 2017 (FY 2016-17). On November 8, 2017, the PUC published its audited Fiscal Year 2016-17 financial reports, which for the first time included the CleanPowerSF program as a fund of the Hetch Hetchy Enterprise.[2] A summary of CleanPowerSF revenues and expenses for FY 2015-16 and FY 2016-17 is provided in Table 2 below.

Table 2: Summary of CleanPowerSF Revenues and Expenses

Item	FY 2015-16 ($, In Thousands)	FY 2016-17 ($, In Thousands)
Operating Revenues	3,749	33,867
Non-Operating Revenues	24	23
Operating Expenses	(2,349)	(27,096)
Change in Net Position	1,424	6,794
Net Position at Beginning of Year	0	1,424
Net Position at End of Year	1,424	8,218

CleanPowerSF Rates and Comparison to PG&E Rates

Ordinance 223-15 also required the PUC to report on CleanPowerSF's rates and how those rates compare with PG&E's generation rates. Adopted CleanPowerSF rates tables have been provided as attachments to this memo for your reference.

In addition, pursuant to Senate Bill 790 (Leno) and California Public Utilities Commission Decision 12-12-036, each year CleanPowerSF and PG&E publish a joint rate comparison. A "Joint Rate Mailer" is sent each year to all enrolled CleanPowerSF customers and joint rate comparisons for each customer type served by CleanPowerSF are published on CleanPowerSF's and PG&E's websites. The Joint Rate Mailers sent to CleanPowerSF customers are also attached to this memo for your review and reference.

[2] The Hetch Hetchy Water and Power and CleanPowerSF Report for FY 16-17 may be found at: http://www.sfwater.org/modules/showdocument.aspx?documentid=11456

Table 3 below shows the joint rate comparison published and mailed to CleanPowerSF residential customers on the standard E-1 rate schedule in July 2016. The comparison shows that CleanPowerSF offered residential customers a competitively priced product with more renewable energy than PG&E's default product.

Table 3: Residential (E-1) Joint Rate Comparison (as of July 1, 2016)[3]

E-1 (Residential Flat Rate)	PG&E Default Product (33% Renewable)	PG&E SolarChoice (100% Renewable)	CleanPowerSF *Green* (40% Renewable)	CleanPowerSF *SuperGreen* (100% Renewable)
Generation Rate ($/kWh)	$0.09684	$0.10942	$0.07267	$0.09267
PG&E Delivery Rate ($/kWh)	$0.12499	$0.12499	$0.12499	$0.12499
PG&E PCIA/FF ($/kWh)	N/A	$0.02323	$0.02385	$0.02385
Total Electricity Cost ($/kWh)	$0.22183	$0.25764	$0.22151	$0.24151
Average Monthly Bill ($)	$64.44	$74.85	$64.35	$70.16

This table compares electricity costs for a typical residential customer in the CleanPowerSF/PG&E service area with an average monthly usage of 291 kilowatt-hours (kWh). The Average Monthly Bill amounts are based on the most recent 12-month billing history for all customers on E-1 rate schedules for PG&E's and CPSF's published rates as of May 1, 2016 and in effect on July 1, 2016.

The table shows that CleanPowerSF Green rates were significantly lower than PG&E's ($0.07267 per kilowatt-hour CleanPowerSF as compared to $0.09684 per kilowatt-hour for PG&E). The lower CleanPowerSF rates helped absorb the Power Charge Indifference Adjustment (PCIA) fee that CleanPowerSF and other CCA customers are required to pay PG&E for the "above market" costs of its electricity supply. As illustrated by this rate comparison, after accounting for the PCIA and other fees PG&E charges CCA customers, the net cost to the average residential customer in San Francisco taking CleanPowerSF Green service was slightly below the cost of PG&E's Default Product. In addition, the cost of taking service under CleanPowerSF's SuperGreen 100% renewable product was $4.69 per month less than the cost of PG&E's Solar Choice (100% renewable).

Attachments

A. CleanPowerSF Growth Plan (May 2017)
B. Hetch Hetchy Water and Power and CleanPowerSF Financial Statements for the Years Ended June 30, 2017 and 2016
C. CleanPowerSF Rate Tables for Rates Effective May 1, 2016 and July 1, 2017
D. CleanPowerSF-PG&E Joint Rate Comparisons for 2016 and 2017

[3] Table 3 has been updated from what was originally published and mailed to customers to reflect the actual final renewable energy content in 2016 for PG&E's Default Product and CleanPowerSF's Green Product. The original Joint Rate Mailer estimated the renewable content of PG&E's Default Product to be 30% and CleanPowerSF's Green Product to be 35%; the products turned out to be 33% and 40% renewable, respectively.

CleanPowerSF

Same Service • Cleaner Energy

CleanPowerSF Growth Plan

May 2017 | Final Report

San Francisco Water Power Sewer

CleanPowerSF
Same Service • Cleaner Energy

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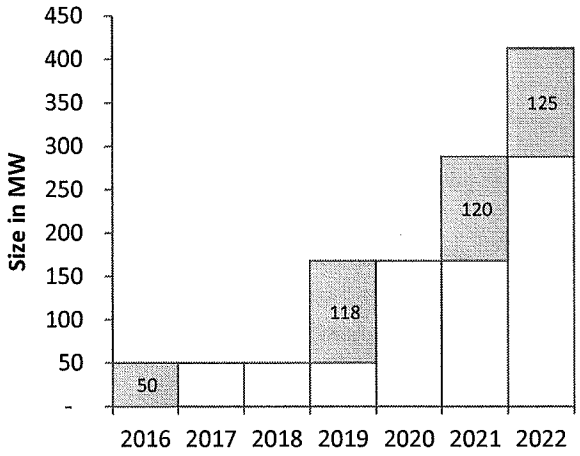
Acronyms and Abbreivations

CARB	California Air Resources Board
CARE	California Alternate Rates for Energy
CalCCA	California Community Choice Association
CEC	California Energy Commission
CAISO	California Independent System Operator
CPUC	California Public Utilities Commission
CCA	Community Choice Aggregation
CRM	Customer Relationship Management
DA	Direct Access
ERRA	Energy Resource Recovery Account
ESP	Energy Service Provider
FFS	Franchise Fee Surcharge
FTE	Full Time Equivalent
GW	Gigawatt
GRC	General Rate Case
GHG	Greenhouse Gas
IRP	Integrated Resource Plan
ITC	Investment Tax Credit
IOU	Investor-owned Utility
KWh	Kilowatt Hour
LSE	Load Serving Entity
MCE	Marin Clean Energy
MW	Megawatt
MWh	Megawatt Hour
MDMS	Meter Data Management System
NEM	Net Energy Metering
PG&E	Pacific Gas and Electric
PCIA	Power Charge Indifference Adjustment
PPA	Power Purchase Agreement
PCC 1	Product Content Category 1
PCC 2	Product Content Category 2
PCC 3	Product Content Category 3
PGC	Public Goods Charge
REC	Renewable Energy Credit
RPS	Renewable Portfolio Standard
RFO	Request for Offers
RFP	Request for Proposals
RA	Resource Adequacy
SFPUC	San Francisco Public Utilities Commission
SCP	Sonoma Clean Power

1.0 Introduction: Growth Plan Purpose and Approach

In December 2015, the San Francisco Public Utilities Commission (SFPUC) Power Enterprise staff presented a Business Plan for the launch of CleanPowerSF. The 2015 Business Plan laid out the initial schedule (Figure 1) for growing CleanPowerSF beyond 2016's planned Phase I launch of 50 MW[1], showing CleanPowerSF growing in 100-125 MW blocks of average electricity demand until reaching full service of approximately 350,000 customers and 413 MW of average demand in 2022 (assuming a 20% opt-out rate).[2]

Figure 1: Business Plan Growth Projection (Average Demand in MW)



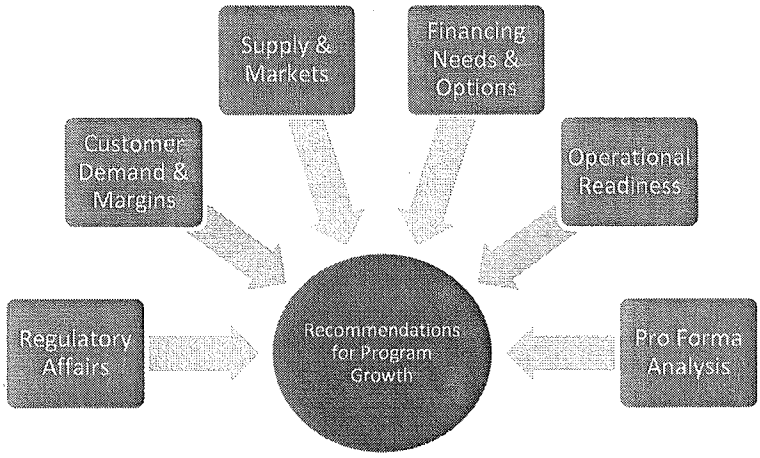
Guided by the Commission-adopted program goals[3] and Business Practice Policies (included as Appendix A-1), CleanPowerSF launched service to approximately 7,800 customers in May 2016. A second large auto-enrollment was conducted in November 2016, bringing the total Phase 1 *active* enrolled customers to approximately 75,000. In this time the program has maintained an opt-out rate of about 3.2%, and has attracted approximately 1,700 pre-enrollments and 2,350 upgrades to 100% renewable *SuperGreen* service.

With the launch of Phase I completed in November, and in response to Commission and stakeholder interest, SFPUC staff has turned its focus on planning for program growth to citywide service. ***The purpose of this Growth Plan is to determine the best options – consistent with program goals – for expediting the expansion of CleanPowerSF service throughout the City and County of San Francisco.***

[1] The Business Plan projected an average program annual demand after opt-out of 50 MW in 2016, but the popularity of CleanPowerSF led to unexpectedly low opt-out rates, resulting in an average demand of 60 MW.
[2] The 2015 Business Plan assumed a 20% opt-out citywide, which is higher than current expectations.
[3] CleanPowerSF goals are: 1) Provide affordable and reliable service; 2) Develop an electricity portfolio that offers San Franciscans cleaner energy alternatives; 3) Invest revenues in new local renewable projects and jobs when feasible and cost-effective; and 4) Provide for long-term rate and financial stability.

Over the past several months, CleanPowerSF staff, supported by consultants and personnel across the SFPUC, has conducted research and analysis to determine the feasibility and best approach to program expansion. This work was divided up across a number of subject areas identified in Figure 2 below.

Figure 2: Growth Plan Approach



To complete this work, CleanPowerSF staff:

- Reviewed CCA regulatory compliance and reporting obligations;
- Analyzed electricity usage and customers in the City to better understand the economics of providing service;
- Analyzed electricity market price trends and the availability and pricing of renewable energy;
- Interviewed a number of power suppliers to better understand their interest in supplying the program, their company's approach to credit and what kinds of projects they had in their development pipeline;
- Interviewed financial institutions to understand their interest in providing financial services to CleanPowerSF and CCAs generally;
- Assessed the requirements to become operationally ready to serve more than 300,000 accounts;
- Examined the organizational structure and staffing of other operating CCAs, including functions they have prioritized for internal staffing versus functions they outsource;
- Worked internally across the SFPUC to understand program scaling requirements and timelines for developing new systems to support greater operational independence; and
- Conducted analyses to understand the total financial requirements, risks and feasibility of growth.

What follows in the sections below are staff's recommendations for expanding CleanPowerSF service citywide and detail regarding the findings of this research and analysis. A timeline for implementing program expansion is provided at the end of this report.

2.0 Recommendations

CleanPowerSF staff has developed the following recommendations on growth pace, processes, staffing and policies.

2.1 Complete Citywide Enrollment by the End of Fiscal Year 2018-2019

Enrolling all of the remaining electricity customers in San Francisco represents a significant jump in the number of accounts and energy demand to be served by CleanPowerSF (see Figures 3 and 4 below). Citywide expansion will take the program from 75,000 accounts today to approximately 350,000 accounts at full scale (more than 4.5 times the number currently served, assuming a future opt-out rate of about 10%). It will also increase program revenues from approximately $38 million per year today to $260 million per year at full scale (more than 6 times the amount of energy currently served).

Figure 3: Customer Count Phase 1 to Citywide

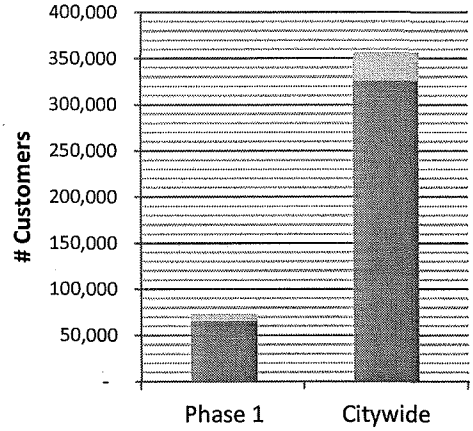
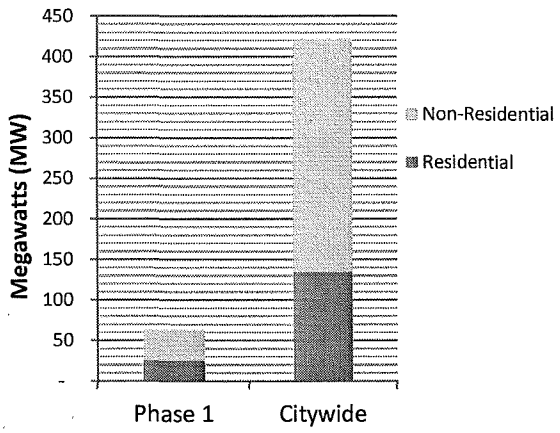


Figure 4: Program Energy Demand Phase 1 to Citywide



Staff recommends completing citywide enrollment within two years, by the end of FY 2018-2019, with the next major auto-enrollment phase to occur in May 2018. Staff has determined that May is a good month for conducting auto-enrollment because residential customers' electricity and natural gas usage is lower during this time of year, making it less likely residential customers will mistake higher PG&E energy bills with CleanPowerSF enrollment. The exact timeline for achieving full enrollment will depend on the results of staff's efforts to secure financing, additional power supplies and the ability to meet program phasing policy criteria (such as meeting or beating PG&E rates).

Just as when CleanPowerSF launched in 2016, some of these elements can only be determined after receiving bids for power supply (See Recommendation 2.3 below). Additionally, it is important to have as much certainty as possible regarding what PG&E rates will be for the enrollment period, especially the Power Charge Indifference Adjustment (PCIA). The PCIA is reset on January 1st each year, so it is prudent to conduct auto-enrollments with large numbers of customers after this date.

Staff therefore believes that two years is a reasonable amount of time to conduct the necessary procurement to serve citywide demand and acquire the staffing, consulting and other operating resources necessary to successfully execute citywide service. This timeframe will provide CleanPowerSF with some flexibility to manage power market price and supply risk[4], and the lead time needed to add staff and other resources to support growing operations.

The proposed two-year timeline is notably faster than the timeline presented in the 2015 Business Plan, which projected completion of citywide auto-enrollment in 2022. Since CleanPowerSF is operating – and growing – in a dynamic environment (including changing market conditions and regulatory requirements), it is important that the SFPUC remain flexible in how it approaches program expansion. As a risk management measure, the SFPUC should be willing to slow things down if market or regulatory conditions do not warrant expansion; similarly, the SFPUC should consider speeding up expansion if opportunities arise.

Photo 1: Shiloh Wind Farm (primary source for *SuperGreen* product)

[4] For example, by spreading the increments of power purchased to serve the entire city over a couple of years, the program may be able to reduce the likelihood of short-term supply scarcity driving up power supply costs.

2.2 Issue a Request for Proposals to Acquire Third Party Financing Support

Significant additional financial resources will be required to grow the CleanPowerSF program citywide. Staff estimates that at full-scale, the credit requirements associated with program power supply could be upwards of $60 million and fully funding the reserves (Operating Fund and Rate Stabilization Fund) will require as much as $80 million by 2021.

CleanPowerSF has been established as a financially separate entity within the SFPUC to provide financial transparency to program stakeholders, suppliers, and the financial community and to protect the Power Enterprise from undue financial risk.

To support the financial requirements of program growth, staff proposes to issue a Request for Proposals (RFP) for third party financial services by July 2017. A key purpose of this financial support will be to secure CleanPowerSF's power purchase transactions. These services may include a variety of financial instruments such as revolving letters of credit for power supply, or a term loan for working capital. Staff plans to approach acquiring financial services in a manner that avoids any additional financial support from the Power Enterprise.

2.3 Issue a Request for Offers for Power Supply to Serve the Program at Full Scale

The ability to offer CleanPowerSF service citywide – on any timeline – will depend on the availability of cost-effective supplies of electricity that meet program goals. As a result, to support program service expansion citywide, CleanPowerSF staff proposes to issue a Request for Offers (RFO) for power supplies by July 2017.

The proposed RFO will seek bids to serve the program's projected demand at full scale. This will allow staff to determine whether there is sufficient power supply at cost effective prices to expand and how quickly service expansion can be completed. The solicitation will also seek bids from both operating and new, or to-be-constructed, renewable energy plants. Ultimately, a goal of the program is to develop new renewable energy resources. If the solicitation returns insufficient renewable energy from operating projects, the program can focus on developing new projects to meet customer demand. Future customer enrollments can then be synchronized with the dates that new renewable energy resources come on-line.

Based on research and discussions with suppliers and project developers, staff believes that it is possible to acquire the energy needed to significantly expand CleanPowerSF service next year. However, the exact scale of growth will be dependent on the amount of *cost-effective* renewable and GHG-free energy available in the market in the next 12-36 months. Due to the significant volume of renewable energy that CleanPowerSF will be seeking to acquire, staff believes that it is prudent to see what the renewable energy market can provide in the near-term before committing to a specific enrollment schedule.

Photo 2: CleanPowerSF Signs First Power Supply Contracts

2.4 Adopt a Goal of 50% Renewable Energy for the Default *Green* Product by 2020

In December 2015, the Commission adopted a Portfolio Content Policy for the CleanPowerSF program establishing a goal of providing 35% renewable energy content for the default *Green* product of at program launch. CleanPowerSF exceeded that goal in 2016 by delivering 40% renewable energy in its *Green* product. Increasing San Francisco's reliance on renewable energy, and eliminating greenhouse gas emissions from the electricity supply serving San Francisco by 2030, is a City goal, and a goal of the CleanPowerSF program.[5] Moreover, increasing the program's renewable energy content, while remaining competitively priced, is central to the program's value proposition to customers.

To provide CleanPowerSF program with a portfolio content target that helps it maintain its competitive position and provide value to San Francisco, staff recommends the SFPUC adopt a goal for the *Green* product of 50% renewable energy content by 2020. Research conducted during this growth planning process points to the likely availability of renewable energy supply in California to support this objective, if action is taken immediately to begin engaging with the renewable energy suppliers.

[5] Board of Supervisors, "Greenhouse Gas Emissions Reduction" Resolution (158-02) and Ordinance 8108, San Francisco Environmental Code § 902

In addition to helping the City combat climate change, meeting the program's renewable energy goal will be the major driver of new clean energy job creation. Sourcing more renewable energy within California will create jobs in the construction and operation of renewable power plants. Staff has estimated 1,300 to 5,000 jobs may be created over the next 4 to 5 years to support CleanPowerSF's achievement of the proposed 50% by 2020 renewable energy goal.[6] The ultimate number of jobs created will depend on the amount of energy sourced from new versus operating renewable energy plants.

2.5 Staff Up to Run the Program Successfully, Adding Staff to Core Functions Immediately

Finally, to support all of the operating and customer service needs of the program, CleanPowerSF will need to staff up. Citywide service will significantly increase CleanPowerSF's power supply requirements, and adding staff resources to procure and manage those contracts will be critical to success.

In the near-term, staff proposes focusing hiring on functions that are most immediately critical to the success of the program:

- Energy Supply Portfolio Management
- Power Settlements
- Risk Management
- Regulatory and Legislative Affairs
- Account Management
- Customer Service

Staff has identified 14.5 full time equivalent (FTE) positions are needed immediately to support additional customer enrollment in May 2018. The addition of these positions would bring total CleanPowerSF-funded staff to 30 FTEs. Professional services contractors will also be needed to fill gaps in the near and medium-term.

Under this plan additional staff would be onboarded over the balance of the enrollment period, bringing CleanPowerSF funded positions to an estimated 50-55 FTEs. This staffing projection is consistent with MCE, the most mature CCA program operating in California, which has about 40-45 FTEs, and whose program sales are a bit lower than what is expected for CleanPowerSF at full scale.

2.6 Work with Stakeholders to Develop Initiatives that Support Low Income Participation

The CleanPowerSF program endeavors to offer cleaner electricity at stable rates that are affordable and competitive with PG&E's electricity rates for comparable service. Additionally, CleanPowerSF is

[6] This projection assumes 20-80% of CleanPowerSF's renewable energy is sourced from newly constructed renewable plants.

committed to ensuring that all members of the community, regardless of income, have the opportunity to participate and receive the benefits of cleaner electricity service.

There are a number of options available to the City and the SFPUC to facilitate program participation from low-income members of the community. Examples include, but are not limited to:

(1) prioritizing rate stabilization funds for qualifying low-income customers;

(2) allowing CleanPowerSF customers or private companies doing business with the SFPUC, as part of a community benefits package, to donate to an "angel fund" to help low-income customers receive cleaner energy with either CleanPowerSF's *Green* or *SuperGreen* service; and

(3) providing targeted energy efficiency services to low-income customers to help them reduce their overall energy bills, making it easier for them to participate in CleanPowerSF.

Staff recommends working with stakeholders to identify and develop new initiatives that support low-income participation in the CleanPowerSF program. Staff recommends this work be undertaken in FY 2017-2018 so that new programming and policies can be available by the time CleanPowerSF completes citywide enrollment.

Photo 3: CleanPowerSF Net Energy Metering (NEM) Community Workshop

3.0 Detailed Findings

The findings that led to these recommendations are detailed below, organized by research and analysis conducted in the following areas:

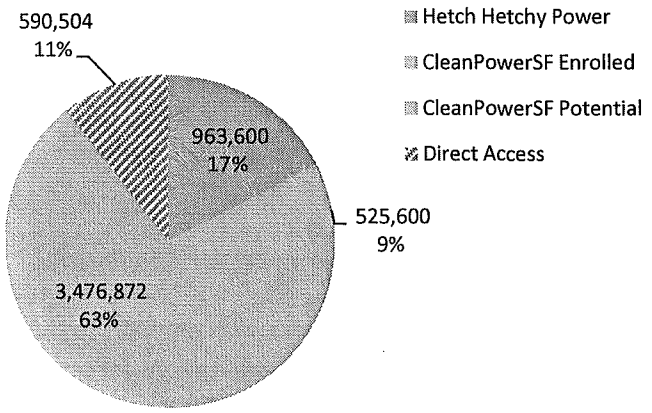
- **Customer Makeup & Demand**
- **Power Supply & Markets**
- **Financing Needs & Options**
- **Operational Readiness**
- **Regulatory and Legislative Affairs**
- **Pro Forma Financial Analysis**

3.1 Customer Makeup and Demand

For the purpose of planning program growth and configuring enrollment phases, it is critical to understand the potential energy demand and characteristics of the full potential customer base to be enrolled. Electricity usage in San Francisco varies by customers class, as do the rates PG&E charges for generation service. This is important because the cost to serve different customer classes varies, as does the revenue potential for CleanPowerSF, given the goal of offering affordable and competitive rates compared to PG&E.

Figure 5 shows San Francisco's total electricity consumption of more than 5 million megawatt-hours (MWh) annually.

Figure 5: Average MWh Usage (MWh, %)



For purposes of this plan, CleanPowerSF's total potential customer base is the sum of the customers currently enrolled (shown in the bright green pie slice), and customers currently purchasing power generation through PG&E's bundled service (shown in the grey pie slice). Together, these slices total approximately 4 million MWh annually – or about 460 MW of average demand (i.e., before opt-out is calculated for future enrollment). Customers already served by the SFPUC's Hetch Hetchy power are public power customers and are not eligible for CleanPowerSF enrollment. Direct Access (DA) customers are eligible for CleanPowerSF, by

statute, but auto-enrolling may not be the best strategy to attain them. DA customers receive service under contract with third party Energy Service Providers (ESPs). Auto-enrolling these customers could break their ESP supply contracts and may imperil their ability to return to DA service, participation in which is capped and currently has a waiting list for new participants. The CleanPowerSF team is proposing that DA customers be enrolled only at a customer's request or otherwise held out of the program's auto-enrollment plans until all other eligible customers have been enrolled.

3.1.1 CleanPowerSF Potential Customer Overview

As shown in Figures 6 and 7 below, 91% of the City's eligible CleanPowerSF accounts are residential (green slices of the pie), but these accounts represent only 31% of the total citywide energy usage. In contrast, commercial and industrial customers represent 9% of all accounts, but make up 68% of the total CleanPowerSF potential energy demand.

Figure 6: Electricity Accounts

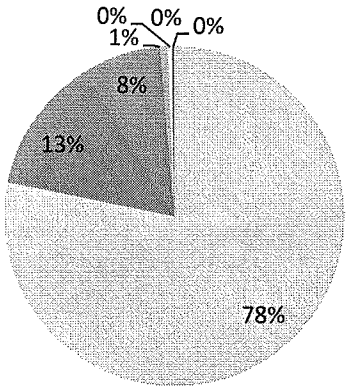
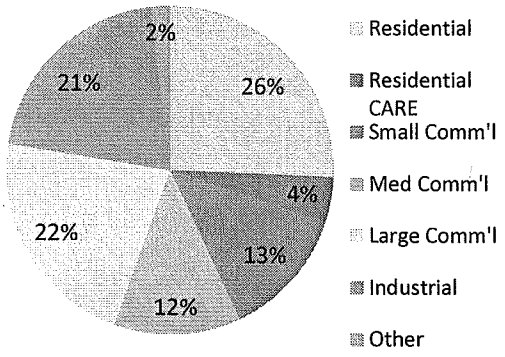


Figure 7: Electricity Usage

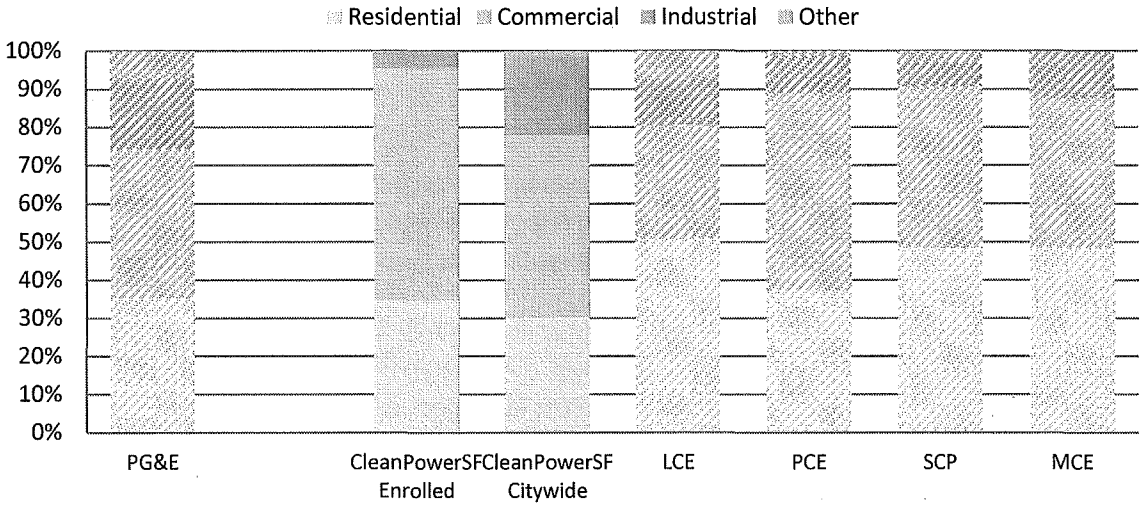


3.1.2 Comparing Customer Makeup with other Load Serving Entities

Identifying how the CleanPowerSF potential customer mix compares to the makeup of other load serving entities (LSEs) is helpful in understanding the implications for program design and financial performance of adding more customers and potentially changing the customer class composition of the program.

Figure 8 below shows that CleanPowerSF's citywide potential customer composition and energy sales vary somewhat from other entities in that its customer base is less residential and has a higher percentage of commercial and industrial usage. CleanPowerSF's citywide potential energy sales vary slightly from CleanPowerSF current enrollment in that it is slightly less residential, and significantly more industrial.

Figure 8: Customer Class Distribution by Load Serving Entity



Under state law, a CCA must offer service to all residential customers in its service territory. Figures 9 and 10 below show that CleanPowerSF is expecting an average annual use per residential account of just over 3,700 kWh in Phase 1 and 3,500 kWh once citywide residential enrollment is complete. On average, San Francisco residents use 35-55% less electricity than the residential customers of the other operating CCAs, which feature average per-household consumption of 5,300 to 7,900 kWh per year.

Figure 9: Energy Usage Per Account: Residential Customers

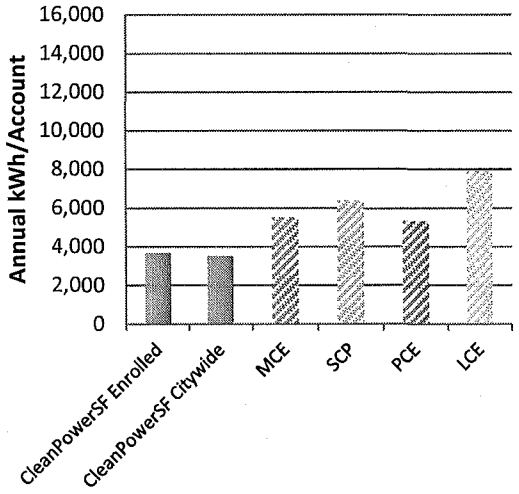
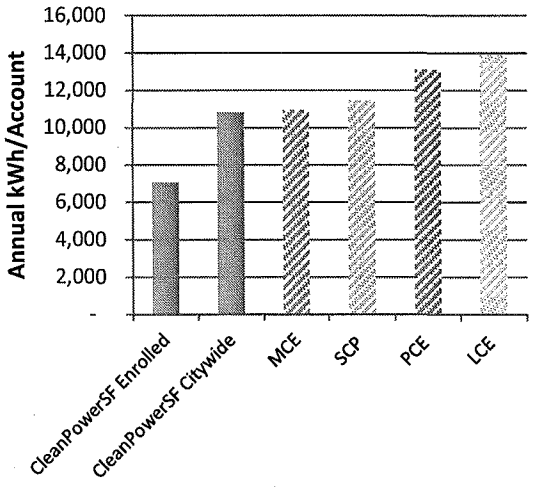


Figure 10: Energy Usage Per Account: All Customers



While this is great news from an environmental sustainability perspective, it makes fixed costs a higher portion of the per kilowatt-hour revenues, diminishing net revenue available for other

purposes (e.g., reserves, build-out, etc.). This is an important takeaway since non-residential enrollment is optional – but this analysis shows that it is desirable. The counterpoint to this takeaway is that non-residential customers carry with them more sales when they opt-out of the program, which can impose greater risk of revenue loss.

3.1.3 Customer Rate Analysis

By analyzing data on the number of accounts, average per-account energy use by customer class, and PG&E generation rates for CCA-eligible San Francisco electricity customers, staff evaluated the financial impacts to CleanPowerSF of enrolling different customer types.

Figure 11 below shows a high-level comparative analysis conducted using the CleanPowerSF Phase 1 average *Green* Product rates by rate class. Each bar in the chart represents the average generation rate to a CleanPowerSF customer in the identified customer class (using rates in place at the time of program launch on May 1, 2016). The first bar represents the average rate to all customers currently served by CleanPowerSF. The variation across the classes seen below can be explained by (1) variation in PG&E's PCIA charges across rate classes, (2) variation in rates by customer class, and (3) variation in costs by rate class due to fixed per-account costs. The PCIA is included to show the total generation rate as seen by the customer.

Figure 11: Average *Green* Product Rate to Customer by Rate Class

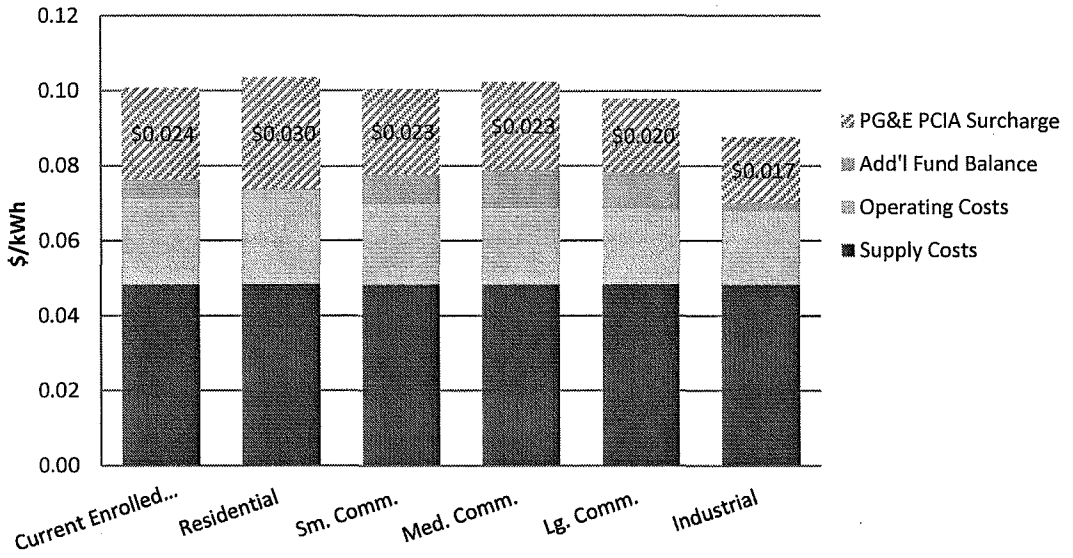


Figure 11 indicates that there are financial benefits to mixing residential enrollment with customer classes from which higher per kilowatt-hour revenues are expected– specifically, small and medium commercial and to some degree large commercial classes. The above also suggests that no single customer class poses a critical financial risk; rates recover costs for all classes.

However, this could change in the future if CleanPowerSF must lower its generation rates to remain competitive.

3.1.4 Customer Considerations for Program Outreach and Communications

As CleanPowerSF plans future auto-enrollments, it will also be critical to consider how the program will communicate with customers and whether outreach efficiencies might be gained. From the perspective of communications and enrollment management:

- **Organizing phases by geography rather than by customer class allows for more efficient outreach.** Combining residential and non-residential rollout in a District where possible maximizes the value of advertisements/canvassing and simplify communications and mailing efforts.
- **Territories in which residents and businesses express the most favorable outlook on CCA service and clean energy should be prioritized for auto-enrollment phases.** This guidance was considered in the selection of geographic areas to be included in Phase 1, and Phase 1 has achieved a lower-than-expected opt-out rate.
- **Readiness to communicate in key languages may be a reason to advance or hold off on enrolling a certain territory.** CleanPowerSF is currently staffed for Spanish-speaking outreach, but will need new staff resources for Chinese-speaking outreach to serve Chinatown in District 3, and Districts 1 and 4.
- **CleanPowerSF should consider direct outreach to the largest customers.** Large accounts are unique; they require additional account management services, have a greater impact on energy supply procurement planning, and may benefit from their own enrollment schedule. Due to their large energy usage, these accounts pose the greatest opt-out risk to the program. As CleanPowerSF prepares for additional phases, staff recommends delaying the auto-enrollment of the largest customers until staff canconduct separate outreach to better understand their interest and likelihood to stay in the program.

3.1.5 California Alternate Rates for Energy (CARE) Customers

Approximately 13% of San Francisco's electricity accounts are enrolled in the California Alternate Rates for Energy (CARE) program. The CARE program offers discounted electricity service to qualifying residential and commercial customers.[7] Customers enrolled in CleanPowerSF continue to receive the same discount as PG&E bundled customers because it is applied to the distribution portion of the electric bill.

Managing year-over-year changes in PG&E's CCA exit fee (the Power Charge Indifference Adjustment, or PCIA) can make it challenging to ensure that CARE customers pay no more for service with CleanPowerSF than they would with PG&E. For example, on January 1, 2017, PG&E increased the PCIA it charges to customers by 25% for residential customers (increasing the per-

[7] For more information on the CARE program, see: http://www.cpuc.ca.gov/esap/

kilowatt hour rate from 2.4 cents to 3 cents). Even though CleanPowerSF's rate did not change over this time period, the increase in PG&E's PCIA meant CleanPowerSF customers were paying about 2% more on their total bills.[8] If CleanPowerSF were serving all CARE customers and wanted to reduce rates to prevent CleanPowerSF service from costing more than PG&E bundled service, it would have cost the program approximately $1 million per year to do so (assuming no further change).

To protect CARE customers from increased costs associated with PCIA increases mid-rate cycle, the SFPUC can prioritize the use of its rate stabilization funds for CARE customers. The SFPUC can also develop angel funds or other mechanisms that allow non-CARE customers in San Francisco to contribute through an on-bill mechanism toward additional rate protection or discounts.

Customer Makeup and Demand Findings

- ✓ **A diverse customer mix is important:** While costs and revenues vary across customer classes, no customer class is expected to be uneconomic to serve at today's rates and operating costs. Enrollment of commercial customers will help balance the narrower margins (and higher per account fixed costs) expected of residential customers.
- ✓ **Enrolling CARE customers may require additional rate protections:** Prioritizing the protection of CARE customers requires financial reserves – which may be reason to allow time for reserve fund building and planning prior to auto-enrollment of CARE customers.
- ✓ **Geographic enrollment can provide communications efficiencies and support customer class diversity:** Enrollment of customers by Supervisory District, rather than by rate class, will provide outreach/communications efficiencies and will also help to balance revenues by enrolling a mix of customer classes.
- ✓ **Staff should engage in direct outreach to the largest commercial customers and DA customers prior to enrollment:** Due to the significant amount of energy they use per account, delaying enrollment of the largest commercial accounts until direct outreach can be conducted is advisable. Customers on Direct Access should be treated similarly since auto-enrollment could affect their DA participation and eligibility. Staff can continue to support pre-enrollment of these accounts while it staffs up to conduct the more targeted outreach required for large commercial and DA accounts.

[8] On April 11th, the SFPUC adopted new rates for CleanPowerSF, making them lower than PG&E even after accounting for PG&E's PCIA and FFS charges. The SFPUC's rate reduction, which goes into effect on July 1, 2017, ensures customers are paying no more for their electric service even after accounting for PG&E's higher fees.

3.2 Power Supply and Markets

The CleanPowerSF Phasing Policy requires power supply to be sufficient to meet projected new customer demand. Thus, to allow for citywide expansion, CleanPowerSF must develop an energy supply portfolio to serve its full customer base while meeting its other goals, including affordability and clean energy content. CleanPowerSF must determine the price and availability of various renewable and other energy sources, and the legal and regulatory requirements for energy supply as a load serving entity (LSE), in order to plan a supply portfolio and procurement strategy that best serves its customers and meets its goals.

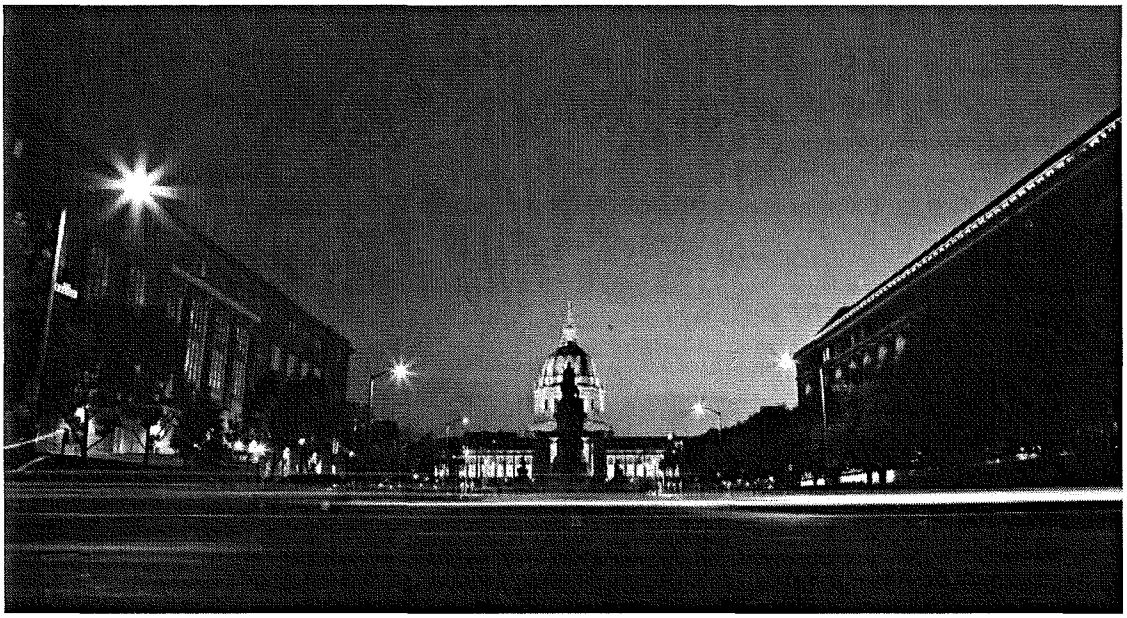


Photo 4: City Hall (powered by Hetch Hetchy Power) At Night

3.2.1 Product Content

For its May 2016 launch, the CleanPowerSF Product Content Policy set a target renewable content for the default *Green* energy product of 35%. The Policy also set forth a goal of relying on Product Content Category 1 (PCC 1) renewable resources to the extent that it is economically and financially feasible – meaning that Renewable Energy Credits (RECs) purchased for the program are "bundled" with their underlying electricty and delivered directly into a California electric balancing authority area. As of the end of 2016, the *Green* product is 40% PCC 1 renewable and 76% GHG-free, exceeding the goals initially set.

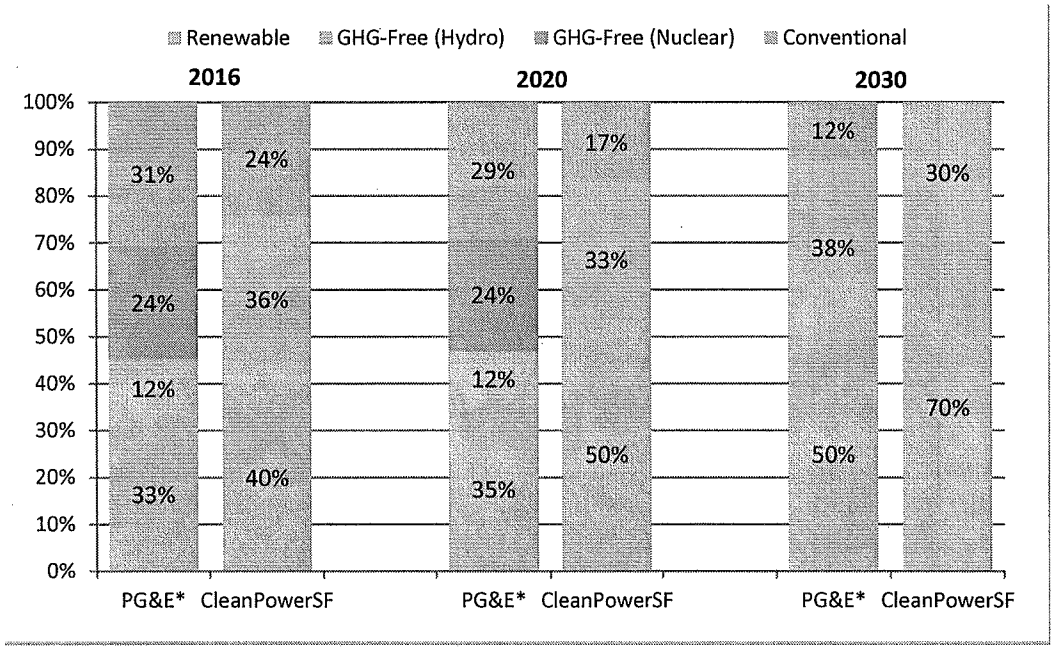
CleanPowerSF is currently unique among operating CCAs for supplying all its renewable energy to-date through PCC 1-compliant renewable energy. It is important to note that these resources come at a significant premium over other Product Content Categories (discussed further below).

For purposes of this growth plan, CleanPowerSF created a baseline projection of the program's default *Green* product renewable and GHG-free content minimum targets for the CleanPowerSF supply portfolio (Figure 12). The annual targets are intended to achieve the power content objectives:

- Maintain renewable content minimums that are at least 10% above a pro-rata of PG&E's state requirement of 50% renewable by 2030;
- Achieve a renewable content that is 50% renewable by 2020; and
- Reduce the GHG-emitting power content each year to achieve San Francisco's goal of a 100% GHG-free electricity supply by 2030.

As Figure 12 indicates, the resulting renewable energy target is at least 70% by 2030. The remaining 30% of the portfolio is assumed to be sourced from GHG-free hydroelectric or additional renewable energy supplies.

Figure 12: Comparison of PG&E and CleanPowerSF Power Content Projection

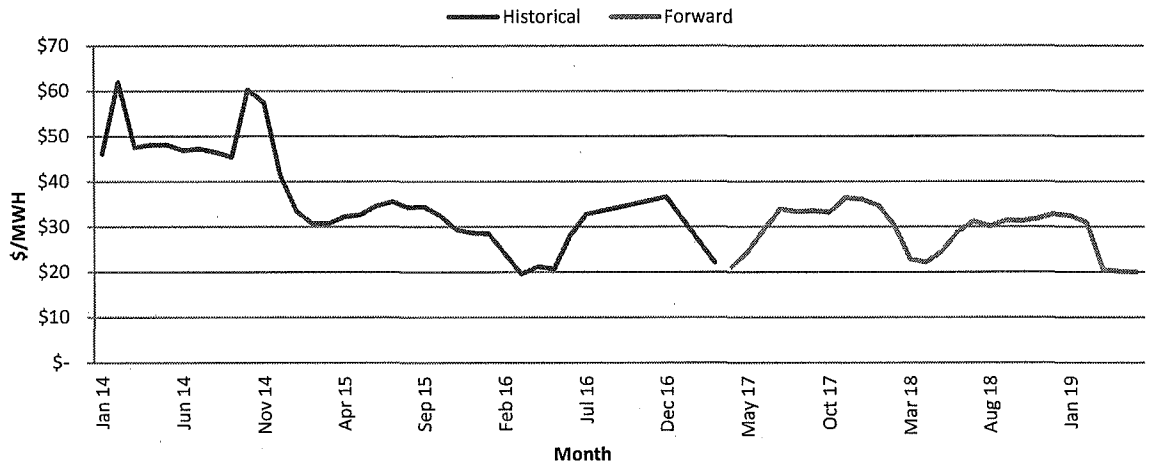


*PG&E data interpolated using PG&E's 2016 Form 10-K filing, California RPS targets and Table 2-3 of PG&E's Testimony in the Diablo Canyon Application (A.16-08-006)

3.2.2 Observations in the Wholesale Electricity Market

A review of California Independent System Operator (CAISO) wholesale electricity prices indicates that, on average, prices have been on a decline in recent years. Current forward price curves indicate that wholesale market prices are expected to stay in the $20-40 range over the next couple of years.

Figure 13: Historical and Forward Wholesale Energy Prices (CAISO NP15)



Source: California ISO OASIS (historical data) at: http://oasis.caiso.com/mrioasis/logon.do; ICE Reports (forward data) at: https://www.theice.com/marketdata/reports

The decreasing price trend that can be observed in Figure 13 is attributable to a number of factors, including: 1) significant amounts of new renewable energy capacity (mostly solar) coming on-line in recent years, 2) historically low natural gas prices driving down the cost of natural gas-fired electric generation, and 3) more hydroelectric supply in California in 2015 and 2016 than in the previous two years.

As shown in Figure 13, there is also a seasonal trend to wholesale electric pricing. Generally speaking, lower prices are found in spring (with hydroelectric resources coming on the market) and higher prices in late summer due to higher statewide energy use. In 2016, this meant wholesale prices trending primarily within $20-$40/MWh in the day ahead market (at the NP-15 trading hub); however, more instances of negative pricing are occurring during certain hours of the year due to the increasing amounts of variable renewable generation.

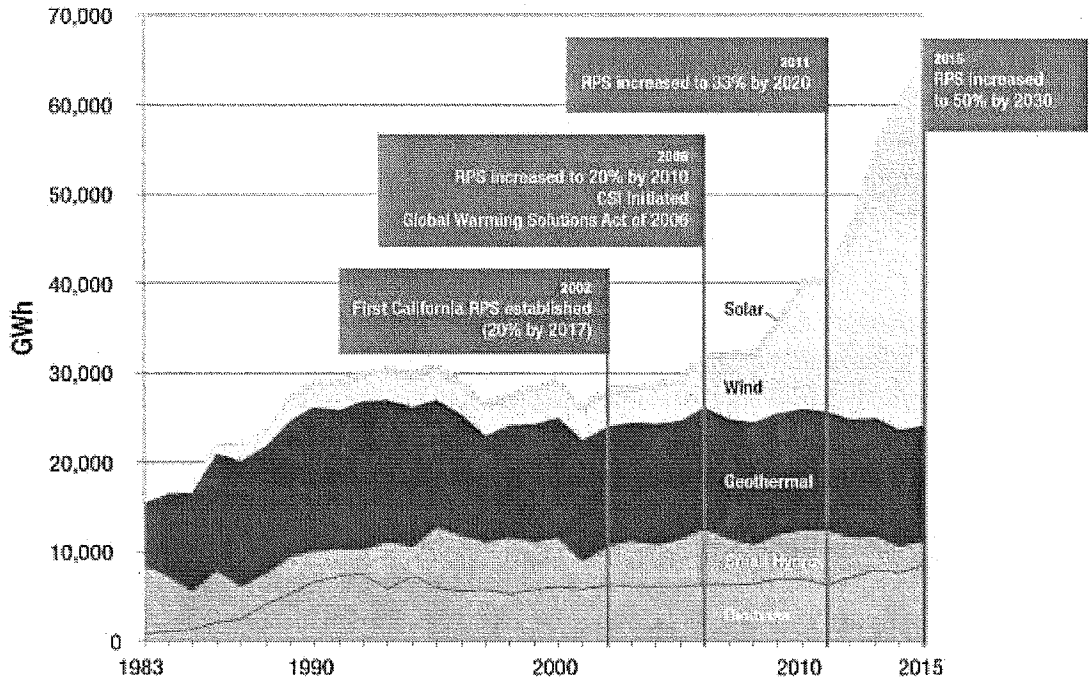
Low prices can mean it is a good time to be a buyer in the wholesale electricity market. Lower wholesale prices mean cheaper energy for consumers and lower credit and collateral thresholds for wholesale buyers, like CleanPowerSF. However, all else being equal, low wholesale prices can also drive down retail generation rates and are a major contributor to an increasing Power Charge Indifference Adjustment (PCIA), as the resources in PG&E's portfolio become more expensive relative to their market value. An increasing PCIA can greatly reduce the amount of revenues CleanPowerSF may generate while remaining competitively priced vis-à-vis PG&E.

Pricing and Availability of Premium Products: California Renewables

As new CCAs come on-line and seek to serve their ratepayers with greater renewable energy content, CleanPowerSF must consider whether this increased demand for renewable energy products will challenge supply and drive prices upward.

Renewable supply tracking by the California Energy Commission (CEC) indicates that renewable energy supply has been exceeding the projected demand associated with RPS compliance. As of October 2016, CEC tracking shows that California is ahead of schedule for meeting the RPS requirements. In-state renewable capacity has almost quadrupled between 2001 and 2016, increasing from 6,800 MW to 23,600 MW over that time span. Furthermore, approximately 10,600 MW of new renewable capacity is currently permitted and either in construction or pre-construction. As one would expect, renewable energy production has also been on a rapid rise over this time period as shown in Figure 14 below.

Figure 14: Renewable Energy Production in California 1983-2015



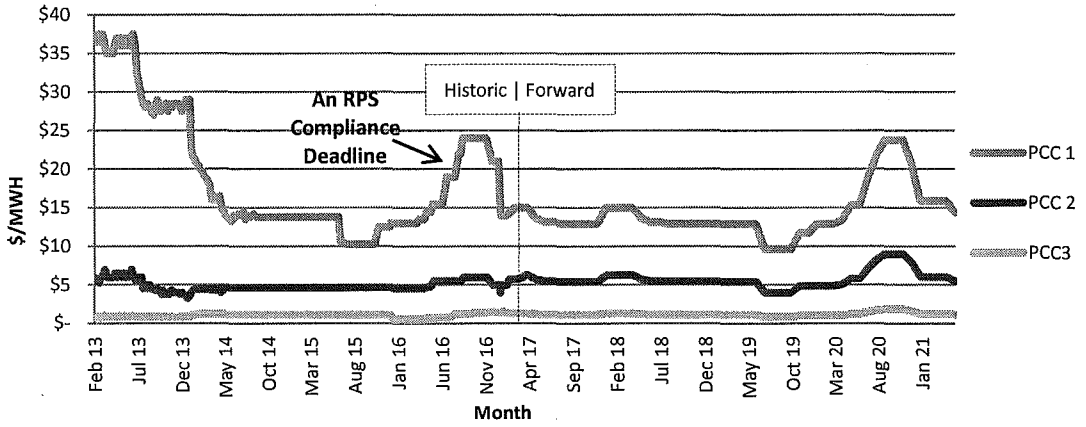
Source: California Energy Commission, "Tracking Progress," available at: http://www.energy.ca.gov/renewables/tracking_progress/#renewable

The renewable capacity growth figures noted above suggest that developers have scaled renewable capacity quickly in response to market demands. Furthermore, CleanPowerSF staff discussions with renewable energy developers indicate that significant additional capacity can be

developed. This has led to the conclusion that access to renewable energy supply sufficient to meet CleanPowerSF's ambitious goals is not an obstacle.

As noted above, CleanPowerSF's Product Content Policy set forth a goal of relying on PCC 1 renewable resources, to the extent feasible. To date, CleanPowerSF has fulfilled this goal, procuring its renewable energy using only PCC 1 products. However PCC 1 renewable energy products come at a significant premium over other Product Content Categories (PCC 2 and PCC 3). Some of this premium can be mitigated through careful supply portfolio planning that avoids the need to purchase prior to compliance deadlines, when prices are highest (shown in Figure 15).

Figure 15: Spot Renewable Energy (REC) Prices (Historical and Future)



Existing Renewables

Recent reports (as of October 2016) indicate that wholesale renewable energy resources in Northern California total 6.9 gigawatts[9] (GW), or approximately 35% of the state's total renewable energy capacity. Of that, 3.0 GW, or about 14% of the state's renewable capacity, is located in the 9-county Bay Area (See Table 1 below).[10]

Table 1: Comparison of Statewide, Northern California and Bay Area Renewable Resources

Technology / Fuel Type	Wholesale Renewable Capacity					
	All California		Northern California		9-County Bay Area	
	MW	%	MW	%	MW	%
Biomass	1,328	6%	780	11%	63	2%
Geothermal	2,716	11%	1,998	27%	1,238	41%

[9] A gigawatt is 1,000 megawatts and 1,000,000 kilowatts

[10] See the California Energy Commission, Tracking Progress – Renewable Energy, available at: http://www.energy.ca.gov/renewables/tracking_progress/documents/renewable.pdf

Small Hydro	1,764	9%	1,261	17%	3	<1%
Solar PV	8,171	39%	1,646	22%	141	5%
Solar Thermal	1,257	6%	-	0%	-	0%
Wind	6,053	29%	1,721	23%	1,593	52%
% of Statewide Total		100%		35%		14%

The types of available renewable energy vary by region as well; existing renewable capacity in the 9-county Bay Area is dominated by wind and geothermal (mostly the Geysers in Sonoma and wind in Altamont Pass and Solano County). Areas of Northern California outside the Bay Area and Southern Californiahave much greater concentrations of solar and small hydro resources.[11]

It is important to note that local renewables tend to come at a price premium over renewables sourced from other parts of the state.[12] There are a number of reasons for this including, but not limited to: 1) limited space in densely populated areas reduce the scale economies that can be achieved, especially from solar; 2) higher property values increase project land costs; 3) higher regional wages increase project labor costs; and 4) the renewable resource may be more productive elsewhere (e.g., solar radiation is 22% better in Lancaster, California than in San Francisco).[13] In addition, with the number of CCAs existing and forming in the Bay Area, and the tendency for these CCAs to express a preference for local energy supply, one would expect greater competition for limited supplies, which could drive up prices further. All of this suggests that CleanPowerSF must have a flexible approach to sourcing its renewable energy supply, balancing the potentially higher cost of local renewable energy sources against the lower cost of renewable energy produced in other areas of the state.

3.2.3 Contract Credit and Collateral

Credit provisions are an important element of wholesale power purchase agreements, specifying the agreed-upon protections against the risk of default by parties to the agreement. Credit provisions for wholesale power contracts often include posting of collateral in the form of a letter of credit, cash deposit, or other form of mutually agreed-upon security.

Securing energy supply contracts can be a significant cost to a new CCA program that does not have a credit rating. The cost of posting collateral was a constraint on the size of CleanPowerSF's Phase 1 launch, and is expected to be a factor in the pace of future growth.

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[11] See MRW & Associates, "Technical Study for Community Choice Aggregation Program in Alameda County," available at: https://www.acgov.org/cda/planning/cca/documents/Feas-TechAnalysisDRAFT5312016.pdf

[12] For example, MRW & Associates recently estimated a 15% premium for solar projects located in Alameda County.

[13] Average annual solar radiation is 5.27 kWh/m^2/day at SFO International Airport and 6.44 kWh/m^2/day in Lancaster, CA. See PVWatts Calculator at: http://pvwatts.nrel.gov/index.php

Research indicates that as it grows, CleanPowerSF will likely find lower collateral requirements in comparison to those encountered in the 2015-2016 supply contracting for Phase 1 and anticipated in the 2015 Business Plan. This is due to many factors, including increased familiarity of power suppliers with CCAs and a demonstrated CleanPowerSF track record.

The amount and form of collateral required of a CCA can vary based on the financial standing of the CCA and a number of other factors, described further in the Financing section below. However, collateral requirements also tend to vary with contract type. Through conversations with suppliers, staff has found that collateral requirements are typically greater for conventional energy supply contracts that offer firmed or shaped energy, and/or additional ancillary energy services, and may be minimal for long term contracts with developers of renewable resources. Ultimately, collateral posting needs will tie to contract volume and length, making having a narrow open position for an extended period of time (e.g., fixing a large part of supply for multiple years) more costly from a supply financing perspective.

Photo 5: CleanPowerSF Billboard in District 5

3.2.4 Portfolio Management and Open Position

As CleanPowerSF grows from a 60 MW program to a 400+ MW program, its supply portfolio – and associated contracting needs – will also grow. The size of the program is not the only reason for growing contracting needs; CleanPowerSF will seek to diversify its portfolio as it moves from mostly short-term (3 years or less) conventional and short-to-medium term (5 years or less) renewable agreements, to long-term (10 year or more) renewable and local development agreements.

CleanPowerSF's general approach to supply management is to diversify its supply portfolio across suppliers, technologies, project size and location, price terms, and contract tenor. This diversified procurement strategy will result in relatively fixed pricing for CleanPowerSF's customers over the short- and intermediate term. Such a portfolio structure is consistent with the stated preferences of customers, who generally are averse to price volatility, even if prices are slightly higher on an expected value basis.

The following figure presents a stylized portfolio and hedging structure for a 10-year forward projection of the CleanPowerSF supply portfolio (at full scale).

Figure 16: Stylized Resource Portfolio and Hedging Structure

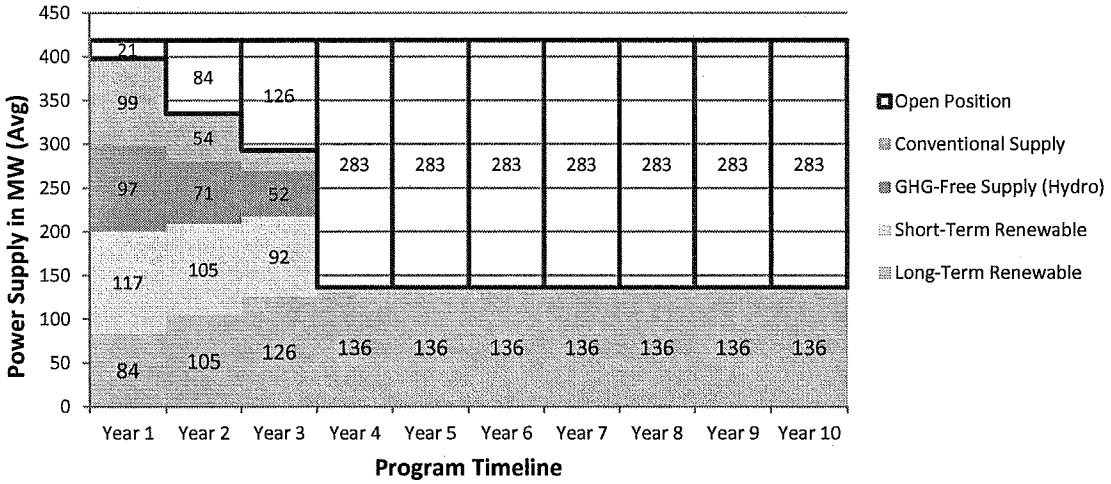


Figure 16 shows the resource types and the tenure of contracts that CleanPowerSF would secure to meet its program supply content, regulatory requirements and rate objectives. The laddered portfolio structure reflects a forward contracting position of 95% of the upcoming year's (Year 1) supply requirements, minimizing CleanPowerSF's exposure to short-term price volatility. In this example, the forward commitment would step down to 85% of the supply requirement for Year 2, 70% for Year 3, and 33% for Years 4-10. Laddering contracts means that power will be procured using staggered, multi-period contracts instead of through a single contract, or several contracts that expire all at once, creating significant market exposure. It also means that CleanPowerSF will conduct energy supply procurements each year to fill future open positions. This type of supply portfolio structure is common in deregulated electricity markets and is consistent with what CleanPowerSF staff have observed as a best practice among other operating CCA programs.

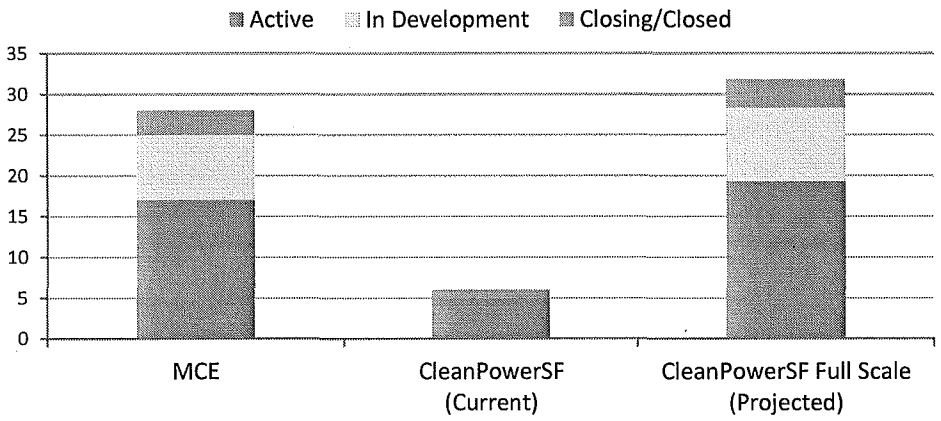
Expected Number of Contracts

Based on market research and studies previously conducted by the SFPUC on renewable energy potential in San Francisco and SFPUC properties, it is expected that renewable energy projects developed locally will be smaller in scale than projects developed elsewhere in California. The

program's goal to spur local renewable energy development combined with the smaller expected size of local projects will likely result in a greater number of contracts required to supply the program. As noted earlier, CleanPowerSF will also seek to diversify across technologies, geography, and suppliers to manage risk, further increasing the potential number of supply contracts it may execute.

To illustrate the number of supply contracts CleanPowerSF may execute as the program grows, Figure 17 shows a breakdown of MCE supply contracts by contract status (active, in development, closing).

Figure 17: Number of Energy Supply Contracts



Drawing from MCE's 2015 IRP update and recent press releases, CleanPowerSF identified 28 contracts that are either active, negotiated/in development, or closed/closing that MCE is using to serve the approximately 365 MW of average demand of its 255,000 customers. If CleanPowerSF were to similarly contract for its total projected load of 400+ MW, the program could expect to have a total of 19 active/producing contracts, another 9 contracts negotiated/under construction, and another 3 closing at any given time. This number may ultimately be higher or lower depending on the number of contracts CleanPowerSF executes with small-scale projects (e.g., feed-in tariff).

Assigning sufficient staffing resources to energy supply contracting and portfolio management will be critical, as will be the development of a regular Integrated Resource Plan (IRP) process (underway now and expected in summer 2017).

Photo 6: CleanPowerSF at Earth Day SF 2017

3.2.5 Spurring Local Development

CleanPowerSF is committed to investing in the creation of new, preferably local renewable generating capacity and promoting demand-side efforts, including energy efficiency and conservation programs.

Supply-Side Local Development

A number of options exist to spur the development of local renewable energy supply, including Feed in Tariff programs, Community Solar programs, and larger-scale development of local resources through utility-led build out and/or power purchase agreements (PPAs). CleanPowerSF is working on a Feed in Tariff program, exploring the feasibility of developing a community solar program, and plans to develop additional discrete projects (such as on SFPUC property at Sunol or Tesla), once additional staff resources to develop and administer these programs are available. Due to their cost-effectiveness, CleanPowerSF anticipates most immediately seeking PPAs for new, local and renewable energy resources in its upcoming energy procurements.

Demand-Side Local Development

CleanPowerSF staff plan to develop demand-side program offerings following completion of citywide enrollment, further stakeholder engagement, and the identification of funding sources. One potential external source of funding (i.e., non generation revenue) for energy efficiency and

demand response programming is public goods charge (PGC) funds collected from all ratepayers and overseen by the California Public Utilities Commission (CPUC). Only one CCA, MCE, has applied for and successfully leveraged energy efficiency PGC funding to date, and it has borne substantial program design restrictions and administrative costs from the CPUC's evaluation, monitoring, and verification requirements (which were created for IOUs). CleanPowerSF will continue to plan for demand-side programs and explore sources of funding.

3.2.5 New Renewable Energy Supply Will Drive New Job Creation

The major driver of job creation for the CleanPowerSF program, at least initially, will be sourcing more renewable energy within California. These new renewable energy jobs will come from the construction and operation of renewable power plants.

Using the National Renewable Energy Laboratory's Jobs and Economic Development Impact (JEDI) model, staff has estimated that 1,300 to 5,000 jobs may be created over the next 4 to 5 years to support CleanPowerSF's achievement of 50% renewable energy content in its *Green* product.[14] Findings from this analysis are summarized in Table 2.

Table 2: Job Creation Estimates from Renewable Energy Project Development

	Construction Jobs		Plant Operations		Total Jobs	
	Low	High	Low	High	Low	High
Phase 1[15]	165	660	6	22	170	682
Full Scale[16]	1,320	5,281	45	181	1,365	5,462

This job creation range is dependent on the amount of renewable energy supply being sourced from newly constructed renewable power plants. The projection assumes 20-80% of CleanPowerSF's renewable energy supply comes from newly constructed renewable plants. The number of jobs ultimately created will depend on the amount of energy is sourced from new versus operating renewable energy plants.

CleanPowerSF can likely create more clean energy jobs through additional programing, but these jobs are difficult to quantify at this time. The CleanPowerSF team will report on job creation estimates as it brings proposals for new service and program initiatives to the Commission for approval.

[14] This projection assumes 20-80% of CleanPowerSF's renewable energy requirement is sourced from newly constructed renewable plants.

[15] Job estimates for Phase 1 assume that on the low end the program builds new projects to serve 20% of its forecasted renewable energy requirement (19 MW of new renewable capacity) and on the high end 80% of its forecasted renewable energy requirement (76 MW of new renewable capacity).

[16] Job estimates for Full Scale assume that on the low end the program builds new projects to serve 20% of its forecasted renewable energy requirement (140 MW of new renewable capacity) and on the high end 80% of its forecasted renewable energy requirement (560 MW of new renewable capacity).

Supply Findings Summary

- ✓ **Energy market findings**: Energy prices are stable, and have lowered slightly over the past few years. Data show that the renewable and other energy products that CleanPowerSF may seek for growth are available at reasonable prices, but a solicitation is required to determine the scale and cost of supplies required for citywide service.
- ✓ **Procure aware of compliance deadlines:** Historical and forward price curves for renewable energy indicate that prices increase during the final year of state RPS compliance periods. 2017 is the first year of a new compliance period, making it a good time to buy in the market as prices will likely increase towards the end of the current compliance period (2020).
- ✓ **Prioritizing Bucket 1 renewables**: To date CleanPowerSF has purchased only PCC 1 and no PCC 2 or PCC 3 renewable products. CleanPowerSF continues to prioritize PCC 1 over other renewable energy product types, at a cost of two to three times the cost of PCC 2 and ten to twenty times the cost of PCC 3 products. Given CleanPowerSF's multiple goals, it may be prudent to maintain the option to procure PCC 2 as a means of increasing renewable content to support program growth while also achieving ratepayer affordability. PCC 2 resources could be used as a bridge to maintain desired renewable energy content until new California or Bay Area projects can be constructed to serve CleanPowerSF load.
- ✓ **Local development**: CleanPowerSF local development goals can be supported in the near-term through new long-term local renewable PPAs continuing development of CleanPowerSF's Feed-in-Tariff program. Additional staffing resources will allow CleanPowerSF to explore and pursue additional development paths such as utility-led community renewables.
- ✓ **New jobs will be created**: Meeting the program's renewable energy goals will be the major driver of new job creation. The jobs created from sourcing more renewable energy within California will come from the construction and operation of renewable power plants. Staff has estimated 1,300 to 5,000 jobs may be created over the next 4 to 5 years to support the CleanPowerSF's achievement of the proposed 50% renewable energy goal. The ultimate number of jobs created will depend on the amount of energy is sourced from new versus operating renewable energy plants.
- ✓ **Credit and collateral constraints**: Supply contract collateral and financing requirements can vary by product and supplier. In general, firmed and shaped contracts from more conventional suppliers require significantly more collateral than long term renewable PPAs, which may require very little or no collateral. Collateral needs tie to contract volume and length, making a narrow open position more costly from a supply financing perspective.
- ✓ **Risk management requires portfolio management**: Contract diversification and active portfolio management will be critical to program success (and successful growth). Research points to the use of short-term conventional contracts and long-term renewable PPAs – the latter of which may be with unrated developers, making diversification valuable as a risk mitigation strategy. Assigning appropriate expertise and bandwidth for portfolio management will be critical, as will be the development of a strong **Integrated Resource Plan (IRP)** (underway and to be completed summer 2017).
- ✓ **Administrative efficiency in supply contracting is critical to achieve competitive pricing**: The SFPUC must continuously work to improve power contracting practices to allow the Power Enterprise to respond to favorable market opportunities in a timely manner. Continuing to standardize contracting documents, procedures and supporting systems will support this goal.

3.3 Financing Needs and Options

CleanPowerSF's growth will rely on the ability to access cost-effective financing for liquidity for basic program operations as well as collateral for power supply purchases. The availability, cost and terms of financing for program expansion are core considerations of the CleanPowerSF growth plan.

Financing for CCA activities is a rapidly evolving market. SFPUC staff, in partnership with financial consultant Clean Energy Capital, have gathered information on the state of CCA operations and supply purchase collateral financing through outreach with financial institutions, power suppliers, and the power purchasing staff at other CCAs.

3.3.1 Credit Availability

The research conducted by CleanPowerSF over the past several months suggest credit is available, potentially with limited or no recourse to the Power Enterprise. However, parties still have different views on CCA credit, based principally on varying views of CCA program risk.

Through this research staff has learned that financing costs and collateral requirements can be influenced by a number of factors, including:

- **Financial stability and track record**: Demonstration that CleanPowerSF's performance is meeting financial projections and plans can provide confidence to suppliers and financial partners. The longer the track-record with this type of performance, the greater the value.
- **Cash on hand**: A number of suppliers have been willing to remove collateral or dedicated reserve requirements if a CCA's financials show liquidity and strong net position.
- **Customer retention**: Low opt-out rates provide financial and power supply entities with a sense of security that revenues are stable and will continue to come in.
- **Financial transparency**: All suppliers and financing entities have mentioned the value of transparency. Specifically, the provision of monthly financial statements (unaudited) by CCAs such as MCE and SCP have supported successful negotiations with lenders and suppliers.
- **Establishment of a lockbox**: having a financial institution and/or supplier(s) party to a lockbox that receives IOU-delivered customer revenues has been stated as desirable by some, but not all, financial and power supply parties.

Based on this research and the program's current financial standing, staff estimates that CleanPowerSF could currently access sufficient credit to support supply transactions of approximately 200 MW. This assumes that the supply portfolio is composed of a mix of shorter term conventional and longer term renewable contracts similar to other operating CCAs. Ultimately, the desirability of the available credit will need to be reviewed through a more formal process, such as a Request for Proposals (RFP).

Because the exact financing needs will depend on the needs and terms of CleanPowerSF's intended supply contracts, CleanPowerSF staff anticipates that financing options would most opportunely be assessed through an RFP process held in parallel with an energy supply Request for Offers (RFO) process. CleanPowerSF and SFPUC Business Services staff are in the process of preparing this upcoming financing RFP.

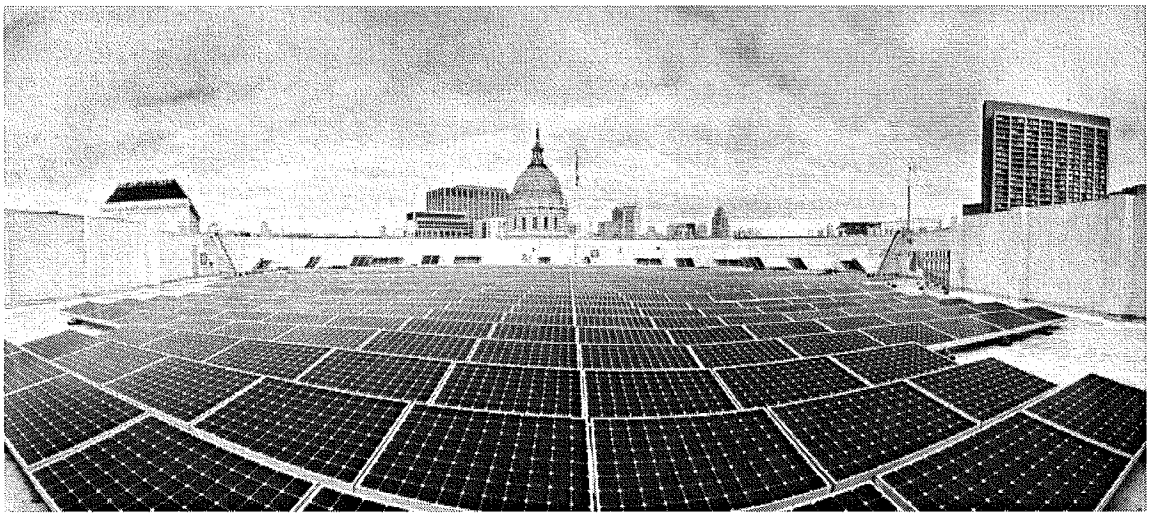


Photo 7: Davies Symphony Hall Solar Panel Installation

3.3.2 Considering a Lockbox

As CleanPowerSF considers tools and methods to optimize its collateral and credit terms, staff has reviewed the possibility of setting up a lockbox. A lockbox is a financial arrangement in which a third-party financial institution, or trustee, maintains a set of accounts on behalf of a CCA entity. The CCA entity assigns the trustee its right to receive revenues from power sales, and the utility responsible for billing customers (PG&E) pays the trustee directly. The trustee applies the revenues it receives in accordance with a pre-defined waterfall of priorities. In a single-party lock-box, the first priority is payment of monies due to a single power supplier, typically the full-requirements power supplier selected by the CCA entity. In a multi-party lock-box, multiple power suppliers (and potentially financial institutions) designated by the CCA entity share this first-priority position.

As used in the CCA sector, the lockbox has two primary functions. The first is to establish a priority of payments that grants designated creditors (such as the full-requirements power supplier) a senior position; the second is to empower a third-party financial institution to administer the established priority of payments. Discussions with suppliers and financing entities

revealed that the transparency and the effective one month's reserves provided by the lockbox flow of payments are also attractive to some participants. In general, conventional suppliers and financial institutions were more likely to see value in or strongly recommend using a lockbox. Some conventional suppliers and renewable developers expressed ambivalence to a lockbox with a preference for more traditional forms of security such as cash posting, prepayment, or letters of credit.

Unique among CCAs, CleanPowerSF has not implemented a lockbox and instead collects and disburses funds as an internal administrative function. Research shows that CCA experience with utilization of a lockbox is mixed. Some CCA representatives found the lockbox burdensome and costly to administer (primarily citing legal fees for managing modifications for multi-party use); some also cited challenges of supplier unease and cash flow restrictions. However, most found use of a lockbox valuable for the purpose of lowering collateral and credit requirements, in particular in the early stages of that CCA's establishment and before the existence of a financial track record.

3.3.3 Options for Financial Independence and Credit Rating Development

Per CleanPowerSF's 2015 Business Plan and Business Practice Policies, CleanPowerSF has been established as a financially-independent entity within the SFPUC Power Enterprise, with separate and defined ratepayers. This means the revenues, expenses, assets and liabilities of CleanPowerSF remain separate from the rest of the Power Enterprise and SFPUC. Financial independence allows CleanPowerSF revenues and expenditures to be excluded from the Power Enterprise bondholder pledge, and also sets CleanPowerSF on a path to establishing a clear financial track record (and eventual independent credit rating) to support favorable negotiations with financial institutions and energy suppliers.

However, the Power Enterprise has provided limited financial backing to support CleanPowerSF's launch, in the form of an $8 million loan and securitization of letters of credit. Given the projections of credit availability discussed above, CleanPowerSF will be seeking to grow its program using third party financing and without using any further recourse to the Power Enterprise, while continuing its debt service payments to the Power Enterprise on the established payment schedule. Ultimately, the feasibility of implementing this strategy will be confirmed by the financing RFP and energy supply RFO processes, which will clarify the cost and amount of credit that will be required.

3.3.4 Valuing Reserves

Fully funding program reserves is a critical strategy for maintaining strong program operations, as well as CleanPowerSF's ability to deliver on its goals of rate affordability, reliability and stability. Per its Business Practice Policies, CleanPowerSF is dedicating a portion of its net revenue to reserves with the goal of growing operating reserves equal to 3 months of operating expenses, and rate stabilization reserves of 15% of total annual revenues, in three years. Rate stabilization reserves will be a particularly critical tool to mitigate external risks factors (e.g., changes in the

PCIA or PG&E generation rate) affecting CleanPowerSF's affordability and competitiveness on a total-bill basis. As noted earlier, reserves will also be particularly important for the rate protection of CARE customers.

In a survey of suppliers, financial institutions and CCAs, CleanPowerSF staff found that reserves are a key piece of supplier/financier review of a CCA's financial suitability, which may help lower financing burdens and/or reduce or waive collateral requirements. A survey of the reserve policies of other CCAs has revealed that other CCAs have set similar reserve targets.[17]

Financing Findings Summary

- ✓ **Availability and cost of credit**: Financial institutions have expressed interest in providing credit support to CleanPowerSF, at a scale that would support significant growth in program demand (likely up to 200 MW). However, the availability and cost of this credit must be determined through a Request for Proposals process, which would be most productive if conducted in parallel with an energy supply Request for Offers.
- ✓ **Financial best practices**: CleanPowerSF should consider taking actions to make itself a desirable counterparty to energy suppliers and financial institutions – such as offering transparency in monthly financials, building a strong net position and program reserves, and demonstrating how program performance aligns with projections – in order to reduce financing costs and ultimately build a path to financial independence and a CleanPowerSF credit rating.
- ✓ **Lockbox as a potential strategic tool**: The lockbox payment structure is an option for securing power purchases if third party credit support solicited through the proposed financing RFP is insufficient or too costly. While the lockbox is a proven means of securing CCA power supply transactions and may lower the cost of financing, these benefits should be weighed against the administrative costs and other potentially limiting factors, such as reducing the interested power supplier pool. CleanPowerSF should also explore whether or not the benefits of a lockbox can be provided to counterparties through alternate methods, such as an internally-administered priority of payments structure.
- ✓ **Suitability of reserve policy**: CleanPowerSF's current reserve policy is comparable to those of other CCAs. Funding reserves are and should continue to be a critical component of CleanPowerSF's financial strategy.

[17] See MCE's Feb 3rd 2016 discussion of a reserve target policy in its Executive Committee Meeting materials: https://www.mcecleanenergy.org/wp-content/uploads/2016/01/2.3.16-ExCom-Meeting-Packet.pdf; this policy was voted in on February 18th, 2016: https://www.mcecleanenergy.org/wp-content/uploads/2016/03/2.18.16-Board-Minutes.pdf. Sonoma Clean Power's reserve policies were adopted in January 2015: https://sonomacleanpower.org/wp-content/uploads/2015/01/Revised-Board-Policies-amended-2015.05.07.pdf.

3.4 Regulatory and Legislative Affairs

As CleanPowerSF expands, it will continue to confront complex and evolving regulatory and legislative challenges. CleanPowerSF must remain in compliance with state and federal regulations and staff resources are needed to understand key issues, conduct compliance activities, and oversee the process. CleanPowerSF must also diligently monitor regulatory and legislative activity to ensure fair competition and to protect the interests and investment of San Francisco in the CleanPowerSF program. Regulatory and legislative intervention will be critical to ensure CleanPowerSF is able to compete on a level playing field with PG&E and to manage program costs.

3.4.1 Regulatory Compliance

As for all CCAs, the compliance burden for CleanPowerSF is significant. Approximately 50-60 compliance reports must be developed and submitted each year to state and federal agencies, including:

- California Public Utilities Commission
- California Energy Commission
- California Air Resources Board
- California Independent System Operator
- California Board of Equalization
- U.S. Energy Information Agency
- Western Renewable Energy Generation Information System

As compliance is not optional, CleanPowerSF must ensure it has staff bandwidth and knowledge to fulfill these requirements. Regulatory and Legislative Affairs has been identified as a high priority for near-term staff additions. A full list of CleanPowerSF compliance requirements per its current programming is included as Appendix A-2.

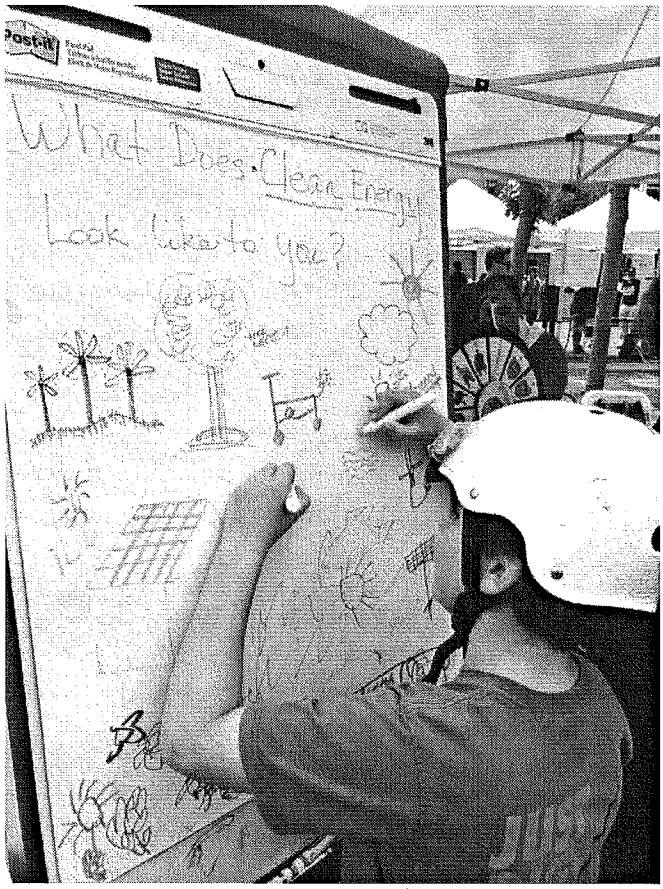


Photo 8: CleanPowerSF at Earth Day SF 2017

3.4.2 Regulatory and Legislative Advocacy

To protect the interests of San Francisco ratepayers – both CCA and non-CCA participants alike – the Power Enterprise regulatory staff and the City Attorney's Office must monitor and engage in many proceedings before State regulatory agencies as well as monitor bills at the State Legislature. Appendix A-2 lists the proceedings staff is actively engaged in and/or monitoring now. This list will evolve over time, as CleanPowerSF priorities shift, new proceedings begin, and existing proceedings close. Further, as staff resources increase and decrease, the time and attention staff may dedicate to these proceedings will change.

As CleanPowerSF continues to evaluate its regulatory priorities, it is helpful to have a framework to analyze the potential impact of new and existing issues. Similar to what has been put in place by other CCAs, staff recommends a regulatory and legislative advocacy framework focused on the following three issues:

- **Competitiveness:** Ensuring that CleanPowerSF competes in a fair environment without other providers receiving undue advantage.

- **Cost:** Ensuring the costs and responsibilities imposed on CleanPowerSF ratepayers through regulations and/or legislation are fair and lend to the most efficient means of achieving program goals.
- **Local Responsibility**: Ensuring that local decision-making authority over CleanPowerSF energy procurement – a key driver of the CCA model –remains intact while providing opportunities for CCAs to be proper stewards of their place in the greater electric system.

Issues that involve multiple areas of the framework are more likely to significantly impact the goals and/or operations of the program and are deserving of more staff attention and resources.

Figure 18: CCA Regulatory Involvement Framework

Table 3: Examples of Regulatory Proceeding Priorities

	Key Issues	Example Activities/ Proceedings
Cost	• Ensuring CCA procurement requirements don't unduly increase supply costs • Managing cost burdens of additional energy programs (e.g., energy efficiency)	• Integrated Resource Plan (IRP), long term contracting requirements, Resource Adequacy (RA) • Renewable Portfolio Standard (RPS) • SB 350 implementation
Competitiveness	• Ensuring non-bypassable charges (e.g., PCIA, FFS) are fair, equitable and transparent • Ensuring PG&E rates appropriately reflect costs – and that those costs are borne by the appropriate service provided (generation, transmission, distribution)	• PCIA and FFS setting in PG&E ERRA • General Rate Case • Transmission Access Charge • Investor owned utility applications and advice letters for new power contracts • Cost allocations to PG&E Solar Choice
Local Responsibility	• Ensuring state oversight applied to investor-owned LSEs does not challenge local control CleanPower provides SF as a CCA	• IRP • Long term contracting requirements • RA

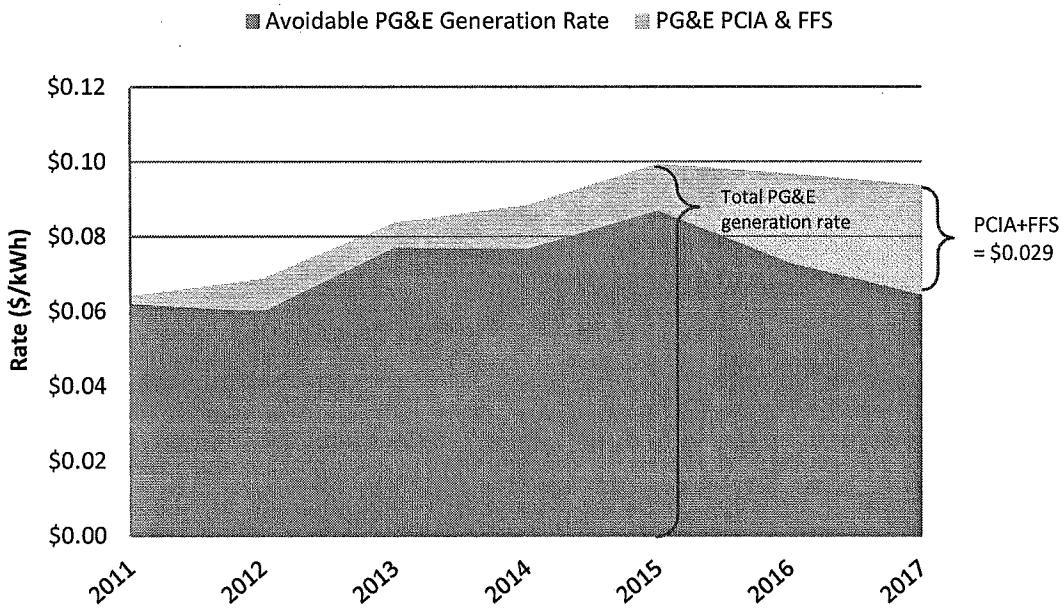
Table 3 above shares key proceedings currently requiring active advocacy and engagement from CleanPowerSF regulatory staff. It is important to note that as CleanPowerSF grows and matures, the addition of new programs may necessitate additional advocacy and compliance engagement. For example, the development of customer-side programming using PGC funding overseen by the CPUC carries significant compliance and advocacy requirements. A list of current advocacy proceedings and items is included in Appendix A-2.

3.4.3 Keeping Stride with the PG&E Generation Rate and PCIA/Franchise Fee Surcharge (FFS)

CleanPowerSF is committed to offering affordable service with rates that are competitive with PG&E. To achieve this, CleanPowerSF strives to maintain total generation rates that compete with PG&E's, even after accounting for PG&E's Power Charge Indifference Adjustment (PCIA) and Franchise Fee Surcharge (FFS), also known as non-bypassable charges. PG&E's generation rates vary by customer rate class, may change multiple times in a year, and have varied over the last ten years from a low of just over $0.06/kWh for the largest commercial accounts in 2012 to a high of over $0.10/kWh for medium commercial in 2015. Rates climbed steadily from 2012 to 2015, but decreased in 2016 and 2017.

The chart below shows how the addition of the PCIA and FFS charges affect the threshold that CleanPowerSF must meet to maintain competitiveness with PG&E on a total-bill basis.

Figure 19: PG&E Generation Rate and PCIA Since 2011 (Residential)



At current levels, PG&E's PCIA and FFS charges force CleanPowerSF to set generation rates approximately 20-30% below PG&E's in order to offer service to customers at a similar cost. The magnitude of the non-bypassable charges' effect on CleanPowerSF rate competitiveness and affordability illustrates the importance of building and maintaining appropriate regulatory advocacy resources to ensure that these charges are determined in a fair and reasonable manner.

Regulatory and Legislative Affairs Findings Summary

- ✓ **Compliance is not optional**: With as many as 60 regulatory compliance reports due every year, it is critical that staffing is sufficient to plan, prepare and demonstrate compliance.
- ✓ **Regulatory and legislative advocacy will be critical to the long-term success of CleanPowerSF:** State regulations and new legislation can directly affect CCA operations, authority, and competitiveness. This is best illustrated by the significant impact the PCIA can have on program rate competitiveness. It is critical that Regulatory and Legislative Affairs be adequately resourced to ensure that the City and CleanPowerSF is well-represented in these forums.
- ✓ **Additional regulatory bandwidth needs can be triggered by new programming:** Additional regulatory compliance and advocacy needs may be triggered by the launch of new program offerings, such as PGC energy efficiency funding.

3.5 Operational Readiness

Having sufficient staff and technology systems in place to support CleanPowerSF's growth will be essential to continue operating efficiently and to meet program goals. While several core functions of CleanPowerSF are scalable to meet the needs of program growth, the strategic application of additional resources will be important to take advantage of customer acquisition opportunities, manage risk, develop complementary program services, moderate workload and promote staff satisfaction. A total staff increase from 15.5 full time equivalent (FTE) employees to approximately 50-55 FTEs employees over the course of program expansion is recommended to serve greater program operational needs.

3.5.1 Current Staffing

The Power Enterprise's CleanPowerSF team is comprised of 8.5 FTEs that are devoted to program development and administration. This team works closely with SFPUC External Affairs on communications and outreach activities. Across the Power Enterprise and External Affairs Bureau, a total of 15.5 FTE positions are funded and directly support CleanPowerSF.

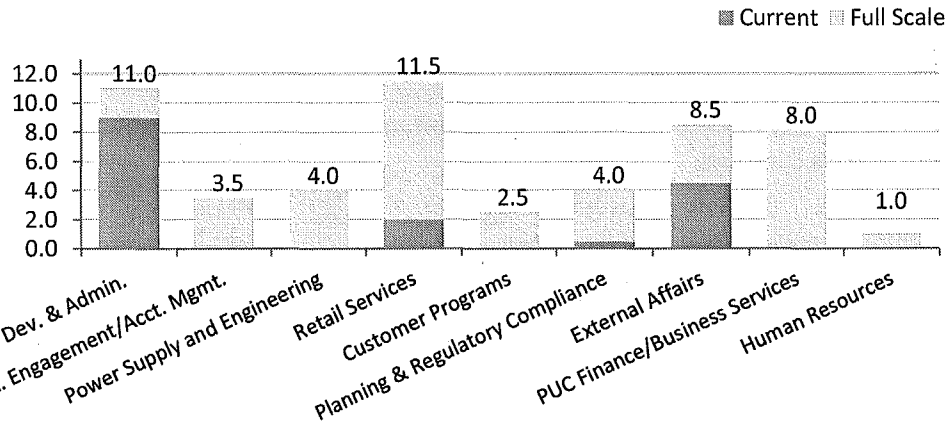
A number of departments across SFPUC and the City and County of San Francisco also support program operations. Within SFPUC, Business Services, Infrastructure, and Human Resources provide critical support functions. CleanPowerSF also depends on a number of departments across the City and County of San Francisco, most notably the Office of the Controller, Office of the City Attorney, Department of Human Resources, and Department of the Environment. An organizational chart showing the support functions provided by these entities is provided in Appendix A-3.

3.5.2 Considerations for Growth

From program inception through launch, CleanPowerSF has operated under an "all hands on deck" approach. Having a small team and ambitious timeline to roll out service to the first phase of customers required staff to wear many hats and collaborate extensively. In recent months, several staff members have been added, which has not only increased CleanPowerSF's capacity but has begun to allow for distinct competency areas to develop. Among these are customer data analysis, back office operations, energy supply procurement, demand forecasting, and customer program development. As the program continues to grow, it will gain efficiency by further developing these operating groups and, where feasible, integrating with other Power Enterprise teams working on similar functions.

The staffing recommendations offered in this Growth Plan are drawn from discussions with key Power Enterprise and SFPUC personnel as well as a comparative analysis of the CleanPowerSF organization with other CCA organizations.The following areas were identified as priorities for additional staffing and systems resources to support program expansion. The program staffing proposal by functional area is summarized in Figure 20.

Figure 20: CleanPowerSF Staff Growth by PUC Group (54 FTEs)



Origination and Power Contracting (Power Supply and Engineering Group)

As CleanPowerSF's energy demand grows, the program will need to significantly increase the number of energy supply contracts and counterparties in its energy supply portfolio to control costs, best take advantage of market opportunities, and manage risk. Over the next 12-24 months, the SPFUC will need to execute a significant number of new power supply contracts. Because energy supply represents the vast majority of program costs, strong management and staffing support in this area is essential to CleanPowerSF's financial stability and competitiveness.

Staff recommends immediately adding staff to support this critical program growth and operating function. A team should be developed that is devoted to resource planning, solicitations, and contract administration. This capacity can be shared with other Power Enterprise business lines.

Customer Engagement / Account Management

The expansion of CleanPowerSF to other districts in San Francisco will bring about shifts in the customer base, necessitating strategic changes in customer engagement. Enrolling medium and large commercial accounts will require a more direct and intensive engagement approach to retain customers and promote *SuperGreen* adoption. Expanding to certain residential neighborhoods across the City will require grassroots, community-based engagement in Chinese and Spanish to ensure customers are well-informed, build trust, and foster customer retention.

Staff recommends building a team of account managers dedicated to relationship development, customer service, billing analysis, and sales, with two staff added prior to the next major enrollment period (May 2018). After Citywide enrollment has been achieved, the focus of the team should shift to furthering *SuperGreen* adoption, forging marketing partnerships, and marketing new customer services.

Demand Forecasting, Scheduling and Settlements, and Risk Management and Business Analysis (Wholesale and Retail Services Group)

While these teams currently support CleanPowerSF, new systems and additional staff resources are needed to provide better coverage and staffing depth to support scaling to City-wide

enrollment. These critical program operating functions must be able to maintain operations when staff is absent due to vacation, leave, or turnover/attrition.

Staff recommends adding staff immediately to support the increasing workload in the load forecasting, power scheduling and settlements and risk management functions. CleanPowerSF should pursue developing shared staffing and system resources with other Power Enterprise business lines to capture economies of scale. Staff may be added incrementally as the program grows to increase coverage.

Energy Data Systems (Whole and Retail Services Group)

Better leveraging customer and program data is essential for future planning, research, and demand forecasting efforts. In the longer term, the strategic benefits of transitioning away from contractors and building customer service and/or billing administration capabilities internally will necessitate large-scale systems implementation efforts.

Staff recommends the following:

- Add professional services consulting capacity to support near and long-term data management and data systems planning and development.
- Expand data systems capabilities (e.g., in MDMS) to receive interval level meter data and other related customer data, making this information more accessible for analysis.
- Add staffing resources to the Power Enterprise Energy Data Systems team and the SFPUC's Information Technology group to support the expanded and on-going information systems and technology requirements of CleanPowerSF and the Power Enterprise.

Regulatory and Legislative Affairs (Planning and Regulatory Compliance Group/SFPUC External Affairs)

As discussed in Section 3.4, it is critical for CleanPowerSF to track and participate in many state-level proceedings and rate cases to ensure the program stays in compliance with its regulatory obligations and is able to compete on a level playing-field. In addition, CleanPowerSF must stay actively engaged in state legislative proposals that may affect how CCA programs operate. Going forward it will be important that SFPUC External Affairs is sufficiently equipped to support the significant legislative needs of the CleanPowerSF program.

CleanPowerSF urgently needs Regulatory and Legislative Affairs staff capacity within the Power Enterprise and the SFPUC External Affairs group to bolster efforts in this important area. CleanPowerSF should also continue to collaborate with other CCAs through the CalCCA forum to leverage the collective regulatory and legislative resources of all CCAs.

Customer Service and Billing Administration (SFPUC Finance and Business Services)

The support of an experienced contractor, Calpine Energy Solutions, in providing Customer Service and Billing Administration services has been critical to CleanPowerSF's success in rapidly launching the program and meeting the significant customer service requirements of enrollment periods. However, an evaluation of the long-term value of using a contractor versus building internal capacity for these services is warranted.

When it comes to customer service, it is important that the City be the face of the program. Call center and customer care expertise exists within the SFPUC today, and internal capacity to serve CleanPowerSF may be added incrementally, over time.

However, billing administration for CleanPowerSF requires complex processes and parallel skill sets do not currently exist within SFPUC (because CleanPowerSF's systems must interface with PG&E's systems). If brought in-house, this technical and highly specialized capacity would need to be developed.

In the near term, staff recommends incrementally building internal capacity for Customer Service, by adding 1-2 staff to answer customer calls and emails, using Calpine's CRM and phone system. Consultants will be needed to evaluate the data systems needs for fully incorporating customer service and billing administration, and to develop a business case for proceeding with integration of one or both services. Second, staff recommends issuing an RFP for systems implementation and ongoing support, and then transitioning CleanPowerSF customer service staff to SFPUC's Customer Contact Center as a full team is hired and SFPUC-managed CRM and phone systems are implemented.

Photo 9: Shiloh I Wind Farm

Table 4 below identifies the distribution of proposed positions, assuming the program grows in two additional phases – a second phase that brings the program to 250 MW of average demand and then at full scale. The projected staffing levels identified in each phase represent the total staff funded by the program at each proposed phase (Phase 1, Phase 2, Full Scale).

Table 4: CleanPowerSF Staffing Plan (FTEs by Program Phase/Size)

SFPUC/Power Enterprise Division	Phase 1 ≈60MW	Phase 2 ≈250MW	Full-Scale 400+MW
Program Development and Administration	9.00	9.00	11.00
Customer Engagement/Account Management	0.00	1.00	3.50
Power Supply and Engineering	0.00	2.50	4.50
Origination and Power Contracting	0.00	2.50	3.50
Retail Services	2.00	6.00	11.50
Forecasting	0.00	1.00	2.00
Scheduling and Settlements	1.00	2.00	3.50
Risk Management and Business Analysis	0.00	1.00	2.50
Energy Data Systems	1.00	2.50	3.50
Customer Programs	0.00	1.00	2.50
Planning and Regulatory Compliance	0.50	2.50	4.00
Regulatory and Legislative Affairs	0.00	2.50	4.50
External Affairs	4.50	6.00	8.50
Outreach and Communications	4.50	6.00	7.50
SFPUC Government Affairs	0.00	1.00	1.00
SFPUC Finance/Business Services	0.00	2.00	8.00
Customer Care / Call Center	0.00	1.00	6.00
Finance	0.00	1.00	2.00
SFPUC Human Resources	0.00	1.00	1.00
Total	**16.00**	**32.00**	**54.00**

Operational Readiness Findings Summary

- ✓ **At full-scale CleanPowerSF will need the support of approximately 50-55 full-time staff:** It is projected that CleanPowerSF will require the support of approximately 50-55 full-time staff. This staffing projection is consistent with other CCAs, particularly MCE, which has about 40-45 FTEs and is currently a bit smaller than CleanPowerSF's expected size at full scale. Six of the additional positions recommended in this plan for CleanPowerSF are call center staff, which MCE does not presently perform in-house.
- ✓ **Near-term staffing support is needed in critical program functions:** In the near term, growing CleanPowerSF is going to require the addition of significant new power supplies and financial support. Additional staff are needed immediately to support RFP processes, contract execution, and risk management. Furthermore, increasing regulatory and legislative activity at the State level highlights the need for increased resources to ensure the City's interests are well-represented. Finally, additional support from SFPUC Business Services and Finance, External Affairs and Human Resources will be needed in the very near-term to support the growth process.
- ✓ **Professional services contractors will be needed to fill gaps during growth:** Recognizing that it will take time to staff up the program, professional services will continue to play an important role in filling staffing gaps in program planning and operations. After program growth is complete, CleanPowerSF staff should turn its attention on in-housing operating functions that can be supported by City staff and systems.

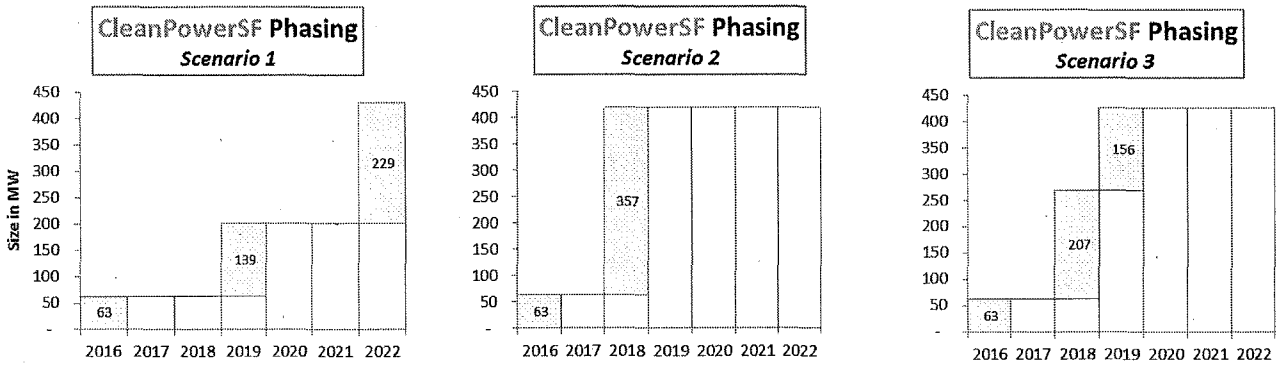
3.6 Proforma Financial Analysis

3.6.1 Scenarios

Drawing from the customer demand, power supply, financing, regulatory, and operational readiness findings described above, CleanPowerSF staff conducted financial and risk analyses of several scenarios that serve as options for CleanPowerSF program growth:

- Scenario 1: Growth to Citywide Service by 2022, Per 2015 Business Plan Phasing Strategy
- Scenario 2: Growth to Citywide Service by 2018 in One Additional Phase
- Scenario 3: Growth to Citywide Service by 2019 in Two Additional Phases

Figure 21: Program Phasing Scenarios



The purpose of this analysis is to understand the financial requirements and performance of different rates of program growth. The analysis identifies the program reserves and estimated collateral requirements for acquiring the power supply needed to meet the program demand in each growth scenario. It is important to note that this analysis does not address whether the energy supplies are available in the market to meet the respective enrollment timelines. As discussed in the Power Supply and Markets Section, the availability of energy supply will need to be established through a power supply RFO.

Pro Forma Assumptions

For these analyses, CleanPowerSF has updated its proforma with a number of assumptions covering product content minimums, financing needs, rate projections, market price projections, supply portfolio makeup, staffing needs, and more. These assumptions reflect information conveyed in the detailed findings above. More information on the assumptions used in this analysis is provided in Appendix A-6.

Scenario 1: Growth to Citywide Service by 2022 Per 2015 Business Plan Phasing Strategy

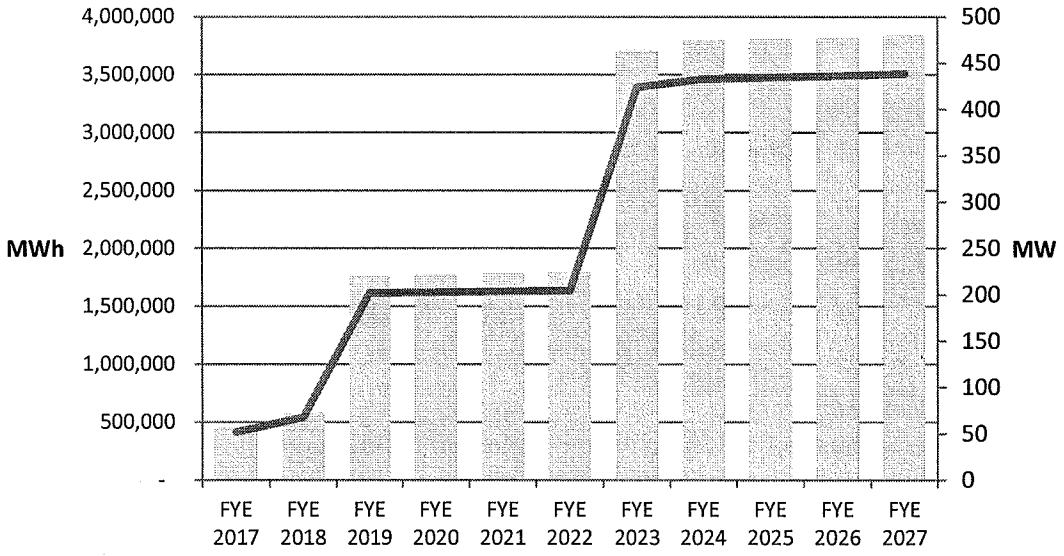
In the CleanPowerSF Business Plan shared with the Commission in December 2015, a plan to phase service to the full City was laid out using three additional auto-enrollment phases to be completed by 2022. The timing of these auto-enrollment phases was determined through

analysis that required CleanPowerSF to complete the self-funding of its reserves and any projected power purchasing collateral requirements in excess of the $40 million credit support secured by the Power Enterprise prior to enrolling additional customers. The key constraint of this scenario is that it assumes that no external credit support is provided to grow the program and that no additional financial support is provided by the Power Enterprise beyond $40 million credit support and the $8 million working capital loan.

This proposed schedule and structure for growing the program has been refreshed as part of the growth planning process, using updated information on market prices, power supply financing needs, competitor rate trends and new data on customer usage gained through CleanPowerSF operations to date. However, the key financial constraints for this scenario remain the same – no additional financial support is provided by the Power Enterprise beyond $40 million in credit support and the initial $8 million working capital loan.

Figure 22 below illustrates the projected Scenario 1 load growth. As you can see from the chart, under Scenario 1, the program would grow in two additional phases, a 150 MW phase in June 2018 and another phase of 246 MW in July 2022, which is when the program would begin providing service citywide.

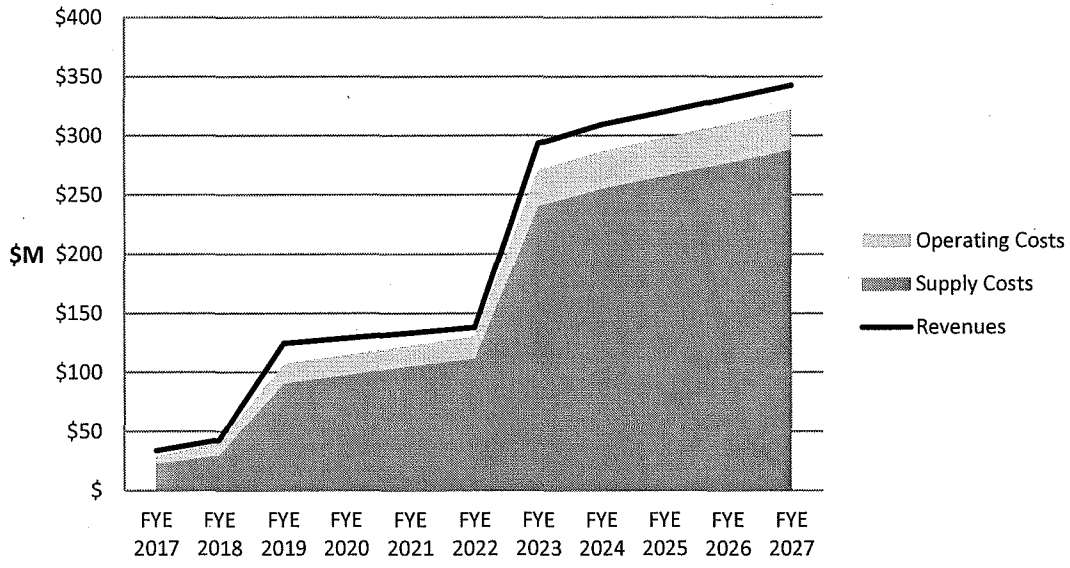
Figure 22: Annual Energy Sales and Average Demand (Scenario 1 – 2015 Business Plan Phasing Strategy)



Under this growth scenario, program revenues are projected to grow from approximately $33.7 million in FYE 2017 to approximately $128.8 million by FYE 2020. The first year of citywide program sales in Scenario 1 occurs in FYE 2023. This analysis projects that the Operating Reserve target of 90 days of program expenses and the Rate Stabilization Reserve of 15% of annual revenue can be fully funded by program revenues during FYE 2025, about three years after the

program achieves full scale. Scenario 1 assumes $40 million in credit support from the Power Enterprise is used to for power supply transactions. This exceeds the approximately $17 million that was used to support program launch, and does not leverage third party credit support that staff believes may be available to support expansion (as indicated in the Financing Needs and Options Section above).

Figure 23: Annual Energy Sales and Average Demand (Scenario 1 – 2015 Business Plan Phasing Strategy)



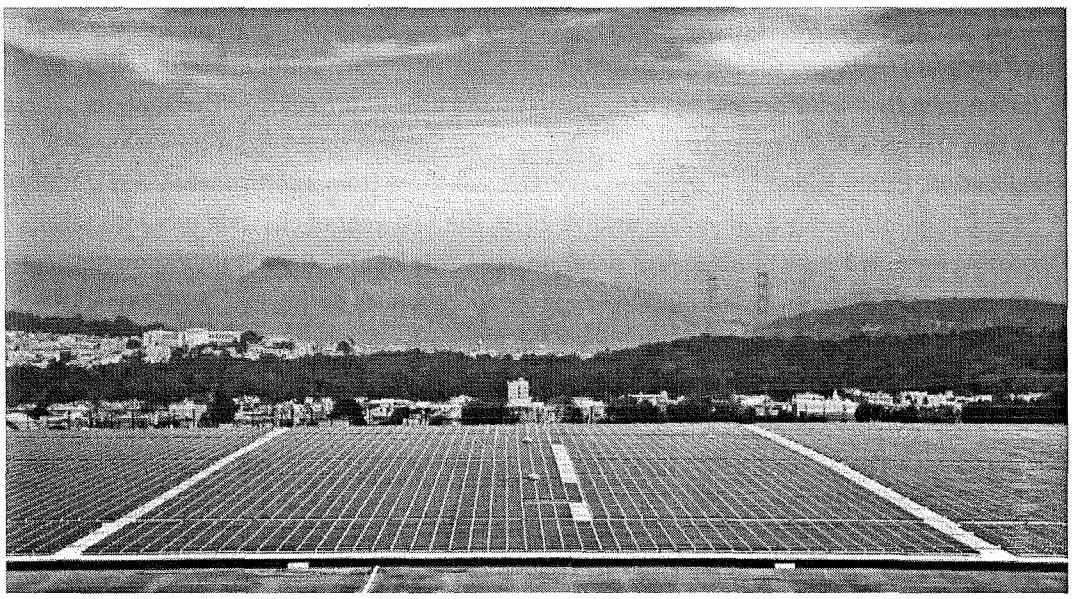
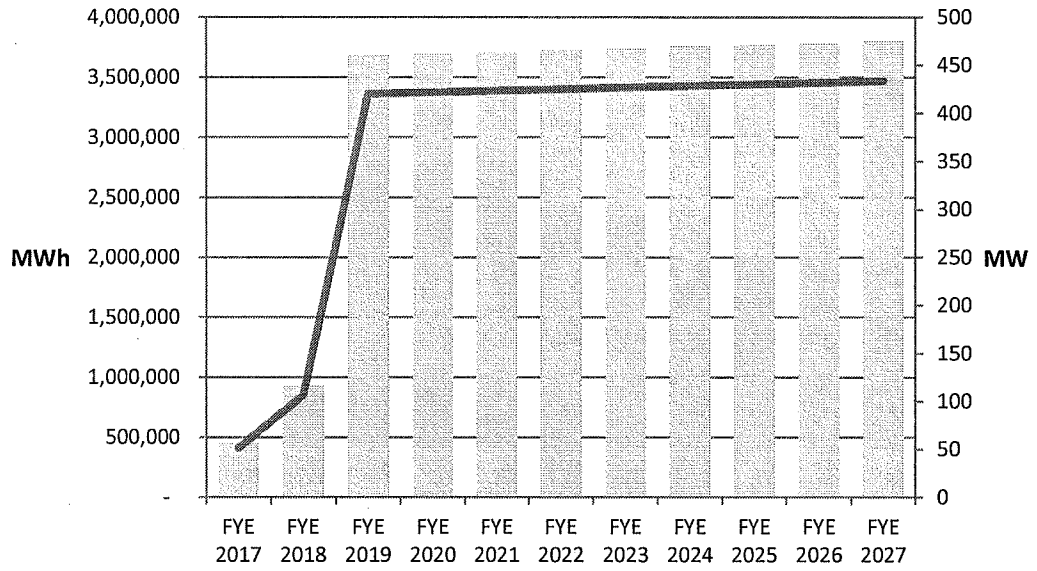


Photo 10: Sunset Reservoir Solar Panels (a CleanPowerSF source of power supply)

Scenario 2: Growth to Citywide Service by 2018 in One Additional Phase

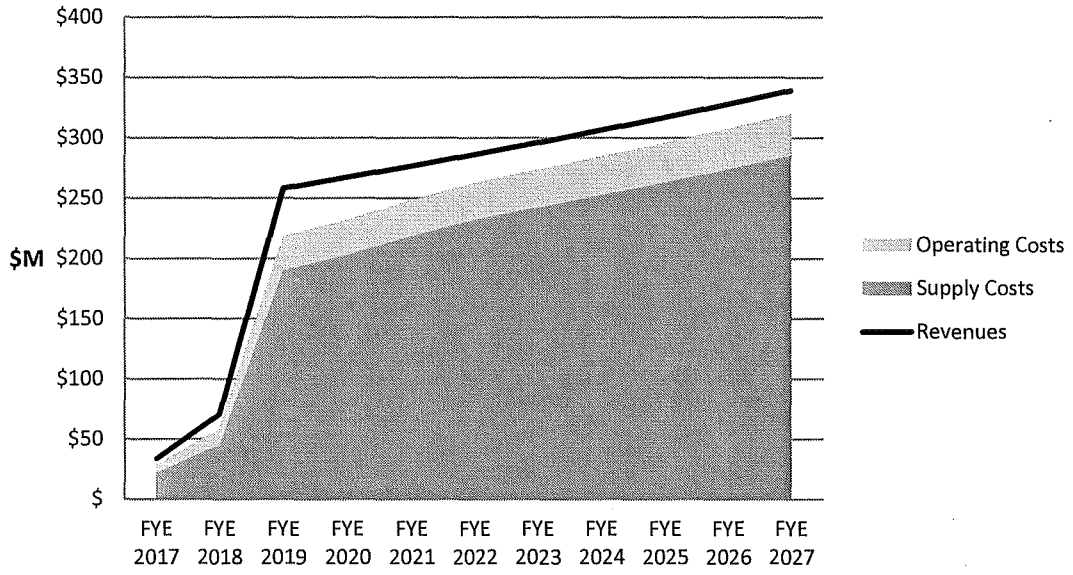
Scenario 2 examines an expedited auto-enrollment schedule phasing in all remaining eligible citywide load in one additional phase in May 2018. The Scenario 2 load growth scenario is summarized in Figure 24 below. FYE 2018 shows an increase in sales volume associated with the May and June months. The full extent of the sales growth in Scenario 2 begins to be reflected in FYE 2019. Sales growth beyond 2019 reflects an assumed 0.5% per year natural load growth.

Figure 24: Annual Energy Sales and Average Demand (Scenario 2 – Single Phase Expansion)



Projected program costs and revenues associated with Scenario 2 are summarized in Figure 25 below (See Appendix A-8 for projected annual sources and uses information). The analysis indicates that the program is projected to recover costs and collect reserves for operating and rate stabilization. Under Scenario 2, program revenues will grow from approximately $33.7 million in FYE 2017 to approximately $258 million by FYE 2019, the first year of citywide program sales. The Operating Reserve target of 90 days of program expenses and the Rate Stabilization Reserve of 15% of annual revenue can be fully funded by program revenues during FYE 2021, two years after the program achieves full scale. This means the program will require external financial support to cover these needs until this time.

Figure 25: Program Costs and Revenues (Scenario 2 – Single Phase Expansion)

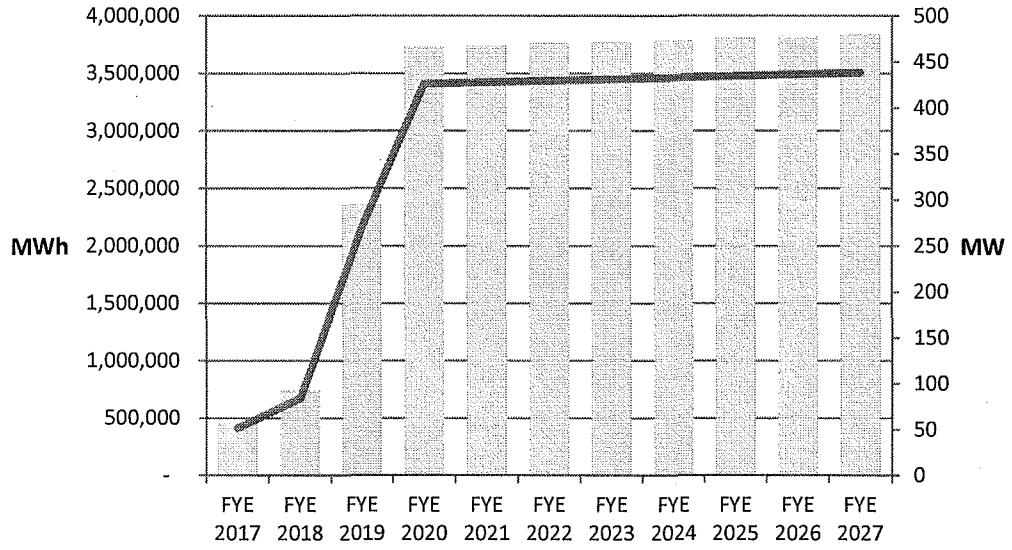


Scenario 3: Growth to Citywide Service by 2019 in Two Additional Phases

Scenario 3 examines a program expansion schedule, in which all remaining eligible citywide load is enrolled in two additional phases, one in May 2018 and one in May 2019.

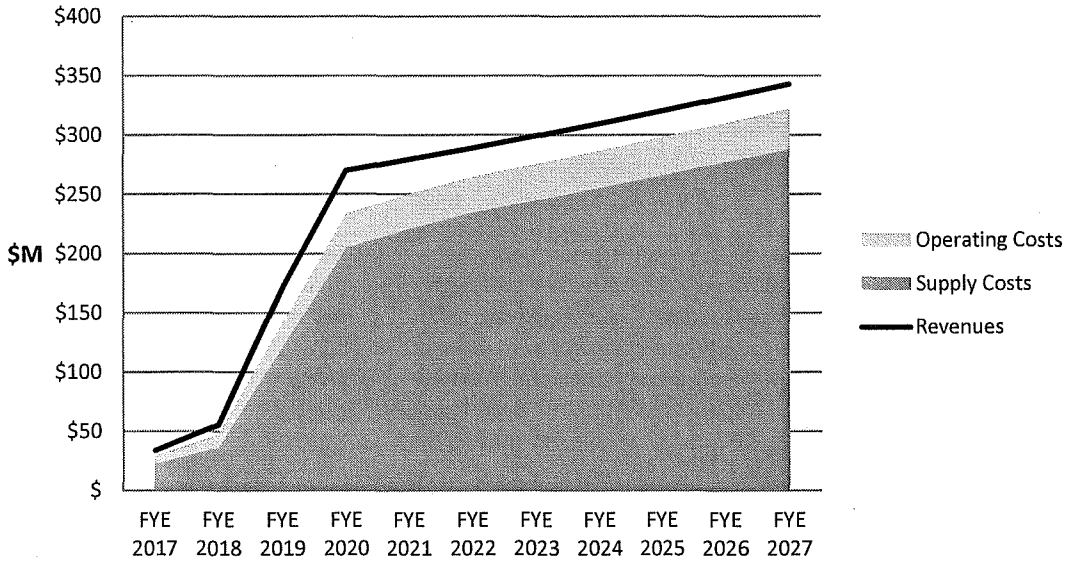
The Scenario 3 load growth scenario is summarized in Figure 26 below. FYE 2018 shows an increase in sales volume associated with the Phase 2 completion in May. The increased sales represent two months of additional demand that occurs at the end of FYE 2018. The growth in sales in FYE 2019 reflect a full year of Phase 2 sales and the Phase 3 enrollment in May. The full extent of the sales growth in Scenario 3 shows up in FYE 2020. Sales growth beyond 2020 reflects an assumed 0.5% per year natural load growth.

Figure 26: Annual Energy Sales and Average Demand (Scenario 3 – Two Phase Expansion)



Projected program costs and revenues associated with Scenario 3 are summarized in Figure 27 below (see Appendix A-9 for projected annual sources and uses information). The analysis indicates that the program is projected to recover costs and collect reserves for operating and rate stabilization. Under this growth scenario, program revenues will grow from approximately $33.7 million in FYE 2017, to $171.7 million by FYE 2019, and $270.1 million at the end of FYE 2020, the first full year of citywide program sales. Like Scenario 2, the Operating Reserve target of 90 days of program expenses and the Rate Stabilization Reserve of 15% of annual revenue can be fully funded by program revenues during FYE 2021, one year after the program achieves full scale. This means the program will require external financial support to cover these needs until this time.

Figure 27: Program Costs and Revenues (Scenario 3 – Two Phase Expansion)



Scenario Considerations

Table 5 below compares key factors staff have identified regarding execution of the enrollment pace for Scenarios 2 and 3.

Table 5: Comparison of Scenario 2 and Scenario 3 Enrollment Pace Factors

Factor	Scenario 2 (1 Add'l Phase)	Scenario 3 (2 Add'l Phases)
Operational Readiness	Findings on operational readiness suggest that current staffing levels will not be sufficient support expansion to the full City load in May 2018. At a minimum, additional staffing isrequired to support priority operational functions such as supply portfolio management, load forecasting and scheduling, account management and communications.	A two-phase approach to growth spread out over a 6 to 12 month time period is preferable from an operational readiness perspective as it will allow for additional time to staff up. This will also allow the SFPUC to better align new operating costs with program revenues (i.e., spreading those costs out over a longer period of time) and reduce the immediate administrative burden of hiring, training, and building institutional knowledge about the program.
Energy Procurement	Diversity of energy supply will be a central piece of energy supply risk management – which, as the greatest program cost is central to rate affordability and program	Spreading the development of a 400 MW+ energy supply portfolio over two phases (compared to one) will provide the CleanPowerSF team

Factor	Scenario 2 (1 Add'l Phase)	Scenario 3 (2 Add'l Phases)
	success. Acquiring sufficient cost-effective renewable energy to meet the program's needs at one time may prove challenging. Ultimately, the results of the power supply RFO will help establish if sufficient cost-effective supplies are available on this timeline.	greater flexibility to optimize the portfolio for cost and other attributes important to success. It may also support risk management by providing more time to execute a great number of supply contracts and diversifying the portfolio than can be accomplished under the shorter Scenario 2 timeline.
Financial	Similarly to Energy Procurement, the SFPUC needs to determine if sufficient financial support is available from third parties to acquire the energy needed to grow the program at this rate. A financing RFP, in conjunction with the power supply RFO, will provide answers to these open questions.	Dividing citywide enrollment into multiple phases rather than just one may allow the SFPUC to finance citywide expansion without any additional financial support from the Power Enterprise.
Communications	While some efficiencies in rollout would be gained from a single additional phase to Citywide service, particularly mass media, staff are concerned about the ability to conduct comprehensive outreach across the city on this timeline, particularly given current staffing levels.	Breaking citywide enrollment out into multiple phases will grant the SFPUC the time needed to conduct comprehensive outreach throughout the city. Depending on the availability of financing and power supplies it may be possible to split the rest of the city into two enrollment periods during the 2018 calendar year, which would give staff more time to conduct a thorough outreach and education campaign. Staff will revisit this option after it has received bids for power supply and program financial support.

It should also be noted that program operating costs (excluding supply costs) are shown to be between 15-20% of total revenues in Phase 1 and decrease to approximately 10-11% of revenues once the program is full scale. This indicates that there may be scale benefits to growth from an operating perspective.

3.6.2 Risk Analysis

In order to identify potential financial risks with expedited growth, a sensitivity study was conducted on Scenarios 2 and 3. It focused on the following four variables that staff has identified as having the greatest potential impact:

- **Changes to PG&E's Power Charge Indifference Adjustment**: Staff evaluated the impact of variation in PG&E's PCIA rate on program revenues. An increase of 30% and decrease of 15% from the predicted base case PCIA rates were tested, while assuming that in each

scenario CleanPowerSF would adjust its rates to maintain cost parity with bundled customers.

- **Changes to PG&E's Generation Rates**: Staff evaluated the impact of variation in PG&E's generation rates on program revenues. An increase of 5% and a decrease of 5% in PG&E's rates from those predicted in the pro forma were tested, assuming that CleanPowerSF adjusts its rates to maintain cost parity with bundled customers and that program costs do not change.

- **Renewable Energy Prices**: Sensitivity analysis was conducted to ascertain the financial impact of renewable enery prices increasing or decreasing by 25%.

- **Renewable Content**: The sensitivity to the renewable content in CleanPowerSF's portfolio was also explored by increasing the base renewable content by 5% or decreasing it by 2%.

Table 6 below shows the results of the sensitivity analyses in terms of the annual net impact in FYE 2020 dollars and as a percent of revenue. FYE 2020 was selected because CleanPowerSF would have its first full year of sales in both scenarios, thus providing the impact of each risk factor on the program at full scale.

Table 6: Sensitivity Analysis

Sensitivity Factor	Change from Base Case	FYE20 Net Impact	% of Revenue
PCIA Change	PCIA decrease by 10%	**+ $8.6M**	**+ 3.2%**
	PCIA increase by 30%	**- $25.9M**	**- 9.7%**
PG&E Rate Change (No Change in Cost)	Rate increase by 5%	**+ $17.8M**	**+ 6.6%**
	Rate decrease by 5%	**- $17.8M**	**- 6.6%**
Renewable Prices	REC cost decrease by 25%	**+ $7.0M**	**+ 2.6%**
	REC cost increase by 25%	**- $7.0M**	**- 2.6%**
Renewable Content	Base product renewable content decrease by 2%	**+ $0.9M**	**+ 0.3%**
	Base product renewable content increase by 5%	**- $2.2M**	**- 0.8%**

As shown above, the impact of changes to renewable energy pricing (with no changes to content) and the impact of changes to renewable energy content (with no increase or decrease to pricing) was relatively minimal. Changes in renewable energy pricing, tested at 25% above or below current pro forma assumptions, produce a $7.0 million (2.6%) change in revenue. Sensitivity to changes in renewable energy content is a bit more significant, increasing revenues by $900,000 if renewable content was decreased by 2% and decreasing revenues by $2.2 million if renewable content was increased by 5%. Another way of looking at these sensitivites is that every 1% change in renewable pricing produces a $280,000 change in net annual revenue. For every 1% change in

renewable energy content the program incurs about a $450,000 (0.15%) change in net annual revenue.

Changes in PG&E's PCIA and generation rates have the biggest effect on program revenues. As noted above, these sensitivities assume that CleanPowerSF will change its rates in response to a PG&E PCIA or generation rate change. Here, a 5% change in PG&E's generation rates could result in an impact of $17.8 million (6.6% change in revenue); or, every 1% change in PG&E generation rates results in a $3.6 million (or 1.3%) change in revenue. In addition, a 10% decrease in the PCIA could result in a $8.6 million increase in revenue (about 3%) and a 30% increase in the PCIA would decrease program revenues by approximately $25.9 million (9.7%). For every 1% change in the PCIA, one can expect an approximately $860,000 (or 0.4%) change in revenue when the program is full scale.

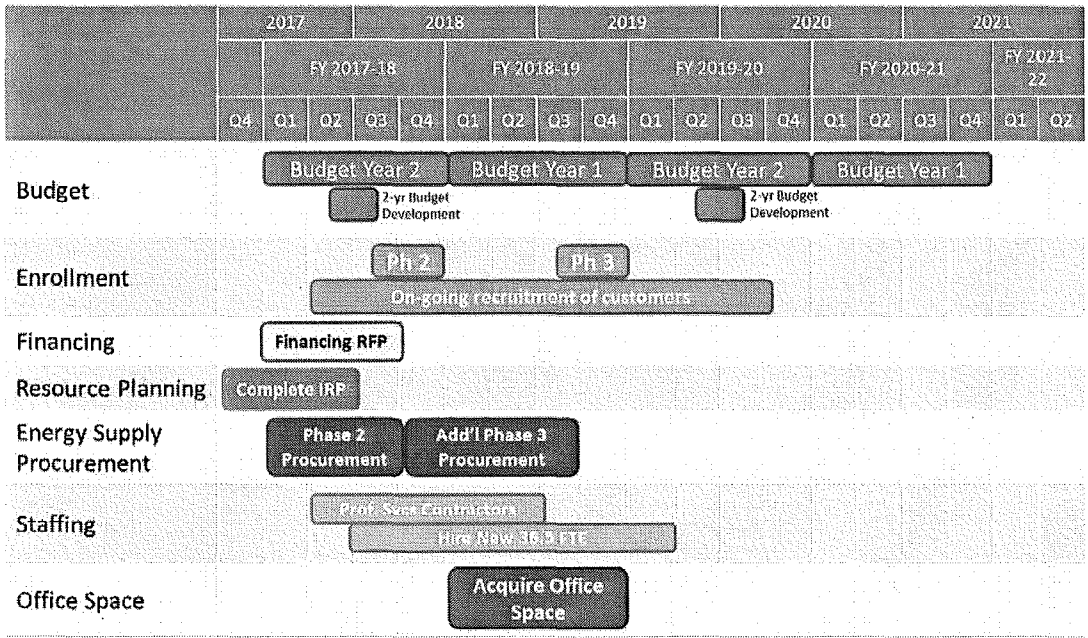
It must be noted that these sensitivities assume that PG&E's rates are changing independent of CleanPowerSF's power costs. Since CleanPowerSF and PG&E will be participating in the same wholesale markets, this is not likely to occur. On the other hand, if CleanPowerSF is highly hedged (i.e., most of its generation costs are fully locked-in on a multi-year basis) and PG&E is refunding a large over-collection (or making up for a large under-collection) from the prior year, a 10% impact is not impossible, especially given the accompanying effect of the PCIA.

Proforma Financial Analysis Summary

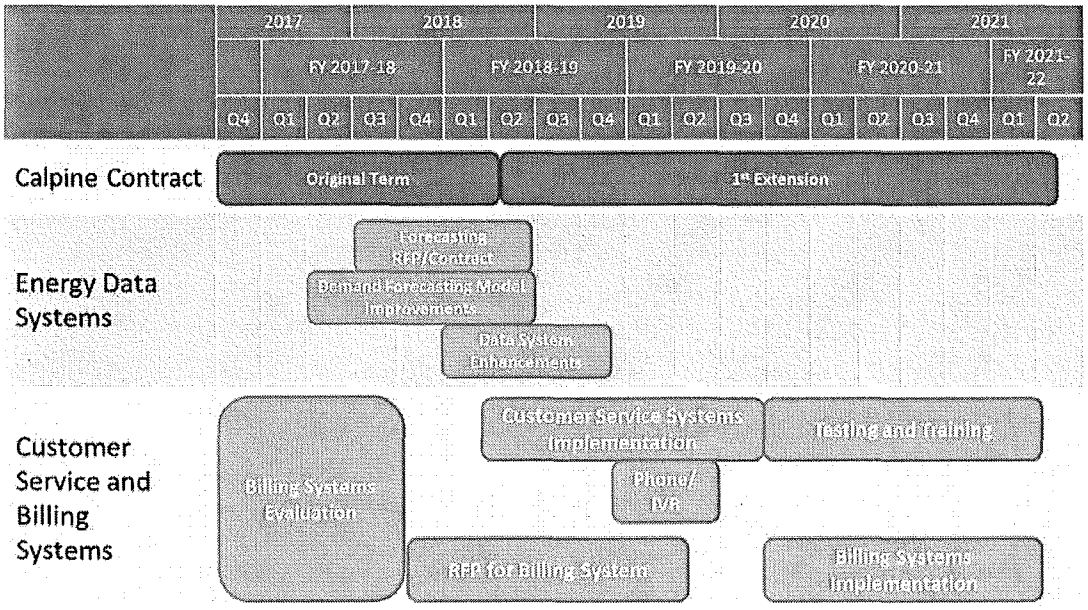
- ✓ **The program is financially feasibile at different rates of growth:** Each of the scenarios analyzed show that the program is feasible at the different rates of growth considered, given the assumptions used. Given this finding, other factors – such as staffing requirements and supply and financing procurements – play a central role in determining the optimal Scenario for growth.
- ✓ **A key constraint to growth is access to working capital and credit for power purchases:** The analysis projects that the program is expected to need $40-60 million in credit support and/or collateral to secure power purchase agreements at full-scale. In addition, fully funding financial reserves will require about $80+ million. Scenarios 2 and 3 indicate that reserves can be fully funded by revenues within 2 years of program expansion citywide, however third party credit support will likely be needed for growth prior to this time.
- ✓ **Changes to PG&E generation rates and the PCIA pose the greatest risk to program financial stability**: The sensitivity analysis indicates that changes in PG&E generation rates and the PCIA have the greatest impact on program revenues and can quickly erode program margins.
- ✓ **Scale efficiencies may be achieved with growth**: Program operating costs (excluding supply costs) are shown to be between 15-20% of total revenues in Phase 1 and decrease to approximately 10-11% of revenues once the program is full scale. This indicates that there may be scale benefits to growth from an operating perspective.

4.0 Timeline

4.1 Implementation Timeline



4.2 Systems Development Timeline



Appendices

Appendix A-1: CleanPowerSF Business Practice Policies

CleanPowerSF

Business Practice Policies

Adopted on December 8, 2015

(Amended on May 9, 2017)

TABLE OF CONTENTS

Product Content Policy

Renewable Content

All entities that provide electric power to end-use consumers in the state are required to comply with the California Renewable Portfolio Standard (RPS). The RPS establishes the minimum amount of renewable generation a load serving entity must utilize to serve its retail customers, the renewable technologies eligible for compliance to meet that minimum, and the relative amounts of the bundled and unbundled renewable products that may be used. The RPS was established in 2002 under Senate Bill 1078, accelerated in 2006 under Senate Bill 107 and expanded in 2011 under Senate Bill 2 and in 2015 under Senate Bill 350 (Public Utilities Code § 399.11-32). The RPS mandates that 33% of electricity sold to consumers must be generated by eligible renewable resources by 2020 and 50% by 2030.

By a vote of the people, San Francisco established City policy "... that the use of unbundled renewable energy credits for CleanPowerSF customers shall be limited to the extent deemed feasible by the SFPUC.... For renewable energy provided by CleanPowerSF that exceeds the minimum requirements of state law, the voters urge the SFPUC to apply the same limitations on the use of unbundled renewable energy credits, to the extent feasible." (San Francisco Environment Code § 2102(b), Proposition H, 2015.)

In directing the SFPUC to begin development of San Francisco's Community Choice Aggregation program, the Board of Supervisors found that through such a program "...the City could have additional means of increasing the scale and cost-effectiveness of conservation, energy efficiency and renewable energy ...(and) a means of exercising local control over electricity prices, resources and quality of service, and designing local energy systems to protect against future blackouts and rate shocks." (Ord. 86-04)

The SFPUC has developed the CleanPowerSF program to balance the sometimes competing objectives laid out by the Board of Supervisors – affordable, cleaner energy, including local generation and efficiency, while providing for long-term rate and financial stability. To achieve that balance, it is the policy of the SFPUC that the CleanPowerSF program shall offer two retail electricity products at launch: 1) a default "Green" product, with an initial target of 33% to 50% renewable energy content; and 2) a voluntary "SuperGreen" product, with 100% renewable energy content.

The renewable energy content goal of the Green product will be 35% renewable energy content when the program launches in 2016**, increasing to 50% renewable energy content by the end of 2020**. The Green product will at all times be no less than 33% renewable or the minimum statewide RPS target in effect at the time, whichever is greater.

CleanPowerSF will exceed the Green product renewable content commitments when it is cost-

effective as market conditions allow while balancing affordability, financial and rate stability, and local project objectives.

It is the policy of the SFPUC that CleanPowerSF purchase renewable energy from projects located within the nine Bay Area Counties (San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Napa, Sonoma and Marin), to the extent cost-effective and as market conditions allow.

The SFPUC shall implement the policy of the City that the use of unbundled renewable energy credits for CleanPowerSF be limited to the extent feasible, consistent with the goals of the program. For purposes of satisfying its renewable energy content objectives, at program launch CleanPowerSF will rely on Product Content Category 1 renewable resources, to the extent economically and financially feasible.

CleanPowerSF will follow the limitations of local and state law regarding the use of unbundled renewable energy credits to satisfy the applicable renewable portfolio standard. For renewable energy provided by CleanPowerSF that exceeds the minimum requirements of state law, the SFPUC will apply the same limitations on the use of unbundled renewable energy credits, to the extent feasible.

Carbon Content

In 2002, the Board of Supervisors passed the "Greenhouse Gas Emissions Reduction" Resolution (158-02), updated in 2008 (Ordinance 81-08, San Francisco Environment Code § 902), committing San Francisco to reduce citywide GHG emissions on a stepped-down schedule to 80% below 1990 levels by the year 2050. Implementing efforts recognize San Francisco's Community Choice Aggregation program as a key contributor to achieving those goals.

Consistent with City policy and SFPUC Resolution 11-0035, a principal objective of the CleanPowerSF program is to facilitate the City's shift to a greenhouse gas free electric energy supply. Toward these ends and to the extent economically and financially feasible, CleanPowerSF's energy portfolio carbon content shall be lower than the levels of carbon in Pacific Gas and Electric Company's electricity resource portfolio. Consistent with City policy and as economically and operationally feasible, CleanPowerSF will endeavor to reduce the total carbon content in its electricity resource portfolio over time with a goal of providing a carbon free electricity service no later than 2030.

For purposes of firming and shaping the electricity portfolio used to serve customers, CleanPowerSF will not utilize specified purchases of coal or nuclear energy.

Rate Setting Policy

As established in Ordinance 146-07, management and control of the CleanPowerSF program is being undertaken by the SFPUC pursuant to its responsibilities and authority under the Charter. As such, CleanPowerSF rates are set by the SFPUC Commission (Commission) pursuant to the authority and provisions set forth by the Charter (Section 8B.125). Among other things, the Charter requires the SFPUC to set rates, after one or more public hearings, based on the cost of service, and at levels sufficient to provide sufficient resources for the continued financial health (including appropriate reserves), operation, maintenance and repair of each enterprise.

SFPUC staff has estimated the cost to provide CleanPowerSF service, and conducted a risk assessment that identified and quantified potential variations in cost and revenue resulting from changes in key program assumptions. This effort demonstrates the viability of the program to meet program objectives, and forms the basis for the Commission to set rates for the initial program launch.

The Commission will adopt budgets and establish cost-based retail rates for CleanPowerSF that provide sufficient revenue for the continued financial health of CleanPowerSF. Program rates will be adequate to support program operations, including maintaining revenues necessary to pay CleanPowerSF's obligations under its power supply and other contracts, and future projects, taking into consideration program goals.

CleanPowerSF rates shall be adopted in a manner that is consistent with the SFPUC's Rates Policy principles, balancing *affordability*, *compliance*, *sufficiency*, and *transparency*. All CleanPowerSF budgets, rates, fees, and charges presented by SFPUC staff to the Commission will conform to the SFPUC Rates Policy. Any proposed deviations from this policy will be reported to the Commission along with any resulting impact to CleanPowerSF ratepayers.

In adopting rates for CleanPowerSF, the SFPUC will endeavor to minimize rate volatility. CleanPowerSF rates will be reviewed annually for the upcoming fiscal year and adjusted, as needed, to ensure sufficient revenue to meet its contractual, legal and regulatory obligations, while providing for program affordability.

Phasing Policy

It is the policy of the SFPUC that the CleanPowerSF program will be phased-in throughout San Francisco in a manner that is financially prudent and operationally feasible.

Initial and subsequent CleanPowerSF customer enrollments shall be conditional upon:

- Program rates being sufficient to cover program costs with rates 0.25% below PG&E generation rates when the program launches in 2016;
- Rates for a subsequent phase are projected to be at or below PG&E rates at the launch of each phase;
- Program supply commitments are sufficient to meet new projected customer demand;
- Staff and systems and/or qualified third party service providers can handle additional energy sales and customer account volumes;
- Sufficient and reasonably priced credit, collateral and working capital support is available; and
- All rate, contracts and financial support approvals have been obtained.

Supply Management Policy

In Ordinance 124-01, and again in Resolution 227-08, the City adopted policies prioritizing energy efficiency and conservation, demand response, renewable generation, distributed generation, and clean and efficient fossil-fired generation, in that order, to provide for a reliable, affordable electric supply. This prioritization, referred to as the "energy loading order", supports the City's efforts to reduce the impact of electric supply choices on the environment and to further its environmental justice goals.

As a retail electric service provider, CleanPowerSF will engage in several types of electricity procurement activities for an array of energy-related products. These products may include those related to energy, ancillary services, energy transmission and others that may be defined through legislative, regulatory and market design changes. CleanPowerSF's procurement activities may include competitive solicitations, bilateral negotiations, programmatic purchases and activities (e.g., energy efficiency and feed-in tariff purchases), project development and participation in the markets run by the California Independent System Operator. As it engages in these procurement activities, CleanPowerSF will implement the City's energy loading order.

CleanPowerSF initially will manage its supply costs in the near and mid-term by entering into fixed price contracts for specified volumes using contracts with qualified suppliers pursuant to its August 2015 Request for Offers.

After the first year of operation, CleanPowerSF will maintain a modest open position for mid-term and long-term supplies to provide flexibility to adapt to market conditions as they arise. To the greatest extent possible, CleanPowerSF will seek to develop a resource portfolio that is diverse from a resource/technology and supplier standpoint. To the extent Hetch Hetchy supplies are available, sales to CleanPowerSF shall be undertaken at fair market value, when not adverse to the public utility ratepayers of the Power Enterprise. CleanPowerSF power supply procurement activity and performance will be reviewed monthly, quarterly and annually.

Consistent with utility industry best practices, CleanPowerSF will conduct an annual Integrated Resource Planning (IRP) process to identify near-term and mid-term power supply needs and inform annual power purchasing activities, taking into account demand reductions projected to result from energy efficiency and demand response activities. The IRP process will (1) quantify CleanPowerSF's energy resource needs over a 10-year planning period; (2) prioritize resource acquisition preferences and set forth other relevant energy supply policies; and (3) provide guidance to programmatic purchases and activities, electricity purchasing and resource development processes undertaken by CleanPowerSF staff. The IRP process will be conducted and presented to the Commission each year following the first year of service.

CleanPowerSF shall develop and implement processes that monitor and manage power supply cost and risk, consistent with best utility industry practice. CleanPowerSF's risk management practices shall include methods to model and calculate portfolio cost based on low probability circumstances (for example a 5% probability) and shall establish tolerance bands, which require reporting and corrective action, if exceeded. CleanPowerSF staff shall present its power supply risk management practices to the Commission on an annual basis.

The development of local clean energy projects and jobs is one of the objectives of the CleanPowerSF program. The clean energy project and job opportunities CleanPowerSF presents include employment in program administration and operation, behind-the-meter efficiency and generation services, electric vehicle charging and energy storage infrastructure development, and power supply.

To begin to achieve this objective in the near-term, CleanPowerSF will focus on regular, standardized power purchasing with an identified preference for local and regional projects, where cost-effective. CleanPowerSF will also develop and provide Net Energy Metering (for customer-sited behind-the-meter projects); a Feed-in Tariff program (to purchase power from new local projects); and will issue solicitations for the construction of new local and regional renewable energy and storage projects on City-owned and controlled property. Before making any future decisions to construct or cause the construction of specific renewable energy projects subject to the California Environmental Quality Act (CEQA) the SFPUC shall consider any environmental review documents prepared by the City or other lead agency in compliance with CEQA and, if it approves such projects, the SFPUC shall adopt any required CEQA findings as part of such approval actions. Additionally, to help encourage investment in local rooftop solar, CleanPowerSF customers will continue to be eligible for GoSolarSF incentive funds.

CleanPowerSF will ensure customers remain eligible for PG&E services beyond energy supply or develop comparable, more locally-responsive services to be provided by CleanPowerSF. For energy efficiency and demand response programs, CleanPowerSF will focus initially on helping customers understand the opportunities available to them from existing ratepayer-funded programs and then expand, starting with locally-responsive energy efficiency, storage and demand response pilot programs.

CleanPowerSF will balance local project funding with affordability, financial needs, and renewable content enhancements, while establishing spending limits to mitigate the risks of high costs and project failure.

Reserves Policy

The SFPUC will prudently manage CleanPowerSF operations in a manner that supports its long-term financial independence and stability, provides sufficient financial capacity to bridge shortfalls in cash flow and covers unanticipated expenditures, while at the same time reduces susceptibility to emergency rate increases due to revenue shortfalls and considers ratepayer impact and fairness.

Prudent reserve policies are critical to securing favorable commercial terms from both third-party service providers and lenders and to the development of a future stand-alone CleanPowerSF credit rating.

Consistent with this policy and with the San Francisco Charter, the SFPUC will adopt budgets and establish rates for CleanPowerSF that provide for adequate ratepayer protection in the form of an Operating Reserve Fund and a Contingency/Rate Stabilization Reserve Fund.

These Funds will be established at the following funding levels to mitigate short-term, unanticipated loss of revenues or increase in expenses; stabilize rates; and support the growth of the program:

- Operating Reserve Fund: equal to 90 days of operating expenditures; and
- Contingency/Rate Stabilization Reserve Fund: equal to 15% of projected annual revenues.

The SFPUC will adopt budgets and establish rates for CleanPowerSF with the goal of building up to the above target reserves funding levels within three years of program launch.

Program Performance Reporting Policy and Metrics

On an annual basis, CleanPowerSF shall report to the Commission on the program's performance in the following areas and measures.

PERFORMANCE AREA	METRIC
Renewable Energy Content	Percentage (%) of power supply from renewable energy and resource types Location of projects supplying energy
Local Energy Production and Savings	Amount of energy produced and saved locally (MWh) Amount of capacity and energy supplied behind-the- meter (MW and MWh)
Environmental Benefits	GHG content of energy supplied (lbs/MWh) Citywide GHGs reduced (lbs CO2e)
Economic and Social Benefits	Direct and indirect jobs created (# job-years) Customer bill savings, including energy efficiency and net metering ($ and % saved)
Financial Metrics	Progress toward reserves balance targets Debt coverage ratio

Appendix A-2: Regulatory Engagement References

Compliance Requirements

Report Name	Description	Reporting Agency	Frequency
CAISO Officer Certification	Indicates and confirms requirements for participating in the CAISO market	CAISO	Annual
Voluntary Renewable Energy Report (CARB VRE)	Reporting to the ARB for voluntary REC retirement within the cap and trade regulation	CARB	Annual
Annual Retail Sales Report (CARB MRR)	Reports on greenhouse gases by major sources	CARB	Annual
Wind Power Purchases-Form 1386	Reports on all California wind power purchases of 1MW or more	CEC	Quarterly
IEPR-Demand Forecast	Projections of electricity planning for the next decade	CEC	Biennial (odd years)
IEPR-Resource Plans Update	Updates to changes in IEPR Demand Forecast report	CEC	Biennial (even years)
Power Source Disclosure	Inventory of all source-specific power purchases completed during the previous calendar year (REC-only and bundled)	CEC	Annual
QFER 1306B	Reports on location, revenue, and sales amounts of energy supply	CEC	Quarterly
Resource Adequacy (Historical Load Data-Previous Year)	Recorded demand by hour; recorded customer counts by month for residential, small commercial, large commercial, industrial, agricultural	CEC	Annual
RPS Closing Report	Finalized RPS report for the prior compliance period	CEC	As Requested
Resource Adequacy (Load Forecast Update)	Recorded and forecasted peak demand by month; residential, commercial, industrial, and agricultural if forecast has changed	CEC	As Needed
Resource Adequacy (Load Forecast-Year Ahead)	Energy by month; peak demand by month for residential and non-residential; recorded and forecast customers by month for residential and non-residential	CEC	Annual
Resource Adequacy (Compliance Demonstration: System, Local, Flexible)	Recorded and forecast peak demand by month; recorded and forecast customer counts by month for residential, commercial, industrial, and agricultural	CEC/CPUC/CAISO	Monthly

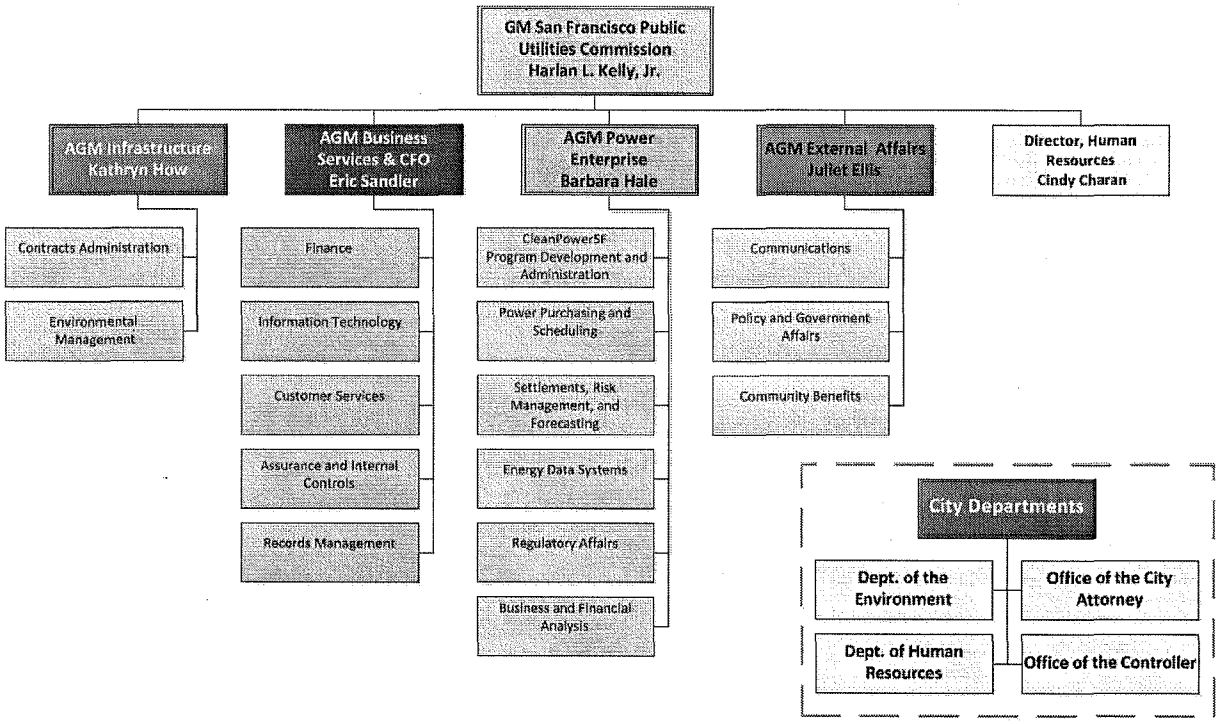
Report Name	Description	Reporting Agency	Frequency
Resource Adequacy (Year Ahead Compliance Demonstration Local/System--Follows April Forecast)	Contracted Net Qualifying Capacity for 100% of local and flexible RA obligation for each month of the following calendar year	CEC/CPUC/CAISO	Annual
AMI Data Privacy Audit	Independent audit and report on internal AMI data privacy and security practices	CPUC	Triennial
AMI Data Privacy Report	Reports on third party access to AMI data and any data security breaches	CPUC	Annual
Energy Storage Tier 2 Advice Letter	Reports on energy storage procurement and obligations	CPUC	Biennial
GHG Emission Performance Standard Advice Letter	Indicates new resources that contracted with to ensure low/no emissions	CPUC	Annual
Resource Adequacy (Price Data Request)	Data request for RA contract pricing and volumes	CPUC	As Requested
RPS Procurement Plan	Future looking RPS procurement plan	CPUC	Annual
RPS Report	Report to demonstrate compliance with the state Renewable Portfolio Standard	CPUC	Annual
EIA 826	Monthly electric utility sales and revenue report	U.S. DOE	Monthly
EIA 861	Annual Electric Power Industry Report (peak load, generation, electric purchases, sales, revenues, customer counts and DSM programs, green pricing NEM, and DG capacity)	U.S. DOE	Annual
WREGIS REC Retirement Report	All retired RECs whether Bucket 1, 2, 3 or grandfathered	WREGIS	Annual

Regulatory Proceedings

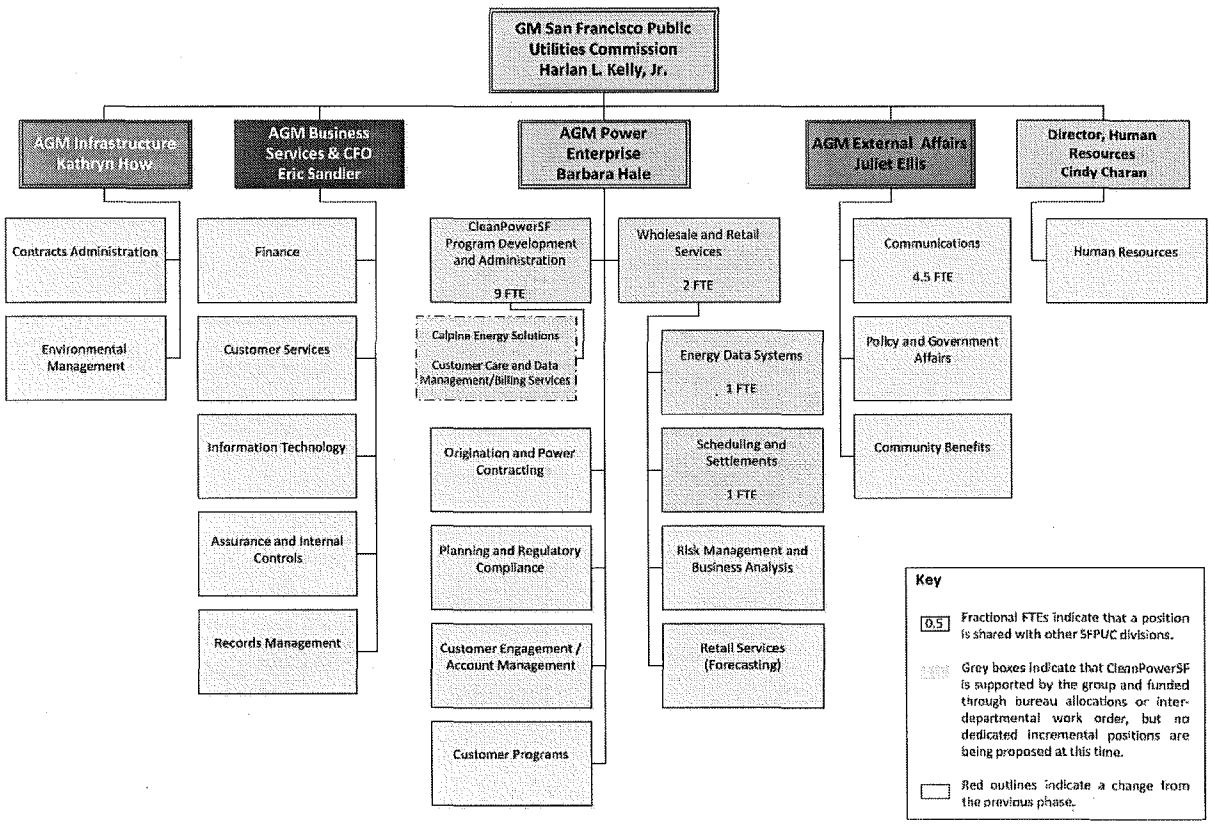
Title	Type	Proceeding	Level of Engagement
PG&E 2017 GRC	Cost Allocation	A.15-09-001	Active
PG&E GRC Phase 2	Cost Allocation	A.16-06-013	Active
PG&E Proposal for the Closure of Diablo Canyon	Cost Allocation	A.16-08-006	Active
2016-2017 Resource Adequacy	Standards	R.14-10-010	Active
IRP and Long-term Procurement Planning	Standards	R.16-02-007	Active
Further Development of RPS	Standards	R.15-02-020	Active
Integrated Distributed Energy Resources	Innovation	R.14-10-003	Active
Distribution Resource Plan Rulemaking	Innovation	R.14-08-013	Active

Title	Type	Proceeding	Level of Engagement
Power Source Disclosure Program	CEC	CEC	Active
PG&E's 2017 ERRA Forecast Application	Cost Allocation	A.16-06-003	Active
Implement AB 117	Standards	R.03-10-003	Active
RPS Implementation and Administration	Cost Allocation	R.08-08-009	Monitoring
Energy Storage Roadmap	Standards	R.15-03-011	Monitoring
PG&E Electric Vehicle Application	Innovation	A.15-02-009	Monitoring
Energy Efficiency Rulemaking	Efficiency	R.13-11-005	Monitoring
IOU CARE Applications 2015-2016	Efficiency	A.14-11-007, et al.	Monitoring
MCE Energy Efficiency Application	Efficiency	A.15-10-014	Monitoring
Regional Resource Adequacy	CAISO	CAISO	Monitoring
Integrated Energy Policy Report 2016	CEC	CEC	Monitoring
PG&E 2015 ERRA Forecast	Cost Allocation	A.14-05-024	Monitoring
Energy Upgrade California (Implementation)	Cost Allocation	A.12-08-007	Monitoring
Green Tariffs Shared Renewables	Cost Allocation	A.12-01-008	Monitoring
Successor to Existing NEM Tariffs	Standards	A.12-08-007	Monitoring
Distributed Generation Rulemaking	Standards	R.12-11-005	Monitoring
Residential Rate Rulemaking	Standards	R.12-06-013	Monitoring
Time-of-Use Rates	Standards	R.15-12-012	Monitoring
Renewables Portfolio Standard	Standards	R.11-05-005	Monitoring
Alternative Fuel Electric Vehicles	Innovation	R.13-11-007	Monitoring
Demand Response Rulemaking	Innovation	R.13-09-011	Monitoring
PG&E Energy Storage	Innovation	A.16-04-024	Monitoring
Water Energy Nexus	Efficiency	R.13-12-011	Monitoring
CAISO – Transmission Access Charge	CAISO	CAISO	Monitoring
Regional Grid Operator Governance Structure	CAISO	CAISO	Monitoring
Low Carbon Fuel Standard (LCFS)	CARB	CARB	Monitoring
Mandatory Reporting Requirement	CARB	CARB	Monitoring
Cap & Trade ("C&T")	CARB	CARB	Monitoring

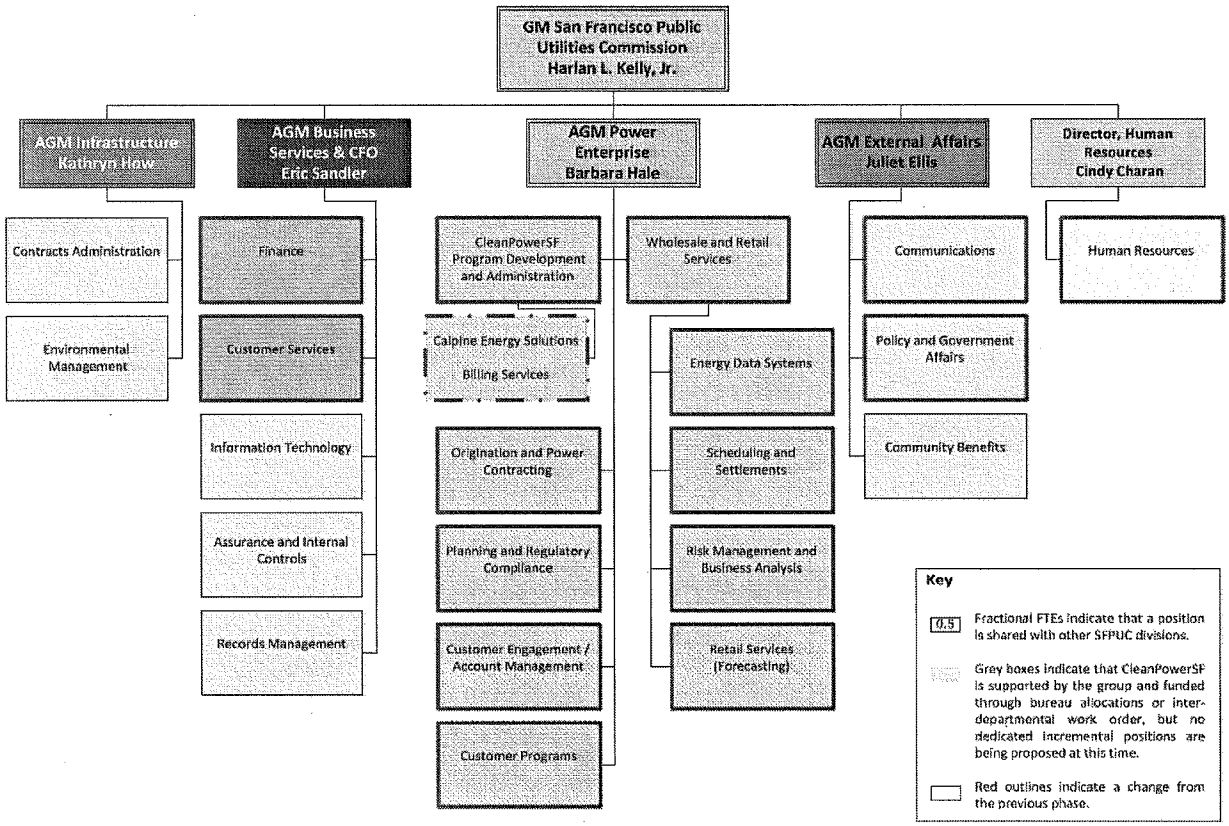
Appendix A-3: CleanPowerSF Organizational Chart



Appendix A-4: Current CleanPowerSF Staffing Levels



Appendix A-5: CleanPowerSF Staffing Levels at Full Scale



Appendix A-6: Proforma Customer Enrollment and Sales Assumptions

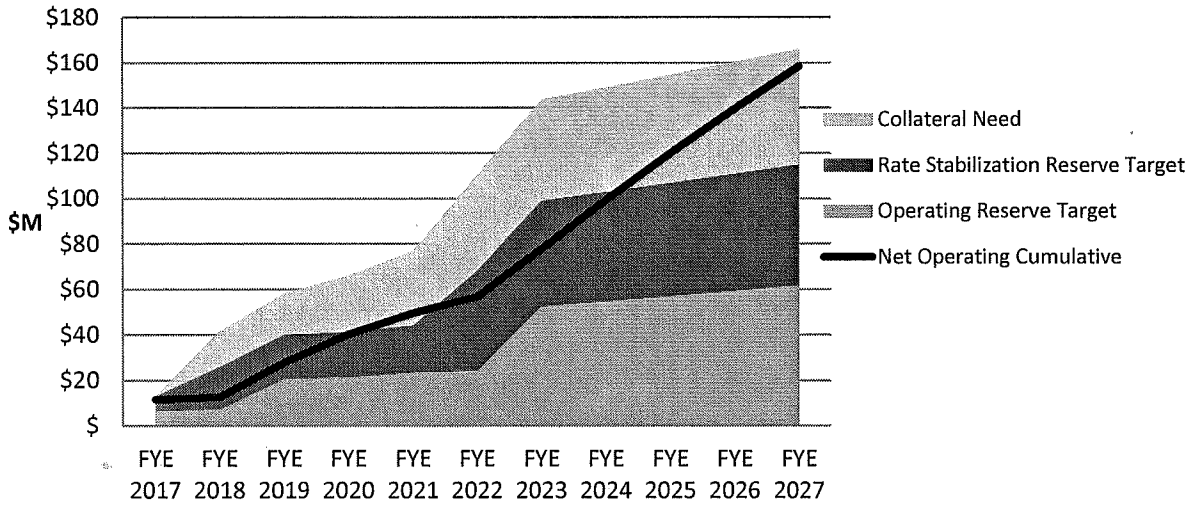
Variable	Scenario 1		Scenario 2	Scenario 3		Post-Phase / "Steady-State" Assumptions
	Reserve-based Expansion: Phase 2	Reserve-based Expansion: Phase 3	Single Phase Expansion (Phase 2 Only)	Two-Phase Expansion: Phase 2	Two-Phase Expansion: Phase 3	
Year	FYE 2019	FYE 2023	FYE 2018	FYE 2018	FYE 2019	N/A
Total Customers Enrolled	202,000 (Add'l 118,000)	394,000 (Add'l 192,000)	394,000 (Add'l 310,000)	243,000 (Add'l 159,000)	394,000 (Add'l 151,000)	
Non-Participation Rate (opt-out + 3% vacancy rate)	8%	7%	10%	8%	10%	None
Active Customer Count	185,000	368,000	357,000	223,000	362,000	Customer base grows by 0.5%
Annual Sales Volume (MWh)	1,768,000	3,777,000	3,682,000	2,364,000	3,732,000	Grows by 0.5%
SuperGreen Participation Rate	2.1% Residential: 2.5% Non-Res: 0.3%	4.1% Residential: 5.0% Non-Res: 2.0%	2.0% Residential: 2.5% Non-Res: 0.3%	2.3% Residential: 2.5% Non-Res: 0.3%	2.8% Residential: 3.5% Non-Res: 0.6%	Gradually increases annually to 5% by 2026
% *SuperGreen* Sales in First Year	1.2%	3.1%	1.1%	1.2%	1.7%	Gradually increases annually until 5% by 2026

Appendix A-7: Scenario 1 – 2015 Business Plan Phasing Strategy

Table A-7.1: Projected Sources and Uses (FYE 17 – FYE 22)

	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
SOURCES						
Green Sales Revenue	$33.5M	$42.6M	$123.3M	$126.8M	$130.5M	$134.5M
SuperGreen Sales Revenue	$0.4M	$0.5M	$1.8M	$2.7M	$3.6M	$4.2M
Uncollectibles	($0.2M)	($0.2M)	($0.6M)	($0.6M)	($0.7M)	($0.7M)
Total Sources	**$33.7M**	**$42.8M**	**$124.4M**	**$128.8M**	**$133.4M**	**$138.0M**
USES						
Energy Supply	$22.6M	$30.2M	$90.9M	$97.7M	$105.4M	$111.8M
Operating Costs	$5.8M	$9.5M	$15.9M	$16.3M	$16.8M	$18.4M
Debt	$0.8M	$2.0M	$2.0M	$2.0M	$1.3M	$0.0M
SuperGreen Programs/Projects	$0.1M	$0.1M	$0.3M	$0.4M	$0.5M	$0.6M
Contribution to Reserves	$4.4M	$1.1M	$15.3M	$12.4M	$9.4M	$7.2M
Total Uses	**$33.7M**	**$42.8M**	**$124.4M**	**$128.8M**	**$133.4M**	**$138.0M**
RESERVE BALANCES (TARGET)						
Operating Reserve	$6.8M	$7.2M	$20.7M	$21.3M	$23.4M	$24.1M
Contingency/Rate Stab. Reserve	$6.5M	$18.8M	$19.4M	$20.1M	$20.8M	$44.2M
RESERVE BALANCES (CUMULATIVE)						
Operating Reserve	$6.8M	$7.2M	$20.7M	$21.3M	$23.4M	$24.1M
Contingency/Rate Stab. Reserve	$4.7M	$5.3M	$7.1M	$18.8M	$20.8M	$32.6M
RESERVE TARGET MET?	NO	NO	NO	YES	YES	NO

Figure A-7.1: Projected Cumulative Net Margin and Reserves (Scenario 1)

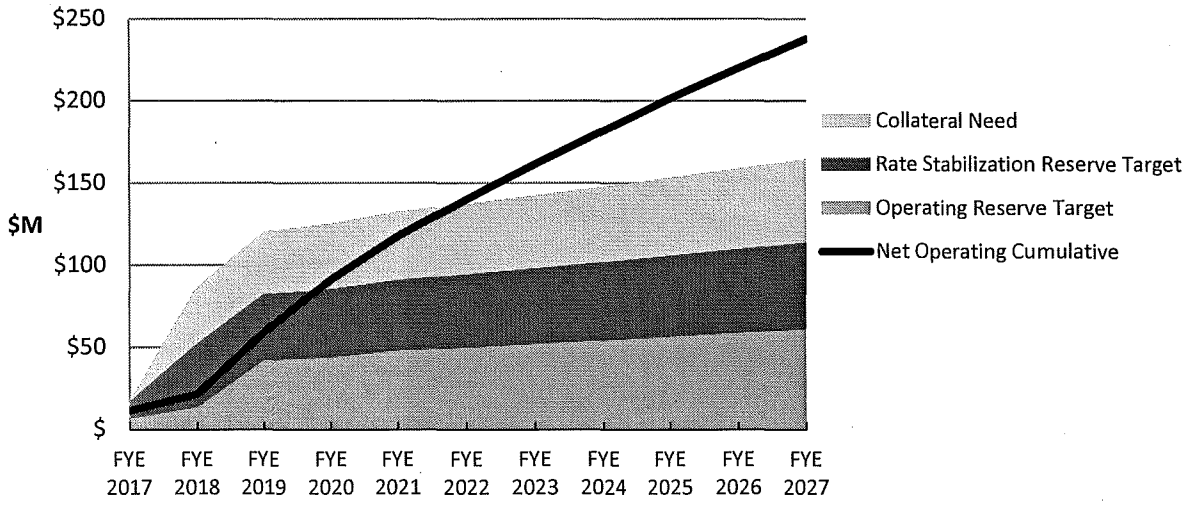


Appendix A-8: Scenario 2 – Single Phase Expansion Proforma Results

Table A-8.1: Projected Sources and Uses

	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
SOURCES						
Green Sales Revenue	$33.5M	$70.3M	$256.2M	$263.4M	$271.0M	$279.3M
SuperGreen Sales Revenue	$0.4M	$0.7M	$3.4M	$5.3M	$7.1M	$8.4M
Uncollectibles	($0.2M)	($0.4M)	($1.3M)	($1.3M)	($1.4M)	($1.4M)
Total Sources	**$33.7M**	**$70.6M**	**$258.3M**	**$267.4M**	**$276.7M**	**$286.3M**
USES						
Energy Supply	$22.6M	$45.5M	$190.5M	$203.4M	$219.0M	$232.6M
Operating Costs	$5.8M	$13.0M	$27.9M	$28.6M	$29.3M	$30.0M
Debt	$0.8M	$2.0M	$2.0M	$2.0M	$1.3M	$0.0M
SuperGreen Programs/Projects	$0.1M	$0.1M	$0.6M	$0.8M	$1.1M	$1.2M
Contribution to Reserves	$4.4M	$10.0M	$37.3M	$32.6M	$26.1M	$22.5M
Total Uses	**$33.7M**	**$70.6M**	**$258.3M**	**$267.4M**	**$276.7M**	**$286.3M**
RESERVE BALANCES (TARGET)						
Operating Reserve	$6.8M	$13.6M	$42.1M	$43.9M	$48.1M	$49.8M
Contingency/Rate Stab. Reserve	$10.6M	$38.9M	$40.3M	$41.7M	$43.2M	$44.7M
RESERVE BALANCES (CUMULATIVE)						
Operating Reserve	$6.8M	$13.6M	$42.1M	$43.9M	$48.1M	$49.8M
Contingency/Rate Stab. Reserve	$4.7M	$7.9M	$16.7M	$41.7M	$43.2M	$44.7M
RESERVE TARGET MET?	NO	NO	NO	YES	YES	YES

Figure A-8.1: Projected Cumulative Net Margin and Reserves (Scenario 2)

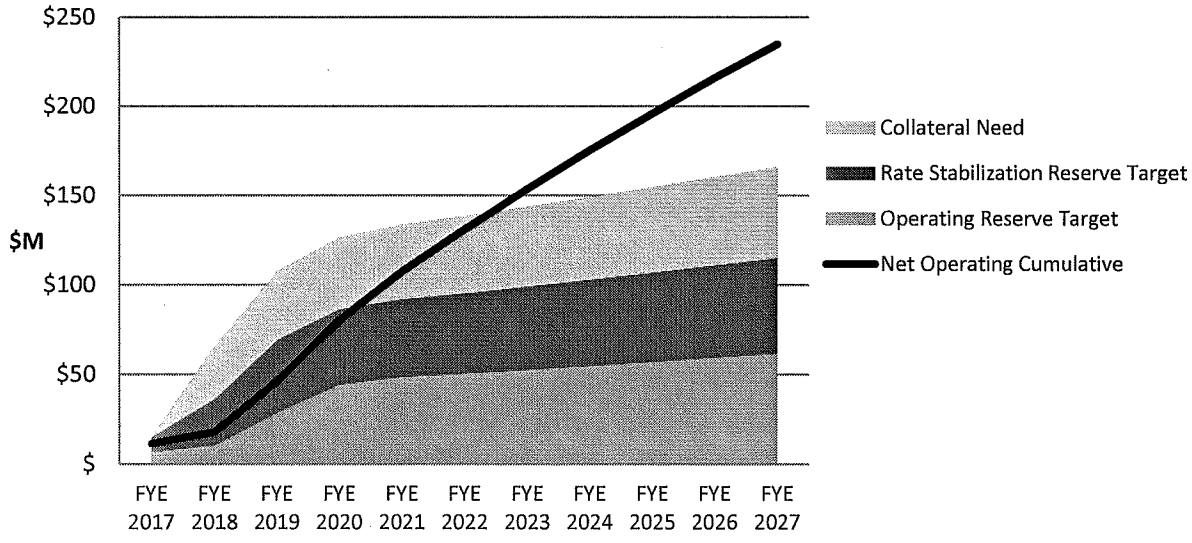


Appendix A-9: Scenario 3 – Two-Phase Expansion Proforma Results

Table A-9.1: Projected Sources and Uses

	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
SOURCES						
Green Sales Revenue	$33.5M	$55.3M	$170.1M	$266.0M	$273.7M	$282.1M
SuperGreen Sales Revenue	$0.4M	$0.6M	$2.5M	$5.4M	$7.2M	$8.5M
Uncollectibles	($0.2M)	($0.3M)	($0.9M)	($1.4M)	($1.4M)	($1.5M)
Total Sources	**$33.7M**	**$55.6M**	**$171.7M**	**$270.1M**	**$279.5M**	**$289.1M**
USES						
Energy Supply	$22.6M	$36.7M	$121.1M	$205.3M	$221.2M	$234.9M
Operating Costs	$5.8M	$10.4M	$19.8M	$28.1M	$28.7M	$29.4M
Debt	$0.8M	$2.0M	$2.0M	$2.0M	$1.3M	$0.0M
SuperGreen Programs/Projects	$0.1M	$0.1M	$0.4M	$0.9M	$1.1M	$1.2M
Contribution to Reserves	$4.4M	$6.5M	$28.4M	$33.9M	$27.3M	$23.6M
Total Uses	**$33.7M**	**$55.6M**	**$171.7M**	**$270.1M**	**$279.5M**	**$289.1M**
RESERVE BALANCES (TARGET)						
Operating Reserve	$6.8M	$10.5M	$28.6M	$44.3M	$48.5M	$50.3M
Contingency/Rate Stab. Reserve	$8.4M	$25.9M	$40.7M	$42.1M	$43.6M	$45.1M
RESERVE BALANCES (CUMULATIVE)						
Operating Reserve	$6.8M	$10.5M	$28.6M	$44.3M	$48.5M	$50.3M
Contingency/Rate Stab. Reserve	$4.7M	$7.4M	$17.8M	$36.0M	$43.6M	$45.1M
RESERVE TARGET MET?	NO	YES	YES	YES	YES	YES

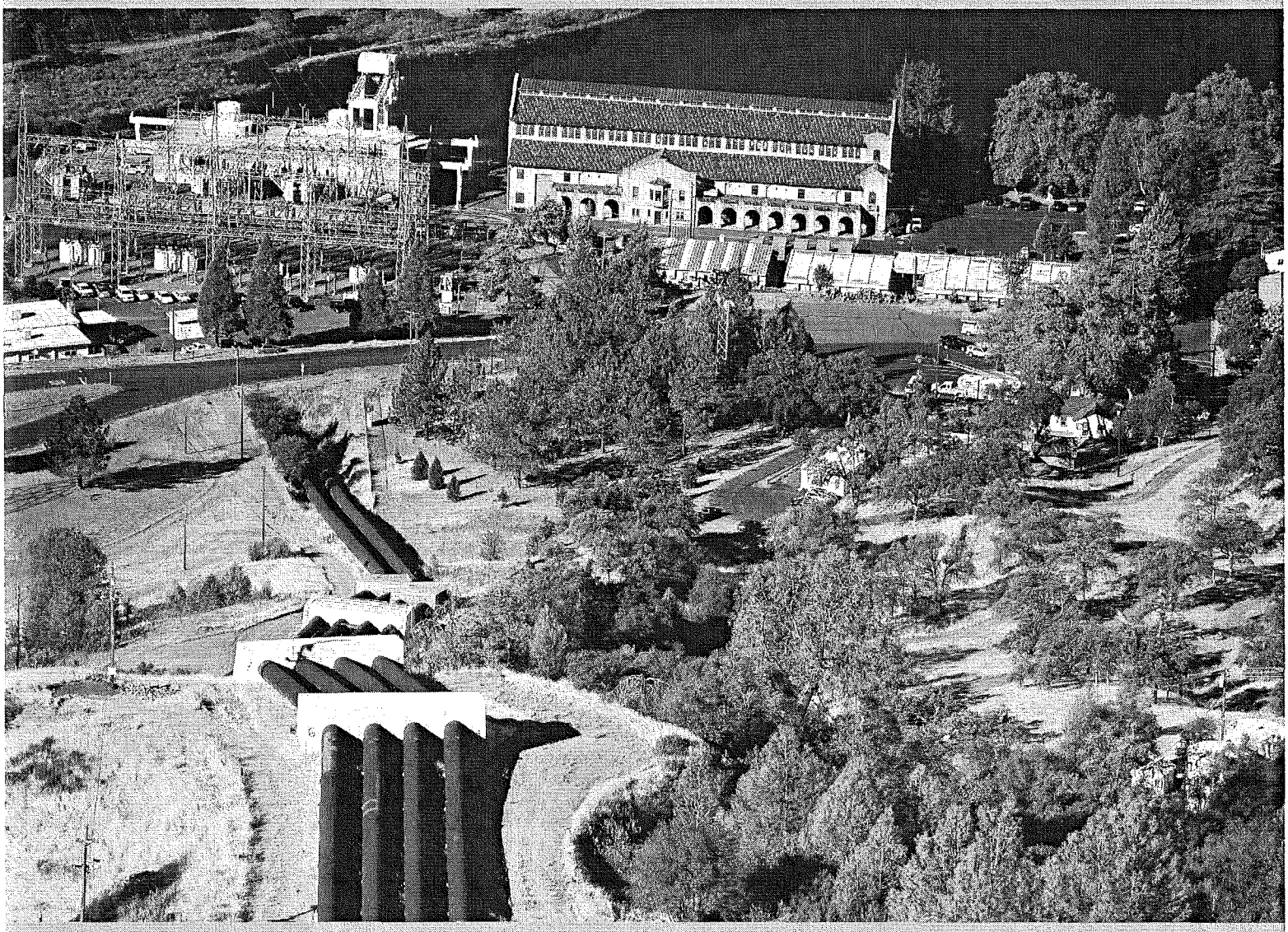
Figure A-9.1: Projected Cumulative Net Margin and Reserves (Scenario 3)



San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

HETCH HETCHY WATER & POWER & CLEANPOWERSF

Financial Statements June 30, 2017 and 2016
(With Independent Auditors' Report Thereon)



Generating clean energy for vital services.

HETCH HETCHY WATER AND POWER AND CLEANPOWERSF

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KPMG LLP
Suite 1400
55 Second Street
San Francisco, CA 94105

Independent Auditors' Report

The Honorable Mayor and Board of Supervisors
City and County of San Francisco:

We have audited the accompanying financial statements of the business-type activities and each fund of Hetch Hetchy Water and Power and Clean Power (Hetch Hetchy), an enterprise fund of the City and County of San Francisco, California (the City), as of and for the years ended June 30, 2017 and 2016, and the related notes to the financial statements, which collectively comprise the Hetch Hetchy's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Governmental Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the business-type activities of each fund of Hetch Hetchy, an enterprise fund of the City and County of San Francisco, California, as of June 30, 2017 and 2016, and the respective changes in financial position, and where applicable, cash flows thereof for the years then ended in accordance with U.S. generally accepted accounting principles.

Emphasis of Matter

As discussed in note 1, the financial statements of Hetch Hetchy are intended to present the financial position, the changes in financial position of only that portion of the City that is attributable to the transactions of Hetch Hetchy. They do not purport to, and do not, present fairly the financial position of the City as of June 30, 2017

and 2016, the changes in its financial position, or, where applicable, its cash flows for the years then ended in accordance with U.S. generally accepted accounting principles. Our opinions are not modified with respect to this matter.

Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis on pages 3 through 29 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise Hetch Hetchy's basic financial statements. The Supplemental Schedules for Combined Hetchy Power and CleanPowerSF are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The Supplemental Schedules for Combined Hetchy Power and CleanPowerSF is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Supplemental Schedules for Combined Hetchy Power and CleanPowerSF is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated November 8, 2017 on our consideration of Hetch Hetchy's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of Hetch Hetchy's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Hetch Hetchy's internal control over financial reporting and compliance.

KPMG LLP

San Francisco, California
November 8, 2017

This section presents management's analysis of San Francisco Hetch Hetchy Water and Power and CleanPowerSF Enterprise's (Hetch Hetchy or the Enterprise) financial condition and activities as of and for fiscal years ended June 30, 2017 and 2016. Management's Discussion and Analysis (MDA) is intended to serve as an introduction to the Enterprise's financial statements. This information should be read in conjunction with the audited financial statements that follow this section. All dollar amounts, unless otherwise noted, are expressed in thousands of dollars.

In May 2016, San Francisco Public Utilities Commission (SFPUC or the Commission) launched CleanPowerSF, a Community Choice Aggregation (CCA) program into operation, pooling the electricity demands of their residents and businesses for the purpose of buying electricity on behalf of those customers. CleanPowerSF provides San Francisco with new clean energy alternatives, with its objectives to reduce greenhouse gas emissions, and to provide the City and County of San Francisco's (the City) energy consumers with renewable electricity supplies at competitive rates. The SFPUC intends CleanPowerSF to be financially independent, with ability to set rates and charges with adequate revenues, and to issue debt to support its operations and future projects. CleanPowerSF is discretely presented as a fund of the Enterprise for the fiscal year ended 2017. In fiscal year 2016, CleanPowerSF was presented as part of Hetchy Power with additional analysis separately presented in the *Supplemental Schedules* of the report.

The information in this MDA is presented under the following headings:

- Organization and Business
- Overview of the Financial Statements
- Financial Analysis
- Capital Assets
- Debt Administration
- Rates and Charges
- Request for Information

Organization and Business

SFPUC is a department of the City that is responsible for the maintenance, operation, and development of three utility enterprises: Water, Wastewater, and Hetch Hetchy. The Enterprise was established as a result of the Raker Act of 1913, which granted water and power resource rights-of-way on the Tuolumne River in Yosemite National Park and the Stanislaus National Forest to the City. The Enterprise operates the Hetch Hetchy project, which provides both electricity generation and upcountry water service; and is engaged in the collection and conveyance of approximately 85% of the regional system's water supply and in the generation and transmission of electricity.

In normal rain years, 85% of San Francisco's drinking water starts out as snow falling on 459 square miles of watershed land in Yosemite National Park, and the City may supplement water supply from an additional 191 square miles of watershed in the Stanislaus National Forest during extremely dry years. As the snow melts, it collects in Hetch Hetchy's storage reservoirs. As water flows by gravity through over 150 miles of pipelines and tunnels, it turns the turbines in three hydroelectric powerhouses, generating approximately 1.4 billion kilowatt hours of electricity per year. The electricity travels over 160 miles of transmission and distribution lines from the upcountry powerhouses to the San Francisco Bay Area. Approximately 80% of the electricity generated by Hetchy Power is used to provide electric service to the City's municipal customers (including the San Francisco Municipal Transportation Agency, Recreation and Parks Department, the Port of San Francisco, San Francisco International Airport and its tenants, San Francisco General Hospital, City streetlights, Moscone Convention Center, and the Water and Wastewater Enterprises). The majority of the remaining 20% of electricity generated

(Continued)

is sold to other publicly owned utilities, such as the Turlock Irrigation District (TID) and Modesto Irrigation District (MID).

Hetch Hetchy

Hetch Hetchy provides reliable, high quality water and electric energy to the City and other customers, protects watershed resources in cooperation with Federal agencies, operates and maintains facilities to a high standard of safety and reliability, and maximizes revenue opportunities within approved levels of risk.

Hetch Hetchy, a stand-alone enterprise is comprised of three funds: 1) Hetch Hetchy Water (Hetchy Water) upcountry operations and water system; and 2) Hetch Hetchy Power (Hetchy Power), also referred to as the Power Enterprise, which is wholly contained within the Hetch Hetchy fund; and 3) CleanPowerSF, which is a new enterprise fund to aggregate the buying power of customers within San Francisco to purchase renewable energy sources or clean power, is reported as a separate fund of Hetch Hetchy. A number of the facilities are joint assets and used for both water and power generation.

Hetchy Water

For efficiency and to streamline the coordination of upcountry water and power operations, Hetchy Water operates upcountry and joint-asset facilities, managing resources in an environmentally responsible manner to a high standard of safety and reliability while meeting regulatory requirements. It is responsible for operating the Hetch Hetchy Reservoir, the main source of water for the Hetch Hetchy system. Hetchy Water operates, maintains, and improves water and power facilities, smaller dams and reservoirs, water transmission systems, power generation facilities, and power transmission assets, including transmission lines to the Newark substation. Hetchy Water delivers high quality water from upcountry downhill to the Bay Area while optimizing the resulting generation of clean hydropower as water is transported through the system. It maintains land and properties consistent with public health and neighborhood concerns.

Hetchy Power

The core business of Hetchy Power, as a municipal department, is to provide adequate and reliable supplies of electric power to meet the electricity needs of City and County of San Francisco's customers, and to offer, when available, power for the municipal loads and agricultural pumping demands of the MID and TID consistent with prescribed contractual obligations and federal law.

Hetchy Power's portfolio consists of hydroelectric generation, onsite solar at SFPUC and other City facilities, generation using bio-methane produced at SFPUC wastewater treatment facilities, and third-party purchases. Consistent with its commitment to the development of cleaner and greener power, and to address environmental concerns and community objectives, Hetchy Power continues to evaluate and expand its existing resource base to include additional renewables, distributed generation, demand management, and energy efficiency programs. As part of its mission and core functions, Hetchy Power provides reliable energy services at reasonable cost to customers, with attention to environmental effects and community concerns.

Hetch Hetchy Joint Water and Power

A portion of Hetch Hetchy's operating budget, capital program, and assets, provides benefit to both Hetchy Power and Hetchy Water. This is commonly referred to as joint costs and joint assets. Both operating and capital costs that jointly benefit both funds are allocated 55% to Hetchy Power and 45% to Hetchy Water, as has historically been done by the SFPUC.

(Continued)

CleanPowerSF

The core business of CleanPowerSF is to provide greener electricity generation to residential and commercial consumers in San Francisco. Through CleanPowerSF, SFPUC seeks to achieve several complementary goals, including affordable and competitive electricity generation rates, a diverse electricity resource portfolio that is comprised of renewable and other clean sources of supply, and high quality customer service.

Overview of the Financial Statements

Hetch Hetchy's financial statements include the following:

Statements of Net Position present information on Hetch Hetchy's assets, deferred outflows, liabilities, and deferred inflows as of year-end, with the difference reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of Hetch Hetchy is improving or worsening.

While the *Statements of Net Position* provide information about the nature and amount of resources and obligations at year-end, the *Statements of Revenues, Expenses, and Changes in Net Position* present the results of Hetch Hetchy's operations over the course of the fiscal year and information as to how the net position changed during the year. These statements can be used as an indicator of the extent to which Hetch Hetchy has successfully recovered its costs through user fees and other charges. All changes in net position are reported during the period in which the underlying event giving rise to the change occurs, regardless of the timing of the related cash flows. Thus, revenues and expenses are reported in these statements from some items that will result in cash flows in future fiscal periods, such as delayed collection of operating revenues and the expenses of employee earned but unused vacation leave.

The *Statements of Cash Flows* present changes in cash and cash equivalents resulting from operational, capital, non-capital, and investing activities. These statements summarize the annual flow of cash receipts and cash payments, without consideration of the timing of the event giving rise to the obligation or receipt and exclude non-cash accounting measures of depreciation or amortization of assets.

The *Notes to Financial Statements* provide information that is essential to a full understanding of the financial statements that is not presented on the face of the financial statements.

The *Supplemental Schedules* of this report are presented for the purpose of additional analysis for Hetchy Power and CleanPowerSF, and are not a required part of the financial statements.

Financial Analysis

Financial Highlights for Fiscal Year 2017

Hetch Hetchy

- Total assets of Hetch Hetchy exceeded total liabilities by $553,101, excluding interfund payable and receivable of $7,250 related to working capital loan between Hetchy Power and CleanPowerSF. Net position increased by $65,646 or 12.8% during the fiscal year. Capital assets, net of accumulated depreciation and amortization, increased by $40,472 or 10% to $444,721.

(Continued)

- Operating revenues, excluding interest and investment income, and other non-operating revenues, increased by $25,243 or 15.3% to $189,979.

- Operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, increased by $45,635 or 30.7% to $194,130.

Hetchy Water

- Total assets of Hetchy Water exceeded total liabilities by $157,035. Net position increased by $45,645 or 37.2% during the fiscal year. Capital assets, net of accumulated depreciation and amortization, increased by $13,864 or 12.2% to $127,731.

- Operating revenues, excluding interest and investment income, and other non-operating revenues, decreased by $3,592 or 9.3% to 35,150.

- Operating expenses, excluding other non-operating expenses, increased by $13,563 or 37.1% to $50,099.

Hetchy Power

- Total assets of Hetchy Power exceeded total liabilities by $387,848. Net position increased by $11,783 or 3% during the fiscal year. Capital assets, net of accumulated depreciation and amortization, increased by $26,608 or 9.2% to $316,990.

- Operating revenues, excluding interest and investment income, and other non-operating revenues, decreased by $5,032 or 4.0% to $120,962.

- Operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, increased by $4,976 or 4.4% to $116,935.

CleanPowerSF

- Total assets exceeded total liabilities by $8,218. CleanPowerSF had no capital assets, net of accumulated depreciation and amortization as of June 30, 2017.

- Operating revenues, excluding interest and investment income and other non-operating revenues were $33,867.

- Operating expenses, excluding interest expense were $27,096, of which $1,893 was electricity purchased from Hetchy Power.

(Continued)

Financial Highlights for Fiscal Year 2016

Hetch Hetchy

- Total assets of Hetch Hetchy exceeded total liabilities by $512,968. Net position increased by $25,680 or 5.3% during the fiscal year. Capital assets, net of accumulated depreciation and amortization, increased by $30,913 or 8.3% to $404,249.

- Charges for services, excluding interest and investment income, rental income, and other non-operating revenues increased by $16,902 or 11.5% to $164,474. Operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, increased by $4,572 or 3.2% to $148,495.

Hetchy Water

- Total assets of Hetchy Water exceeded total liabilities by $122,870. Net position increased by $2,300 or 1.9% during the fiscal year. Capital assets, net of accumulated depreciation and amortization, increased by $9,537 or 9.1% to $113,867.

- Charges for services, excluding interest and investment income, rental income, and other non-operating revenues, decreased by $107 or 0.3% to $38,624 due to decreased water assessment fees of $200 or 0.5% from the Water Enterprise to fund upcountry water-related costs, offset by an increase of $93 mainly due to 10% average rate increase for Lawrence Livermore National Laboratory and Groveland Community Services.

- Operating expenses, excluding other non-operating expenses, decreased by $2,165 or 5.6% to $36,536 due to decrease of $2,715 in projects spending for Moccasin Facilities Upgrade and Rim Fire projects, $386 in judgments and claims based on actuarial estimates, $228 in depreciation, and $130 in materials and supplies for water sewage treatment supplies and electrical supplies. These decreases were offset by increases of $626 in personnel services mainly due to cost of living adjustments and pension costs, $485 increase in taxes, licenses, and permits related to national park service, $108 increase in engineering services and $75 increase in services provided by other departments mainly from increased bureau support costs.

Hetchy Power

- Total assets of Hetchy Power exceeded total liabilities by $390,098. Net position increased by $23,380 or 6.4% during the fiscal year. Capital assets, net of accumulated depreciation and amortization, increased by $21,376 or 7.9% to $290,382.

- Charges for services, excluding interest and investment income, rental income, and other non-operating revenues, increased by $17,009 or 15.6% to $125,850. The increase was due to increase in sales of $9,307 or 275,778 MWh to non-City customers as a result of sales of excess power, and $4,356 from City Departments due to 3% adopted average rate increase coupled with increase in consumption of 3%. The remaining $3,346 increase in revenues was from two months of electricity sales to residential and commercial consumers through CleanPowerSF in the amount of $3,749 net of $403 sales between Hetchy Power and CleanPowerSF.

(Continued)

- Operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, increased by $6,737 or 6.4% to $111,959 due to increases of $3,526 in purchased electricity, $2,970 in transmission and distribution power costs mainly due to $2,349 costs incurred by CleanPowerSF, $2,545 in capital project spending for Transmission and Distribution System and Transbay Transit Center projects, $1,418 in services provided by other departments mainly from increased bureau support costs and legal services provided by the City Attorney, $810 in materials and electrical supplies, $392 in personnel services mainly due to cost of living adjustments and pension costs, and $350 higher taxes, licenses, and permits related to national park service. These increases were offset by decreases of $2,359 in contractual services primarily due to closure of the energy bank account with Pacific Gas and Electric Company (PG&E) in prior year, $1,769 in judgments and claims mainly due to prior year one time settlement of franchise tax fees on interconnection agreement, and $1,146 decrease in depreciation.

(Continued)

Financial Position

The following tables summarize Hetch Hetchy's changes in net position.

Table 1A - Consolidated Hetch Hetchy
Comparative Condensed Net Position
June 30, 2017, 2016, and 2015

	2017 *	2016 **	2015	2017-2016 Change	2016-2015 Change
Hetch Hetchy					
Total assets:					
Current and other assets	$ 336,106	270,562	273,159	65,544	(2,597)
Capital assets, net of accumulated depreciation and amortization	444,721	404,249	373,336	40,472	30,913
Total assets	780,827	674,811	646,495	106,016	28,316
Deferred outflows of resources:					
Pensions	28,132	8,324	6,883	19,808	1,441
Total deferred outflows of resources	28,132	8,324	6,883	19,808	1,441
Liabilities:					
Current liabilities:					
Bonds	2,437	1,692	1,332	745	360
Certificates of participation	331	315	299	16	16
Commercial paper	20,058	—	—	20,058	—
Other liabilities	28,042	29,205	23,290	(1,163)	5,915
Subtotal current liabilities	50,868	31,212	24,921	19,656	6,291
Long-term liabilities:					
Bonds	55,463	58,418	58,843	(2,955)	(425)
Certificates of participation	14,607	14,966	15,313	(359)	(347)
Other liabilities	106,788	57,247	48,967	49,541	8,280
Subtotal long-term liabilities	176,858	130,631	123,123	46,227	7,508
Total liabilities:					
Bonds	57,900	60,110	60,175	(2,210)	(65)
Certificates of participation	14,938	15,281	15,612	(343)	(331)
Commercial paper	20,058	—	—	20,058	—
Other liabilities	134,830	86,452	72,257	48,378	14,195
Total liabilities	227,726	161,843	148,044	65,883	13,799
Deferred inflows of resources:					
Related to pensions	2,973	8,678	18,400	(5,705)	(9,722)
Total deferred inflows of resources	2,973	8,678	18,400	(5,705)	(9,722)
Net position:					
Net investment in capital assets	388,412	369,764	345,814	18,648	23,950
Restricted for debt service	485	306	302	179	4
Restricted for capital projects	—	1,409	4,434	(1,409)	(3,025)
Unrestricted	189,363	141,135	136,384	48,228	4,751
Total net position	$ 578,260	512,614	486,934	65,646	25,680

*Eliminated interfund payable and receivable of $7,250 working capital loan between Hetchy Power and CleanPowerSF in fiscal year 2017.
**Eliminated interfund payable and receivable of $8,000 working capital loan between Hetchy Power and CleanPowerSF in fiscal year 2016.

(Continued)

Table 1B - Hetchy Water
Comparative Condensed Net Position
June 30, 2017, 2016, and 2015

Hetchy Water	2017	2016	2015	2017-2016 Change	2016-2015 Change
Total assets:					
Current and other assets	$ 80,350	37,195	46,271	43,155	(9,076)
Capital assets, net of accumulated depreciation and amortization	127,731	113,867	104,330	13,864	9,537
Total assets	208,081	151,062	150,601	57,019	461
Deferred outflows of resources:					
Pensions	12,659	3,746	3,097	8,913	649
Total deferred outflows of resources	12,659	3,746	3,097	8,913	649
Liabilities:					
Current liabilities	6,293	4,638	5,493	1,655	(855)
Long-term liabilities	44,753	23,554	19,514	21,199	4,040
Total liabilities	51,046	28,192	25,007	22,854	3,185
Deferred inflows of resources:					
Related to pensions	1,338	3,905	8,280	(2,567)	(4,375)
Total deferred inflows of resources	1,338	3,905	8,280	(2,567)	(4,375)
Net position:					
Net investment in capital assets	127,731	113,867	104,330	13,864	9,537
Restricted for capital projects	—	1,409	4,434	(1,409)	(3,025)
Unrestricted	40,625	7,435	11,647	33,190	(4,212)
Total net position	$ 168,356	122,711	120,411	45,645	2,300

Table 1C - Hetchy Power
Comparative Condensed Net Position
June 30, 2017, 2016, and 2015

Hetchy Power	2017 *	2016 **	2015	2017-2016 Change	2016-2015 Change
Total assets:					
Current and other assets	$ 243,406	233,367	226,888	10,039	6,479
Capital assets, net of accumulated depreciation and amortization	316,990	290,382	269,006	26,608	21,376
Total assets	560,396	523,749	495,894	36,647	27,855
Deferred outflows of resources:					
Pensions	15,473	4,578	3,786	10,895	792
Total deferred outflows of resources	15,473	4,578	3,786	10,895	792
Liabilities:					
Current liabilities:					
Bonds	2,437	1,692	1,332	745	360
Certificates of participation	331	315	299	16	16
Commercial paper	20,058	—	—	20,058	—
Other liabilities	17,717	24,567	17,797	(6,850)	6,770
Subtotal current liabilities	40,543	26,574	19,428	13,969	7,146
Long-term liabilities:					
Bonds	55,463	58,418	58,843	(2,955)	(425)
Certificates of participation	14,607	14,966	15,313	(359)	(347)
Other liabilities	61,935	33,693	29,453	28,242	4,240
Subtotal long-term liabilities	132,005	107,077	103,609	24,928	3,468
Total liabilities:					
Bonds	57,900	60,110	60,175	(2,210)	(65)
Certificates of participation	14,938	15,281	15,612	(343)	(331)
Commercial paper	20,058	—	—	20,058	—
Other liabilities	79,652	58,260	47,250	21,392	11,010
Total liabilities	172,548	133,651	123,037	38,897	10,614
Deferred inflows of resources:					
Related to pensions	1,635	4,773	10,120	(3,138)	(5,347)
Total deferred inflows of resources	1,635	4,773	10,120	(3,138)	(5,347)
Net position:					
Net investment in capital assets	260,681	255,897	241,484	4,784	14,413
Restricted for debt service	485	306	302	179	4
Unrestricted	140,520	133,700	124,737	6,820	8,963
Total net position	$ 401,686	389,903	366,523	11,783	23,380

*Included $7,250 working capital loan to CleanPowerSF

**CleanPowerSF was presented as part of Hetchy Power in fiscal year 2016.

(Continued)

Table 1D - CleanPowerSF
Condensed Net Position
June 30, 2017

	2017	
CleanPowerSF		
Total assets:		
Current and other assets	$ 19,600	
Total assets	19,600	
Liabilities:		
Current liabilities	6,032	
Long-term liabilities	5,350	
Total liabilities	11,382	*
Net position:		
Unrestricted	8,218	
Total net position	$ 8,218	

*Included $7,250 working capital loan from Hetchy Power.

Net Position, Fiscal Year 2017

Hetch Hetchy

Hetch Hetchy's net position of $578,260 increased by $65,646 or 12.8% during the year (see Table 1A). Current and other assets were $336,106, a $65,544 or 24.2% increase from prior year with elimination of a $7,250 working capital loan from Hetchy Power to CleanPowerSF. The increases were attributed to $67,896 in restricted and unrestricted cash and investment with City Treasury and outside City Treasury mainly explained by $60,000 transfer from the Water Enterprise to fund upcountry water projects, and $20,058 in commercial paper issuance for Hetchy Power, $420 in vendor prepayments, $193 in other receivables for Distributed Antenna System (DAS), and $201 increase in interest receivables due to higher average cash balance.

These increases were offset by decreases of $1,566 in prior year collections from the Federal Emergency Management Agency (FEMA) and the State Office of Emergency Services for the Rim Fire projects, $1,013 in receivables due from other City departments, as explained by $748 repayments from Mayor's Energy Conservation Account, $549 payment from Water Enterprise for DAS, $103 repayment from the Wastewater Enterprise for the Living Machine System, offset by $387 increase in due from CleanPowerSF for electricity purchased from Hetchy Power.

Other decreases included $259 in receivables for various custom work projects, $75 in inventory due to more issuances than purchases, $17 from advance paid to the Recreation and Parks Department for the Civic Center Garage, and $5 in travel advance. Charges for services receivables decreased by $231, including $2,540 decreased electricity sales primarily from Turlock Irrigation District (TID) due to no sales of excess power and $256 in decreased water consumption from Lawrence Livermore National Laboratory, offset by an increase of $2,565 in charges for services receivable from CleanPowerSF.

Capital assets, net of accumulated depreciation and amortization, increased by $40,472 or 10% to $444,721 primarily due to additions of facilities, improvements, machinery, and equipment for Mountain Tunnel Improvement, Moccasin Facilities New Construction, San Joaquin Pipeline Rehabilitation, and Transbay Transit Center. Deferred outflows of resources increased by $19,808 due to pensions based on actuarial report.

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Total liabilities increased by $65,883 or 40.7%, to $227,726. A working capital loan of $7,250 due to Hetchy Power from CleanPowerSF was eliminated upon consolidation. As of June 30, 2017, outstanding debts increased by $17,505 attributable to $20,058 Hetchy Power commercial paper issuance in February 2017, offset by $2,011 in principal repayments, $288 redemption of 2012 New Clean Renewable Energy Bonds (NCREBs), and $254 in amortization of premium and discount. Other liabilities of $134,830, such as payables to vendors, contractors, and other government agencies for goods and services under contractual agreements, increased by $48,378 or 56%. Net pension liability increased by $42,538 due to investment losses, the Appeals Court's elimination of the full funding requirement for certain members, and the impact of the revised demographic assumptions and change in discount rate. See Note 10(a), Pension Plan, for additional details.

Other increases included $4,157 in restricted liabilities for bond fund-projects, $3,053 in other post-employment benefit obligations as a result of higher actuarially determined annual required contribution, $2,891 in unearned revenues, including $1,189 in grant advance received from FEMA and the State Office of Emergency Services for the Rim Fire projects, $566 in credits due to other City departments for work order billings, $391 in credits to MID and TID due to billing true up, $377 in deposits for various custom work projects, $232 in deposits from DAS and the Hunters Point Shipyard project, $130 in utility taxes payable, and $15 in credits for CleanPowerSF retail and commercial customers, offset by a $9 decrease in prepaid rent.

General liability increased by $577 based on actuarial estimates, and due from CleanPowerSF to Hetchy Power increased by $387. The increases were offset by a decrease of $5,224 in outstanding accounts payable to vendors and contractors for services, and a decrease of $1 in bond and loan interest payable. Deferred inflows of resources decreased by $5,705 due to pensions based on actuarial report.

Hetchy Water

Hetchy Water's net position of $168,356 increased by $45,645 or 37.2% resulting from increases of $57,019 in total assets, $8,913 in deferred outflows of resources and a decrease in deferred inflows of resources of $2,567, offset by $22,854 increases in total liabilities (see Table 1B). Increase in current and other assets of $43,155 was attributed to $43,126 increase in restricted and unrestricted cash and investment with City Treasury due primarily to $60,000 transfer from the Water Enterprise to fund upcountry projects, and $336 in vendor prepayments. These increases were offset by decreases of $256 in charges for service receivables primarily from decreased consumption for Lawrence Livermore National Laboratory, $33 in inventory from more issuances than purchases, $14 in interest receivables from pooled investment resulting from lower average cash balance and $4 from advance paid to the Recreation and Parks Department for the Civic Center Garage.

Capital assets, net of accumulated depreciation and amortization, increased by $13,864 or 12.2% to $127,731 primarily due to increases in facilities, improvements, machinery, and equipment for Mountain Tunnel Improvement, Moccasin Facilities New Construction, and San Joaquin Pipeline Rehabilitation. Deferred outflows of resources increased by $8,913 due to pensions based on actuarial report.

Hetchy Water's total liabilities increased by $22,854 or 81.1% to $51,046, as explained by increases of $19,142 in net pension liability due to investment losses, the Appeals Court's elimination of the full funding requirement for certain members, and the impact of the revised demographic assumptions and change in discount rate, $3,767 increase in restricted liabilities related to Water bond-funded upcountry projects, $1,335 in other post-employment benefit obligations as a result of higher actuarially determined annual required contribution, $539 in grant advance received from FEMA and the State Office of Emergency Services for the Rim Fire projects, and $233 in general liability based on actuarial estimates. The increases were offset by decreases of $2,124 in outstanding payables to vendors and contractors for services, and $35 in employee related benefits including workers' compensation, vacation and sick leave, and accrued payroll, and $3 decrease in prepaid rent. Deferred inflows of resources decreased by $2,567 due to pensions based on actuarial report.

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Hetchy Power

Hetchy Power's net position of $401,686 increased by $11,783 or 3.0% resulting from an increase of $36,647 in total assets, $10,895 in deferred outflows of resources and a decrease in deferred inflows of resources of $3,138, offset by an increase of $38,897 in total liabilities (see Table 1C). CleanPowerSF is presented as part of Hetchy Power in fiscal year 2016. Current and other assets increased by $10,039 or 4.3%, due primarily to increases of $10,722 in restricted and unrestricted cash and investment with City Treasury and outside City Treasury due to $20,058 commercial paper issuance, offset by $8,174 CleanPowerSF cash and investments with City Treasury from prior year. A working capital loan of $7,250 due to Hetchy Power from CleanPowerSF was eliminated upon consolidation. Interest receivables increased by $198 due to higher averaged cash balance during fiscal year 2017, including $8 from CleanPowerSF in prior year. Other increases included $193 in other receivables for DAS and $77 in vendor prepayments.

Other decreases included $5,503 in charges for services receivables primarily due to $2,963 receivables from CleanPowerSF electricity sales in prior year, and $2,540 decreased electricity sales due to no sales of excess power to TID; $1,566 in prior year collections from the FEMA and the State Office of Emergency Services for the Rim Fire projects, $259 receivables for various custom work projects, $42 in inventory due to more issuances than purchases, $13 from advance paid to the Recreation and Parks Department for the Civic Center Garage, and $5 in travel advance. Receivables due from other City departments decreased by $1,013 as explained by $748 repayments to Mayor's Energy Conservation Account, $549 payment from Water Enterprise for DAS, $103 repayment from the Wastewater Enterprise for the Living Machine System, offset by $387 increase in receivables for electricity sales from Hetchy Power to CleanPowerSF.

Capital assets, net of accumulated depreciation and amortization, increased by $26,608 or 9.2% to $316,990 primarily due to additions of facilities, improvements, machinery, and equipment for Mountain Tunnel Improvement, Moccasin Facilities New Construction, and Transbay Transit Center. Deferred outflows of resources increased by $10,895 due to pensions based on actuarial report.

Hetchy Power's total liabilities of $172,548 increased by $38,897 or 29.1%. As of June 30, 2017, outstanding debts increased by $17,505 attributable to $20,058 commercial paper issuance in February 2017, offset by $2,011 in principal repayments, $288 redemption of 2012 NCREBs, and $254 in amortization of premium and discount. Other liabilities of $79,652, such as payables to vendors, contractors, and other government agencies for goods and services under contractual agreements, increased by $21,392 or 36.7%. Net pension liability increased by $23,396 due to investment losses, the Appeals Court's elimination of the full funding requirement for certain members, and the impact of the revised demographic assumptions and change in discount rate, $2,250 increase in unearned revenues, including $650 in grant advance received from FEMA and the State Office of Emergency Services for the Rim Fire projects, $566 in credits due to other City departments for work order billings, $391 in credits to MID and TID due to billing true up, $377 in deposits for various custom work projects, $232 in deposits from DAS and Hunters Point Shipyard Project, $40 in utility taxes payable, offset by a $6 decrease in prepaid rent. Other increases included $1,631 in other post-employment benefit obligations as a result of higher actuarially determined annual required contribution, $390 in restricted liabilities for bond fund-projects, and $344 in general liability based on actuarial estimates.

The increases in other liability were offset by decreases of $6,580 in accounts payable to vendors and contractors for services, of which $1,722 was related to CleanPowerSF accounts payable in prior year, and $38 in employee related benefits including workers' compensation, vacation and sick leave, and accrued payroll, and slight decrease of $1 in bond and loan interest payable. Deferred inflows of resources decreased by $3,138 due to pensions based on actuarial report.

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CleanPowerSF

CleanPowerSF's net position of $8,218 included $19,600 in total assets offset by $11,382 in total liabilities (see Table 1D). Total assets of $19,600 comprised of $14,048 in cash and investment with City Treasury from electricity sales, $5,528 in charges for services receivables from billings, $17 in interest receivables and $7 in vendor prepayment.

Total liabilities of $11,382 comprised of $7,250 working capital loan from Hetchy Power, $3,480 in accounts payable, $387 in payable to Hetchy Power for purchased electricity, $90 in utility tax and electric energy surcharge tax payable from increased electricity sales, $87 in other post-employment benefit obligations as a result of actuarially determined annual required contribution, $73 in employee related benefits including vacation, sick leave and accrued payroll and $15 in unearned revenues for credits to retail and commercial customers.

Net Position, Fiscal Year 2016

Hetch Hetchy

Hetch Hetchy's net position of $512,614 increased by $25,680 or 5.3% during the year (see Table 1A). Current and other assets were $270,562, a $2,597 or 1.0% decrease from prior year due to decreases of $7,852 in restricted and unrestricted cash and investment with City Treasury and outside City Treasury as explained by $7,559 in principal and interest repayments and capital project spending, $514 decrease in receivables due from other City departments attributable to $1,094 repayments from Mayor's Energy Conservation Account, and $102 repayment from Wastewater Enterprise for the Living Machine System, offset by $549 increase in due from Water Enterprise for Distributed Antenna System, and $133 increase in due from Department of Public Works for Hunters Point Shipyard Project, and $4 decrease from advance paid to the Recreation and Parks Department for the Civic Center Garage and prepayments to vendors. These decreases were offset by increase of $5,412 in charges for services receivables including $2,963 from CleanPowerSF electricity sales, $1,376 from MID and TID due to increased sales of excess power, $955 from San Francisco Port tenants and Parking Garage due to lower collection, $118 from water upcountry customers for water sales due to average rate increase of 10%, $215 from custom work receivables for the Hunters Point Shipyard and Candlestick Point projects, $92 inventory from more purchases than issuances, and $54 in interest receivable as a result of higher cash balance.

Capital assets, net of accumulated depreciation and amortization, increased by $30,913 or 8.3% to $404,249 primarily due to additions of facilities, improvements, machinery, and equipment for Moccasin Facilities Upgrade, Transmission and Distribution System, Lower Cherry Aqueduct, Streetlight Replacement, and San Joaquin Pipeline Rehabilitation. Deferred outflows of resources increased by $1,441 due to pensions based on actuarial report.

Total liabilities of current and non-current obligations increased by $13,799 or 9.3%. As of June 30, 2016, outstanding bonds payable of $60,110 and certificates of participation of $15,281 decreased by $396 due to $2,523 redemption of 2012 New Clean Renewable Energy Bonds (NCREBs), $1,722 principal repayments, and $251 amortization of premium and discount for certificates of participation and outstanding debts, offset by $4,100 issuance of 2015 NCREBs in October 2015. Other liabilities of $86,452, such as payables to vendors, contractors, and other government agencies for goods and services under contractual agreements, increased by $14,195 or 19.6%. Increases included $6,337 in net pension liability based on actuarial report, $3,028 increase in deposits from the Hunters Point Shipyard project and Distributed Antenna System master license agreements, $2,582 increase in restricted liabilities related to water upcountry bond-funded projects, Clean Renewable Energy Bonds (CREBs) funded projects and 2015 Series B revenue bond funded projects, $2,324 in other post-employment benefit obligations as a result of higher actuarially determined annual required contribution, $1,722

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payable for CleanPowerSF purchase of electricity, $1,109 in employee related benefits including workers' compensation, vacation and sick leave, and accrued payroll, $108 in interest payable of 2015 Series AB power revenue bonds and 2015 NCREBs, $46 in prepayments from custom work projects, and $20 in grant advance received from the Federal Emergency Management Agency and the State Office of Emergency Services for the Rim Fire Projects. These increases were offset by $1,525 decrease in payables to vendors and contractors for services, $1,474 in general liability based on actuarial estimates, and $82 decrease as a result of remittance of electrical energy surcharge tax to the State Board of Equalization. Deferred inflows of resources decreased by $9,722 due to pensions based on actuarial report.

Hetchy Water

Hetchy Water's net position of $122,711 increased by $2,300 or 1.9% resulting from an increase of $1,110 in total assets and deferred outflows of resources, and a decrease of $1,190 in liabilities and deferred inflows of resources (see Table 1B). Contributing to the increase of $461 in total assets was $9,537 increase in capital assets, net of accumulated depreciation and amortization offset by $9,203 decrease in restricted and unrestricted cash and investment with City Treasury primarily due to water infrastructure projects spending, $16 decrease in advances paid to the Recreation and Parks Department for the Civic Center Garage and prepayments to vendors and $16 decrease in interest receivable from pooled investment due to lower average cash balance, offset by $118 increase in charges for service receivables due to average rate increase of 10% mainly from Lawrence Livermore National Laboratory and Groveland Community Services, and $41 increase in inventory from more purchases than issuances. Capital assets, net of accumulated depreciation and amortization, increased by $9,537 or 9.1% to $113,867 primarily due to increased facilities, improvements, machinery, and equipment for Lower Cherry Aqueduct, San Joaquin Pipeline Rehabilitation, and Moccasin Facilities Upgrade. Deferred outflows of resources increased by $649 due to pensions based on actuarial report.

Hetchy Water's liabilities increased by $3,185 or 12.7%, as explained by increases of $2,851 in net pension liability, $1,046 in other post-employment benefit obligations as a result of higher actuarially determined annual required contribution, $371 increase in employee related benefits including workers' compensation, vacation and sick leave, and accrued payroll, and $69 increase in restricted liabilities related to Water bond-funded upcountry projects, offset by $1,103 decrease in payables to vendors and contractors for services, and $49 in general liability based on actuarial estimates. Deferred inflows of resources decreased by $4,375 due to pensions based on actuarial report.

Hetchy Power

Hetchy Power's net position of $389,903 increased by $23,380 or 6.4% resulting from increases in total assets of $27,855, $792 in deferred outflows of resources and decrease in deferred inflows of resources of $5,347 offset by $10,614 increase in total liabilities (see Table 1C). Increase in Hetchy Power's net position included $1,424 unrestricted net position from CleanPowerSF (see Supplemental Schedules for details). The increase in current and other assets of $6,479 was primarily due to increase in charges for services receivables of $2,963 from CleanPowerSF electricity sales and $2,331 from MID and TID due to increased sales of excess power, San Francisco Port tenants due to lower collection, $1,351 in restricted and unrestricted cash and investment with City Treasury and outside City Treasury as explained by $5,935 from Power System Impact Mitigation projects, $4,100 from issuance of 2015 NCREBs in October 2015 and $2,755 deposits for the Hunters Point Shipyard project, offset by $7,559 principal and interest repayments and $3,880 project spending. Other increases included $215 in prepayment for custom work projects, $70 increase in interest receivables as a result of higher cash balance, $51 in inventory from more purchases than issuances, and $12 increase mainly from prepayments to vendors. These increases were offset by decrease of $514 in receivables due from other City departments attributable to $1,094 repayments to Mayor's Energy Conservation Account and $102 repayment from the Wastewater Enterprise for Living Machine System, offset by $549 increase in due from Water Enterprise for

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Distributed Antenna System and $133 increase in due from Department of Public Works for Hunters Point Shipyard Project.

Capital assets, net of accumulated depreciation and amortization, increased by $21,376 or 7.9% to $290,382 primarily due to increased facilities, improvements, machinery, and equipment for Transmission and Distribution System and Moccasin Facilities Control and Server Building projects. Deferred outflows of resources increased by $792 due to pensions based on actuarial report.

Hetchy Power's total liabilities of $133,651 increased by $10,614 or 8.6%. Increases in other liabilities of $11,010 included $3,486 in net pension liability based on actuarial report, $3,028 increase in deposits from Hunters Point Shipyard project and Distributed Antenna System master license agreement, $2,513 increase in restricted liabilities related to CREBs and 2015 Series B revenue bond-funded projects, $1,722 increase from CleanPowerSF purchase of electricity, $1,278 in other post-employment benefit obligations as a result of higher actuarially determined annual required contribution, $738 in employee related benefits including workers' compensation, vacation and sick leave, and accrued payroll, $108 in interest payable mainly from 2015 Series AB power revenue bonds issued in prior year and 2015 NCREBs issued in current year, $46 in prepayments from custom work projects and $14 in grant advance received from the Federal Emergency Management Agency (FEMA), and $6 from the State Office of Emergency Services for the Rim Fire recovery projects. These increases were offset by $1,425 in general liability based on actuarial estimates, $422 decrease in payables to vendors and contractors for services, and $82 decrease as a result of remittance of electrical energy surcharge tax to the State Board of Equalization. As of June 30, 2016, outstanding bonds payable of $60,110 and certificates of participation of $15,281 decreased by $396 due to $2,523 redemption of 2012 NCREBs, and $1,973 principal repayments, amortization of premium and discount for certificates of participation and outstanding debts, offset by $4,100 issuance of 2015 NCREBs in October 2015. Deferred inflows of resources decreased by $5,347 due to pensions based on actuarial report.

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Results of Operations

The following tables summarize Hetch Hetchy's revenues, expenses, and changes in net position:

Table 2A - Consolidated Hetch Hetchy
Comparative Condensed Revenues, Expenses, and Changes in Net Position
Years ended June 30, 2017, 2016, and 2015

	2017	2016 *	2015	2017-2016 Change	2016-2015 Change
Hetch Hetchy					
Revenues:					
Charges for services	$ 189,664	164,474	147,572	25,190	16,902
Rents and concessions	315	262	231	53	31
Interest and investment income	1,853	1,280	1,179	573	101
Other non-operating revenues	12,384	12,456	9,552	(72)	2,904
Total revenues	204,216	178,472	158,534	25,744	19,938
Expenses:					
Operating expenses	194,130	148,495	143,923	45,635	4,572
Interest expenses	3,270	3,355	1,815	(85)	1,540
Amortization of premium, discount, and issuance costs	(255)	(122)	893	(133)	(1,015)
Other non-operating expenses	1,476	1,744	2,807	(268)	(1,063)
Total expenses	198,621	153,472	149,438	45,149	4,034
Change in net position before transfers	5,595	25,000	9,096	(19,405)	15,904
Transfers from the City and County of San Francisco	60,100	1,385	2,075	58,715	(690)
Transfers to the City and County of San Francisco	(49)	(705)	(32)	656	(673)
Net transfers	60,051	680	2,043	59,371	(1,363)
Change in net position	65,646	25,680	11,139	39,966	14,541
Net position at beginning of year					
Beginning of year, as previously reported	512,614	486,934	513,550	25,680	(26,616)
Cumulative effect of accounting change	—	—	(37,755) **	—	37,755
Beginning of year as restated	512,614	486,934	475,795	25,680	11,139
Net position at end of year	$ 578,260	512,614	486,934	65,646	25,680

* Excluded $403 electricity sales and electricity purchases between CleanPowerSF and Hetchy Power.
** Cumulative effect of accounting change per GASB Statement No. 68, *Accounting and Financial Reporting for Pensions.*

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Table 2B - Hetchy Water
Comparative Condensed Revenues, Expenses, and Changes in Net Position
Years ended June 30, 2017, 2016, and 2015

Hetchy Water	2017	2016	2015	2017-2016 Change	2016-2015 Change
Revenues:					
Charges for services	$ 35,008	38,624	38,731	(3,616)	(107)
Rents and concessions	142	118	104	24	14
Interest and investment income (loss)	46	(38)	(74)	84	36
Other non-operating revenues	616	200	250	416	(50)
Total revenues	35,812	38,904	39,011	(3,092)	(107)
Expenses:					
Operating expenses	50,099	36,536	38,701	13,563	(2,165)
Other non-operating expenses	68	68	313	—	(245)
Total expenses	50,167	36,604	39,014	13,563	(2,410)
Change in net position before transfers	(14,355)	2,300	(3)	(16,655)	2,303
Transfers from the City and County of San Francisco	60,000	—	—	60,000	—
Change in net position	45,645	2,300	(3)	43,345	2,303
Net position at beginning of year					
Beginning of year, as previously reported	122,711	120,411	137,404	2,300	(16,993)
Cumulative effect of accounting change	—	—	(16,990) **	—	16,990
Beginning of year as restated	122,711	120,411	120,414	2,300	(3)
Net position at end of year	$ 168,356	122,711	120,411	45,645	2,300

Table 2C - Hetchy Power
Comparative Condensed Revenues, Expenses, and Changes in Net Position
Years ended June 30, 2017, 2016, and 2015

Hetchy Power	2017	2016 *	2015	2017-2016 Change	2016-2015 Change
Revenues:					
Charges for services	$ 120,789	125,850	108,841	(5,061)	17,009
Rents and concessions	173	144	127	29	17
Interest and investment income	1,718	1,318	1,253	400	65
Other non-operating revenues	11,764	12,256	9,302	(492)	2,954
Total revenues	134,444	139,568	119,523	(5,124)	20,045
Expenses:					
Operating expenses	116,935	111,959	105,222	4,976	6,737
Interest expenses	3,200	3,355	1,815	(155)	1,540
Amortization of premium, discount, and issuance costs	(255)	(122)	893	(133)	(1,015)
Other non-operating expenses	1,408	1,676	2,494	(268)	(818)
Total expenses	121,288	116,868	110,424	4,420	6,444
Change in net position before transfers	13,156	22,700	9,099	(9,544)	13,601
Transfers from the City and County of San Francisco	100	1,385	2,075	(1,285)	(690)
Transfers to the City and County of San Francisco	(49)	(705)	(32)	656	(673)
Net transfers	51	680	2,043	**(629)**	**(1,363)**
Change in net position	13,207	23,380	11,142	(10,173)	12,238
Net position at beginning of year					
Beginning of year, as previously reported	389,903	366,523	376,146	23,380	(9,623)
Cumulative effect of accounting change	—	—	(20,765) **	—	20,765
Less: CleanPowerSF beginning net position	(1,424)	—	—	(1,424)	—
Beginning of year as restated	388,479	366,523	355,381	**21,956**	11,142
Net position at end of year	$ 401,686	389,903	366,523	11,783	23,380

* $367 electricity sales and $36 electricity purchases between CleanPowerSF and Hetchy Power excluded in fiscal year 2016.
**Cumulative effect of accounting change per GASB Statement No. 68, *Accounting and Financial Reporting for Pensions.*

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Table 2D - CleanPowerSF
Condensed Revenues, Expenses, and Change in Net Position
Year ended June 30, 2017

	2017
CleanPowerSF	
Revenues:	
Charges for services	$ 33,867
Interest and investment income	89
Other non-operating revenues	4
Total revenues	33,960
Expenses:	
Operating expenses	27,096
Interest expenses	70
Total expenses	27,166
Change in net position	6,794
Net position at beginning of year	1,424
Net position at end of year	$ 8,218

Result of Operations, Fiscal Year 2017

Hetch Hetchy

Hetch Hetchy's total revenues were $204,216, an increase of $25,744 or 14.4% over prior year (see Table 2A). Charges for services were $189,664, an increase of $25,190 or 15.3%, due to increases of $30,118 from CleanPowerSF electricity sales to retail and commercial customers, offset by decreases of $5,061 from Hetchy Power due primarily to a $7,480 decrease in electricity sales to non-City customers, $3,749 CleanPowerSF electricity sales from prior year, offset by increases of $3,913 in sales to other City departments and $1,526 in CleanPowerSF electricity purchased from Hetchy Power. CleanPowerSF was presented as part of Hetchy Power in fiscal year 2016. Hetchy Water charges for services decreased by $3,616 mainly due to decreased water assessment fees of $2,000 or 5% from the Water Enterprise to fund upcountry water-related costs, and $1,625 decreased sale of water from Lawrence Livermore National Laboratory. Hetch Hetchy's total expenses were $198,621, an increase of $45,149 or 29.4% over prior year.

Hetchy Water

Hetchy Water's total revenues were $35,812, a decrease of $3,092 or 7.9% from prior year's revenues (see Table 2B). Charges for services decreased by $3,616 mainly due to decreased water assessment fees of $2,000 from the Water Enterprise to fund upcountry water-related costs, and $1,625 decreased consumption from Lawrence Livermore National Laboratory. The decreases were offset by increases of other non-operating revenues of $416, including $417 from Rim Fire insurance recoveries, $21 in net gain on sale of assets, $10 in miscellaneous revenues, offset by a decrease of $32 from Hunters Point custom work project. Other increases included $84 in interest and investment income and $24 in rent from Moccasin cottage rentals.

Total expenses were $50,167, an increase of $13,563 or 37.1%. Personnel service increased by $9,815 mainly resulting from increased pension expense, $2,977 in other operating expenses due to higher projects spending mainly for San Joaquin Pipeline Rehabilitation Project and Moccasin Facilities New Construction Project, $631 in depreciation and amortization related to increased capitalizable facilities and improvement, and $147 in

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general and administrative expenses mainly due to $639 increased judgments and claims based on actuarial estimates, offset by decreases of $510 in taxes, licenses, and permits related to national park service. Contractual services increased by $115 in engineering services. These increases were offset by decreases of $92 in legal services provided by the City Attorney, and $30 in safety and office supplies. Net transfer in of $60,000 was received from the Water Enterprise to fund upcountry projects.

As a result of the above activities, net position for the year ended June 30, 2017 increased by $45,645 or 37.2% compared to prior year.

Hetchy Power

Hetchy Power's total revenues were $134,444, a decrease of $5,124 or 3.7% from prior year's revenues (see Table 2C). Decrease of $5,061 in charges for services mainly explained by $3,749 electricity sales from CleanPowerSF in prior year, net of $403 sales from prior year between Hetchy Power and CleanPowerSF. Other decreases in charges for services included $7,480 decreased sales to non-City customers mainly due to no excess power sales to TID, offset by increased electricity sales of $3,913 to other City departments due to 6% adopted average rate increase, $1,526 to CleanPowerSF, and $326 to Hunters Point and Treasure Island.

Other non-operating revenues decreased by $492 due to $2,148 in collection from Power System Impact Mitigation Projects, $317 of one-time settlement from PG&E received in prior year, $135 in generator rental revenue, $15 from Hunters Point and Candlestick Point custom work project and $8 reduction in Federal interest subsidy due to sequestration. These decreases were offset by increases of $956 from Rim Fire insurance recoveries, $915 in Cap and Trade revenues, $195 in fees collected from DAS, $37 in grant advance received from the FEMA for the Rim Fire projects, $25 in net gain from sales of assets, and $3 in miscellaneous revenues. Interest and investment income increased by $400 due to higher cash balance resulting from $20,058 commercial paper issuance, and rents increased by $29 due to Moccasin cottage rentals.

Total operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, increased by $4,976 or 4.4% to $116,935 due to increases of $11,329 mainly resulting from increased pension expense, $697 in increased capital projects spending for the Mountain Tunnel Improvement Project and Moccasin Facilities New Construction Project, and $586 in depreciation and amortization related to increased capitalizable facilities and improvement. These increases were offset by decreases of $3,063 in purchased electricity due to higher generation from powerhouses, $2,759 in transmission and distribution power costs due to credit received from California Independent System Operator for excess power generated, $681 in legal services provided by the City Attorney, $577 in contractual services primarily due to discontinuance of certain software licenses, $339 in building and construction supplies, $217 in decreased general and administrative expenses due primarily to $160 in taxes, licenses, and permits related to national park service, and $105 in litigation expenses.

Interest expense decreased by $155 was due to higher capitalized interest for capital projects. Amortization of premium, discount, and issuance costs increased by $133 mainly due to issuance cost for 2015 Series AB revenue bond and 2015 NCREBs in prior year. Other non-operating expenses decreased by $268 or 16% to $1,408 due to fewer payments for Solar Incentive Program. Net transfer of $51 included $100 from the Mayor's Office to fund the Tenderloin Streetlight Replacement Project, offset by $32 transfer to the Office of the City's Administrator for the Surety Bond Program and $17 to Sheriff's Department for Lighting Energy Efficiency Retrofit Project.

As a result of the above activities, net position for the year ended June 30, 2017 increased by $11,783 or 3% compared to prior year.

CleanPowerSF

CleanPowerSF's total revenues were $33,960 (see Table 2D). Charges for services were $33,867 which included $33,855 in electricity sales to retail and commercial customers and $12 in electricity sales to Hetchy Power.

Total operating expenses, excluding interest expenses were $27,096. Purchased electricity and transmission, distribution and other power costs were $22,437, including $1,893 in purchase of electricity from Hetchy Power, $1,570 in general and administrative and other mainly from $1,068 for administrative, data, scheduling and procurement support and $502 in taxes, licenses and permits. Other operating expenses included $1,213 in personnel services, $1,141 in contractual services from Calpine (Noble)'s customer billing and administrative support, $734 in services provided by other departments mainly from legal services provided by City Attorney, communication services and Hetchy Power support and $1 in material and supplies.

Other non-operating revenues and expenses were $23 which included $89 in interest earnings and $4 in termination fees collected from customers offset by $70 in interest expenses incurred on loan repayment to Hetchy Power.

As a result of the above activities, net position for the year ended June 30, 2017 was $8,218.

Result of Operations, Fiscal Year 2016

Hetch Hetchy

Hetch Hetchy's total revenues were $178,472, an increase of $19,938 or 12.6% over prior year. Other non-operating revenues were $12,456, an increase of $2,904 or 30.4% which included $4,399 increase in receipts for the Power System Impact Mitigation Project, $788 increase in fees collected from Distributed Antenna System, $319 one-time settlement from PG&E, $242 from Hunters Point and Candlestick Point custom projects, and $18 in damage claims for light poles offset by decreases of $1,827 in federal and state assistance for Rim Fire, $647 in Rim Fire insurance recoveries, $378 in Cap and Trade revenue, and $10 lower fuel revenues. Hetch Hetchy's total expenses were $153,472, an increase of $4,034 or 2.7% over prior year.

Hetchy Water

Hetchy Water's total revenues were $38,904, a decrease of $107 or 0.3% over prior year (see Table 2B). The decrease was due to decreased water assessment fees of $200 or 0.5% from the Water Enterprise to fund upcountry water-related costs, $140 in other non-operating revenues from the Rim Fire insurance recovery, $9 in net gain on sale of asset, $8 in federal and state assistance, and $5 in lower fuel revenues. These decreases were offset by increases of $112 from Hunters Point and Candlestick Point custom projects, $93 in charges for services from Lawrence Livermore National Laboratory and Groveland Community Services due to planned 10% average rate increase, $36 in interest and investment due to prior year's one-time return of $233 of 2011 Series A bonds interest earnings to the Water Enterprise offset by interest income, and $14 increase in rent from higher Moccasin cottage rentals.

Total expenses were $36,604, a decrease of $2,410 or 6.2% due to decrease of $2,715 in projects spending for Moccasin Facilities Upgrade and Rim Fire projects, $386 in judgments and claims based on actuarial estimates, $245 decrease in other non-operating expenses mainly from prior year write-off of non-capitalizable assets, $228 in depreciation, and $130 in materials and supplies for water sewage treatment supplies and electrical supplies. These decreases were offset by increases of $626 in personnel services mainly due to cost of living adjustments and pension costs, $485 increase in taxes, licenses, and permits related to national park service, $108 increase in

(Continued)

engineering services, and $75 increase in services provided by other departments mainly from increased bureau support costs.

As a result of the above activities, net position for the year ended June 30, 2016 increased by $2,300 or 1.9% compared to prior year.

Hetchy Power

Hetchy Power's total revenues were $139,568, an increase of $20,045 or 16.8% over prior year (see Table 2C). The increase was due to $17,009 in charges for services as explained by increase in sales of $9,307, or 275,778 MWh to non-City customers as a result of sales of excess power, and $4,356 from City Departments due to 3% adopted average rate increase coupled with increase in consumption of 3%. The remaining $3,346 increase in revenues was from two months of electricity sales totaling $3,749 from CleanPowerSF net of $403 sales between Hetchy Power and CleanPowerSF. Other increases of $3,036 included $4,399 received from Power System Impact Mitigation Project, $788 increase in fees collected from Distributed Antenna System, $319 increase in one-time settlement mainly from PG&E, $130 from Hunters Point and Candlestick Point custom projects, $65 increase in interest and investment from higher cash balance, $18 in damage claims for light poles, $17 increase in Moccasin cottage rental and $9 from custom work. These increases were offset by decreases of $1,818 in grant revenues from the FEMA and the State Office of Emergency Services for the Rim Fire projects, $507 in Rim Fire insurance recoveries, $378 in Cap and Trade revenues, and $6 in lower fuel revenues.

Total operating expenses, excluding interest expenses, other non-operating expenses, and amortization of premium, discount, and issuance costs, increased by $6,737 or 6.4% to $111,959 due to increases of $3,526 in purchased electricity, $2,970 in transmission and distribution power costs mainly due to $2,349 costs incurred by CleanPowerSF, $2,545 in capital project spending for Transmission and Distribution System and Transbay Transit Center projects, $1,418 in services provided by other departments mainly from increased bureau support costs and legal services provided by the City Attorney, $810 in materials and electrical supplies, $392 in personnel services mainly due to cost of living adjustments and pension costs and $350 higher taxes, licenses and permits related to national park service. These increases were offset by decreases of $2,359 in contractual services primarily due to closure of the energy bank account with PG&E in prior year, $1,769 in judgments and claims mainly due to prior year one-time settlement of franchise tax fees on interconnection agreement, and $1,146 decrease in depreciation. Interest expenses increased by $1,540 due to issuance of 2015 Series AB revenue bonds in prior year and issuance of 2015 NCREBs in current year.

Amortization of premium, discount, and issuance costs decreased by $1,015 due to the issue costs of 2015 Series AB revenue bonds in May of prior year. Other non-operating expenses decreased by $818 or 32.8% to $1,676 due to $304 decrease from prior year's write-off of non-capitalizable assets and $514 less payments to Solar Incentive Program and Summer Youth Program for the Garden Project. Transfers from the City and County of San Francisco decreased by $690 due to prior year's one-time transfer of $800 from the Mayor's Office to fund the Tenderloin Lighting and Traffic Safety project, offset by $110 increase in transfer from the General Fund for Energy Efficiency project. Transfers to the City and County of San Francisco increased by $673, of which included $366 to art museum for Lighting Energy Efficiency project, $167 to Police Department for Heating, Ventilating and Air Conditioning (HVAC) Improvement project, and $140 to Real Estate Department for HVAC Upgrade project.

As a result of the above activities, net position for the year ended June 30, 2016 increased by $23,380 or 6.4% compared to prior year.

(Continued)

Capital Assets

The following tables summarize Hetch Hetchy's changes in capital assets.

Table 3A - Capital Assets, Net of Accumulated Depreciation and Amortization
As of June 30, 2017, 2016 and 2015

	2017	2016	2015	2017-2016 Change	2016-2015 Change
Hetch Hetchy					
Facilities, improvements, machinery, and equipment	$ 315,880	286,898	254,274	28,982	32,624
Intangible assets	26,776	27,237	27,720	(461)	(483)
Land and rights-of-way	4,787	4,665	4,665	122	—
Construction work in progress	97,278	85,449	86,677	11,829	(1,228)
Total	444,721	404,249	373,336	40,472	30,913
Hetchy Water					
Facilities, improvements, machinery, and equipment	86,787	72,737	54,799	14,050	17,938
Intangible assets	11,410	11,618	11,825	(208)	(207)
Land and rights-of-way	3,055	3,003	3,003	52	—
Construction work in progress	26,479	26,509	34,703	(30)	(8,194)
Total	127,731	113,867	104,330	13,864	9,537
Hetchy Power					
Facilities, improvements, machinery, and equipment	229,093	214,161	199,475	14,932	14,686
Intangible assets	15,366	15,619	15,895	(253)	(276)
Land and rights-of-way	1,732	1,662	1,662	70	—
Construction work in progress	70,799	58,940	51,974	11,859	6,966
Total	$ 316,990	290,382	269,006	26,608	21,376

Capital Assets, Fiscal Year 2017

Hetch Hetchy

Hetch Hetchy has capital assets of $444,721, net of accumulated depreciation and amortization, invested in both water and power utility capital assets as of June 30, 2017 (see Table 3A). This amount represents an increase of $40,472 or 10%, resulting from increases of $28,982 in facilities, improvements, machinery, and equipment, $11,829 in construction work in progress, and $122 in land and rights-of-way; offset by a decrease of $461 in amortization of intangible assets. The investment in capital assets includes land, buildings, improvements, hydropower facilities, dams, transmission lines, machinery, and equipment.

(Continued)

Major additions to construction work in progress, depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service, including transfers of completed projects from construction work in progress, during the year ended June 30, 2017 include the following:

Table 3B - Hetch Hetchy
Major Additions to Construction Work in Progress and
Facilities, Improvements, Intangible Assets, Machinery, and Equipment Placed in Service
Year ended June 30, 2017

	Hetchy Water	Hetchy Power	Total 2017
Mountain Tunnel Improvement	$ 5,369	6,561	11,930
Moccasin Facilities New Construction	3,513	4,293	7,806
San Joaquin Pipeline Rehabilitation	6,816	—	6,816
Transbay Transit Center	—	5,012	5,012
Streetlight Light-Emitting Diode (LED) Conversion	—	2,089	2,089
Other project additions individually below $2,000	2,682	21,831	24,513
Additions to Construction Work in Progress	18,380	39,786	58,166
Mountain Tunnel Improvement	3,668	4,484	8,152
Streetlight LED Conversion	—	3,090	3,090
San Joaquin Pipeline Rehabilitation	3,051	—	3,051
3rd Street Corridor Rehabilitation	—	1,615	1,615
O'Shaughnessy Dam Drum Gate Automation	602	735	1,337
Other project additions individually below $1,200	11,026	17,980	29,006
Facilities, Improvements, Intangible Assets, Machinery, and Equipment Placed in Service	$ 18,347	27,904	46,251

Hetchy Water

Hetchy Water has capital assets of $127,731, net of accumulated depreciation and amortization, invested in a broad range of utility capital assets as of June 30, 2017 (see Table 3A). This amount represents an increase of $13,864 or 12.2%, primarily due to increases of $14,050 in facilities, improvements, machinery, and equipment, and $52 in land and rights-of-way; offset by decreases of $208 in amortization of intangible assets, and $30 in construction work in progress.

For the year ended June 30, 2017, Hetchy Water's major additions to construction work in progress totaled $18,380. Major depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service totaled $18,347 (see Table 3B).

Hetchy Power

Hetchy Power has capital assets of $316,990, net of accumulated depreciation and amortization, invested in utility capital assets as of June 30, 2017 (see Table 3A). This amount represents an increase of $26,608 or 9.2%, primarily due to increases of $14,932 in facilities, improvements, machinery, and equipment, $11,859 in construction work in progress, and $70 in land and rights-of-way; offset by a decrease of $253 in amortization of intangible assets.

(Continued)

For the year ended June 30, 2017, Hetchy Power's major additions to construction work in progress totaled $39,786. Major depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service totaled $27,904 (see Table 3B).

CleanPowerSF

CleanPowerSF had no capital assets as of June 30, 2017 and 2016.

See Note 4 for additional information about capital assets.

Capital Assets, Fiscal Year 2016

Hetch Hetchy

Hetch Hetchy has capital assets of $404,249, net of accumulated depreciation and amortization, invested in both water and power utility capital assets as of June 30, 2016 (see Table 3A). This amount represents an increase of $30,913 or 8.3%, resulting from an increase of $32,624 in facilities, improvements, machinery, and equipment, offset by decreases of $1,228 in construction work in progress and $483 in amortization of intangible assets. The investment in capital assets includes land, buildings, improvements, hydropower facilities, dams, transmission lines, machinery, and equipment.

Major additions to construction work in progress, depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service, including transfers of completed projects from construction work in progress, during the year ended June 30, 2016 include the following:

Table 3C - Hetch Hetchy
Major Additions to Construction Work in Progress and
Facilities, Improvements, Intangible Assets, Machinery, and Equipment Placed in Service
Year ended June 30, 2016

	Hetchy Water	Hetchy Power	Total 2016
Transmission and Distribution System	$ —	6,693	6,693
Microwave System	2,958	3,616	6,574
San Joaquin Pipeline Rehabilitation	4,279	—	4,279
Transbay Transit Center	—	2,938	2,938
Moccasin Facilities Upgrade and New Construction	2,275	2,780	5,055
Other project additions individually below $2,000	5,773	19,943	25,716
Additions to Construction Work in Progress	15,285	35,970	51,255
Transmission and Distribution System	—	7,175	7,175
Lower Cherry Aqueduct	6,576	—	6,576
San Joaquin Pipeline Rehabilitation	2,703	—	2,703
Moccasin Control and Server Building	1,028	1,256	2,284
Other project additions individually below $2,000	11,298	18,618	29,916
Facilities, Improvements, Intangible Assets, Machinery, and Equipment Placed in Service	$ 21,605	27,049	48,654

(Continued)

Hetchy Water

Hetchy Water has capital assets of $113,867, net of accumulated depreciation and amortization, invested in a broad range of utility capital assets as of June 30, 2016 (see Table 3A). This amount represents an increase of $9,537 or 9.1%, primarily due to increases of $17,938 in facilities, improvements, machinery, and equipment, offset by decreases of $8,194 in construction work in progress and $207 in amortization of intangible assets.

As of June 30, 2016, Hetchy Water's major additions to construction work in progress totaled $15,285. Major depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service totaled $21,605 (see Table 3C).

Hetchy Power

Hetchy Power has capital assets of $290,382, net of accumulated depreciation and amortization, invested in power utility capital assets as of June 30, 2016 (see Table 3A). This amount represents an increase of $21,376 or 7.9%, primarily due to an increase of $14,686 in facilities, improvements, machinery, and equipment and $6,966 in construction work in progress offset by $276 in intangible assets.

For the year ended June 30, 2016, Hetchy Power's major additions to construction work in progress totaled $35,970. Major depreciable facilities, improvements, intangible assets, machinery, and equipment placed in service totaled $27,049 (see Table 3C).

See Note 4 for additional information about capital assets.

Debt Administration

Hetch Hetchy

As of June 30, 2017, Hetch Hetchy has outstanding certificates of participation, Clean Renewable Energy Bonds (CREBs), Qualified Energy Conservation Bonds (QECBs), New Clean Renewable Energy Bonds (NCREBs), 2015 Series AB revenue bonds, and commercial paper. The aforementioned debts are obligations of the Power Enterprise. See Hetchy Power section below for more details.

Hetchy Water

Hetchy Water did not have debt outstanding as of June 30, 2017 and 2016. Debt, including bond issuances, associated with the funding of water-related, upcountry infrastructure capital improvements is issued through the Water Enterprise, and is reflected in the Water Enterprise's financial statements.

Hetchy Power

As of June 30, 2017 and 2016, Hetchy Power had outstanding debt of $92,896 and $75,391, respectively, as shown in Table 4. More detailed information about the Hetchy Power's debt activity is presented in Notes 6, 7 and 8 to the financial statements.

CleanPowerSF

CleanPowerSF did not have debt outstanding as of June 30, 2017 and 2016.

(Continued)

Table 4 - Hetchy Power
Outstanding Debt, Net of Unamortized Costs
As of June 30, 2017, 2016 and 2015

	2017	2016	2015	2017-2016 Change	2016-2015 Change
Clean Renewable Energy Bonds 2008	$ 2,453	2,861	3,269	(408)	(408)
Certificates of Participation 2009 Series C	2,345	2,688	3,019	(343)	(331)
Certificates of Participation 2009 Series D (BABs)	12,593	12,593	12,593	—	—
Qualified Energy Conservation Bonds 2011	5,817	6,334	6,845	(517)	(511)
New Clean Renewable Energy Bonds 2012	1,839	2,661	5,674	(822)	(3,013)
New Clean Renewable Energy Bonds 2015	3,877	4,100	—	(223)	4,100
2015 Series A Revenue Bonds	35,851	35,976	36,096	(125)	(120)
2015 Series B Revenue Bonds	8,063	8,178	8,291	(115)	(113)
Commercial Paper	20,058	—	—	20,058	—
Total	$ 92,896	75,391	75,787	17,505	(396)

In November 2008, $6,325 CREBs were issued in accordance with the Energy Tax Incentives Act of 2005 to fund solar photovoltaic projects. These bonds qualified as no interest, tax credit bonds with a term of 15 years. Annual payments in the amount of $422 are due on December 15 beginning in 2008.

QECBs in the amount of $8,291 were issued in December 2011 to fund qualified green energy efficiency projects for the SFPUC's 525 Golden Gate Headquarters project. QECBs have a tax credit Internal Revenue Service (IRS) subsidy and a term of 15 years.

2012 NCREBs were issued for $6,600 in April 2012 to fund certain qualified facilities that will provide clean, renewable energy at Davies Symphony Hall, City Hall, and University Mound Reservoir. NCREBs have a tax credit IRS subsidy and a term of 16 years. $2,523 and $288 were repaid in July 2015 and February 2017, respectively.

2015 NCREBs were issued for $4,100 in October 2015, to fund certain qualified clean, renewable energy solar generation facilities at the Marina Middle School and the San Francisco Police Academy. The 2015 NCREBs have a tax credit IRS subsidy and have a term of 17 years.

Power Revenue Bonds 2015 Series A (Green) in the par amount of $32,025 were issued in May 2015 to finance a rewind of hydro-generating units at Moccasin Powerhouse and for reconstruction or replacement of other Hetch Hetchy project generation facilities. The 2015 Series A were issued as tax-exempt bonds with serial and term maturities, coupons ranging from 4.0% to 5.0% and a final maturity of November 2045. Series 2015 A bonds were designated "Green Bonds" to allow investors to invest directly in bonds, which finance environmentally beneficial projects.

Power Revenue Bonds 2015 Series B in the par amount of $7,530 was issued in May 2015 to finance the rehabilitation of Hetch Hetchy project transmission and distribution lines. The 2015 Series B were issued as tax exempt bonds with serial maturities, coupons ranging from 3.0% to 4.0% and a final maturity of November 2026. The 2015 Series B Bonds were not designated as "Green Bonds."

Credit Ratings and Bond Insurance – The Enterprise's 2015 Series AB Power Revenue Bonds have been rated "AA-" and "A+" by Fitch Inc. and Standard and Poor's (S&P), respectively, as of June 30, 2017 and 2016.

(Continued)

Debt Service Coverage – Pursuant to the Indenture, the Enterprise is required to collect sufficient net revenues each fiscal year, together with any Available Funds (except Bond Reserve Funds) which include unappropriated fund balances and reserves, and cash and book value of investments held by the Treasurer for the Hetchy Power, that the SFPUC reasonably expects would be available, to pay principal and interest becoming due and payable on all outstanding bonds as provided in the Indenture, less any refundable credits, at least equal to 1.25 times annual debt service for said fiscal year. The Series 2015 AB power revenue bonds represent the first series of senior lien revenue bonds of the Hetchy Power. Pursuant to Power's Master Trust Indenture, senior lien debt service coverage excludes debt service on subordinate obligations, such as the Hetchy Power's existing CREBS, NCREBs, and QECBs. Because interest on the Series 2015 AB power revenue bonds is capitalized, Hetchy Power will not be obligated to make debt service payments on the Series 2015 AB power revenue bonds until fiscal year 2018. Therefore, Hetchy Power is not required to calculate and report the Indenture-based debt service coverage ratio in fiscal year 2017. During fiscal year 2017, the Enterprise's net revenues, together with fund balances available to pay debt service and not budgeted to be expended, were sufficient to meet the rate covenant requirements under the Enterprise's Indenture (see Note 8).

Debt Authorization – Pursuant to Charter Section 9.107(6), the Enterprise can incur indebtedness upon three-fourths vote of the Board of Supervisors, for the purpose of the reconstruction or replacement of existing water facilities and electric power facilities, or combinations thereof, under the jurisdiction of the Public Utilities Commission. Pursuant to Charter Section 9.107(8), the Enterprise can issue revenue bonds, without voter approval, upon an affirmative vote of the Board of Supervisors, for the purpose of the acquisition, construction, installation, equipping, improvement, or rehabilitation of equipment or facilities for renewable energy and energy conservation. As of June 30, 2017 and 2016, $39,555 of Hetchy Power revenue bonds were issued and remained outstanding against existing authorization of $144,830.

Cost of Debt Capital – The Enterprise's outstanding long-term senior lien debt consists of the 2015 Series AB Power Revenue Bonds issued in May 2015, which are the first series of bonds issued under the Master Indenture, and are senior in lien to all of the other Enterprise's outstanding debt obligations. Coupon interest rates range from 3.0% to 5.0%. The Enterprise has previously issued and incurred debt service on Tax Credit Bonds and certificates of participation, which constitute subordinate obligations. Interest rates on the Tax Credit Bonds, which include QECBs and NCREBs, range from 1.2% to 1.5% (net of the federal tax subsidy). Certificates of participation carried interest rates range from 2.0% to 6.5%.

Rates and Charges

Hetchy Water

Assessment fees from the Water Enterprise, which cover the water-related upcountry costs, will decrease by $2,000 or 5.8% from $34,600 to $32,600 as reflected in the fiscal year 2018 adopted budget. Hetch Hetchy charges for services related to the storage and delivery of water, including providing electricity to contractual and municipal customers. Fund transfers, related to water-related revenue-funded operating costs, from the Water Enterprise are forecast to level out in fiscal year 2018.

Hetchy Power

Hetchy Power charges for services related to the storage and delivery of water, as well as generating and delivering electricity to contractual and municipal customers. For municipal power services, Enterprise department customers generally pay rates based on the projected PG&E equivalent rate based on customer class.

General Fund department customers generally pay subsidized rates. The Commission adopted General Fund rates averaging $0.0675 and $0.0725 in fiscal years 2016 and 2017, respectively. On May 10, 2016, the Commission adopted an increase in the General Fund rates by $0.005/kWh in fiscal year 2018. City enterprise departments are charged at the PG&E scheduled rates. For fiscal year 2017, the MID and TID class one rates were $0.05126/KWh and $0.04644/KWh, respectively. MID and TID rates are trued up every year based on actual costs.

The Commission approved new schedule of retail electric rates, fees, and charges for residential, commercial, and industrial customers where Hetch Hetchy has been designated as the power provider for retail customers to be applied to meter readings on or after July 1, 2016. Total bundled service charges for residential service rates and low-income residential service rates are calculated using the total rates, on a monthly basis, based on monthly meter reading, plus any applicable taxes.

To date, Hetchy Power has prepared service standards, developed system plans and specifications, acquired materials and equipment, and initiated construction of primary distribution facilities.

Pursuant to City and County of San Francisco Charter Section 8B.125, an independent rate study is performed at least once every five years. The rate study is undertaken to examine future revenue requirements and cost-of-service of the Enterprise. In fall 2015, SFPUC engaged a consultant to perform a cost-of-service study. The informed rate setting from this study resulted in recommendation and approval by the Commission in the spring 2016 for rates to be effective July 1, 2016. Power rates schedule is available at http://sfwater.org/modules/showdocument.aspx?documentid=7743.

CleanPowerSF

CleanPowerSF began offering services in May 2016, giving residential and commercial electricity consumers in San Francisco a choice of having their electricity supplied from clean renewable sources, such as solar and wind, at competitive rates. Through resolution 17-0074, the Commission approved rates and charges for CleanPowerSF on April 11, 2017. Effective July 1, 2017 and each successive July 1 thereafter, the Commission authorizes SFPUC General Manager to adjust rates not otherwise adjusted by Commission action. The Rate schedule is available at http://sfwater.org/index.aspx?page=993.

CleanPowerSF revenues are adequate to support its own operations; the SFPUC intends that these rates be sufficient to pay for impending projects, and be financially independent from Hetch Hetchy in the future. CleanPowerSF is subject to Section 8B.125 of the City Charter, which requires an independent rate study be performed at least once every five years, and the Commission sets rates and charges for the program. The first cost-of-service rates study is scheduled to commence in 2021.

Request for Information

This report is designed to provide our citizens, customers, investors, and creditors with an overview of Hetch Hetchy's finances and to demonstrate Hetch Hetchy's respective accountability for the money it receives. Questions regarding any of the information provided in this report or requests for additional financial information should be addressed to San Francisco Public Utilities Commission, Chief Financial Officer, 525 Golden Gate Avenue, 13th Floor, San Francisco, CA 94102. This report is available at http://www.sfwater.org/index.aspx?page=347.

HETCH HETCHY WATER AND POWER AND CLEANPOWERSF

Statements of Net Position

June 30, 2017 and 2016

(In thousands)

	Hetchy Water	Hetchy Power	CleanPowerSF	Elimination*	2017 Total	Hetchy Water	Hetchy Power **	2016 Total
Assets								
Current assets:								
Cash and investments with City Treasury	$ 75,345	174,633	14,048	—	264,026	34,704	160,002	194,706
Cash and investments outside City Treasury	2	8	—	—	10	2	8	10
Receivables:								
Charges for services (net of allowance for doubtful accounts from CleanPowerSF of $50 as of June 30, 2017 and $0 as of June 30, 2016)	42	8,373	5,528	—	13,943	298	13,244	13,542
Due from other City departments, current portion	—	3,282	—	(2,000)	1,282	—	1,533	1,533
Due from other governments	—	244	—	—	244	—	1,810	1,810
Interest	53	191	17	—	261	67	130	197
Total current receivables	95	12,090	5,545	(2,000)	15,730	365	16,717	17,082
Prepaid charges, advances, and other receivables, current portion	399	415	7	—	821	63	389	452
Inventory	186	215	—	—	401	219	257	476
Restricted cash and investments outside City Treasury, current portion	—	3,783	—	—	3,783	—	2,933	2,933
Total current assets	76,027	191,144	19,600	(2,000)	284,771	35,353	180,306	215,659
Non-current assets:								
Restricted cash and investments with City Treasury	4,154	35,998	—	—	40,152	1,669	38,180	39,849
Restricted cash and investments outside City Treasury, less current portion	—	—	—	—	—	—	2,577	2,577
Restricted interest receivable	—	268	—	—	268	—	131	131
Capital assets, not being depreciated and amortized	29,540	73,962	—	—	103,502	29,518	62,033	91,551
Capital assets, net of accumulated depreciation and amortization	98,191	243,028	—	—	341,219	84,349	228,349	312,698
Charges for services, less current portion	—	28	—	—	28	—	660	660
Prepaid charges, advances, and other receivables, less current portion	169	804	—	—	973	173	817	990
Due from other City departments, less current portion	—	15,164	—	(5,250)	9,914	—	10,696	10,696
Total non-current assets	132,054	369,252	—	(5,250)	496,056	115,709	343,443	459,152
Total assets	208,081	560,396	19,600	(7,250)	780,827	151,062	523,749	674,811
Deferred outflows of resources:								
Pensions	12,659	15,473	—	—	28,132	3,746	4,578	8,324
Total deferred outflows of resources	12,659	15,473	—	—	28,132	3,746	4,578	8,324
Liabilities								
Current liabilities:								
Accounts payable	433	6,904	3,480	—	10,817	2,557	13,484	16,041
Accrued payroll	686	1,647	35	—	2,368	624	1,565	2,189
Accrued vacation and sick leave, current portion	741	1,388	25	—	2,154	806	1,469	2,275
Accrued workers' compensation, current portion	185	363	—	—	548	188	367	555
Damage claims liability, current portion	218	773	—	—	991	127	471	598
Due to other City departments, current portion	—	—	2,387	(2,000)	387	—	—	—
Unearned revenues, refunds, and other, current portion	3	3,141	105	—	3,249	76	4,099	4,175
Bond and loan interest payable	—	533	—	—	533	—	534	534
Bonds, current portion	—	2,437	—	—	2,437	—	1,692	1,692
Certificates of participation, current portion	—	331	—	—	331	—	315	315
Commercial paper	—	20,058	—	—	20,058	—	—	—
Current liabilities payable from restricted assets	4,027	2,968	—	—	6,995	260	2,578	2,838
Total current liabilities	6,293	40,543	6,032	(2,000)	50,868	4,638	26,574	31,212
Long-term liabilities:								
Other post-employment benefits obligations	11,280	16,855	87	—	28,222	9,945	15,224	25,169
Net pension liability	31,235	38,177	—	—	69,412	12,093	14,781	26,874
Accrued vacation and sick leave, less current portion	447	1,009	13	—	1,469	481	1,051	1,532
Accrued workers' compensation, less current portion	814	1,607	—	—	2,421	809	1,600	2,409
Damage claims liability, less current portion	368	1,079	—	—	1,447	226	1,037	1,263
Due to other City departments, less current portion	—	—	5,250	(5,250)	—	—	—	—
Bonds, less current portion	—	55,463	—	—	55,463	—	58,418	58,418
Unearned revenues, refunds, and other, less current portion	609	3,208	—	—	3,817	—	—	—
Certificates of participation, less current portion	—	14,607	—	—	14,607	—	14,966	14,966
Total long-term liabilities	44,753	132,005	5,350	(5,250)	176,858	23,554	107,077	130,631
Total liabilities	51,046	172,548	11,382	(7,250)	227,726	28,192	133,651	161,843
Deferred inflows of resources:								
Related to pensions	1,338	1,635	—	—	2,973	3,905	4,773	8,678
Total deferred inflows of resources	1,338	1,635	—	—	2,973	3,905	4,773	8,678
Net position:								
Net investment in capital assets	127,731	260,681	—	—	388,412	113,867	255,897	369,764
Restricted for debt service	—	485	—	—	485	—	306	306
Restricted for capital projects	—	—	—	—	—	1,409	—	1,409
Unrestricted	40,625	140,520	8,218	—	189,363	7,435	133,700	141,135
Total net position	$ 168,356	401,686	8,218	—	578,260	122,711	389,903	512,614

*Included interfund loan receivable and loan payable of $7,250 for fiscal year 2017, between Hetchy Power and CleanPowerSF.

**CleanPowerSF was presented as part of Hetchy Power in fiscal year 2016.

See accompanying notes to financial statements.

HETCH HETCHY WATER AND POWER AND CLEANPOWERSF
Statements of Revenues, Expenses, and Changes in Net Position
Years ended June 30, 2017 and 2016
(In thousands)

	Hetchy Water	Hetchy Power	CleanPowerSF	2017 Total	Hetchy Water	Hetchy Power*	2016 Total
Operating revenues:							
Charges for services	$ 35,008	120,789	33,867	189,664	38,624	125,850	164,474
Rents and concessions	142	173	—	315	118	144	262
Total operating revenues	35,150	120,962	33,867	189,979	38,742	125,994	164,736
Operating expenses:							
Personnel services	21,998	44,961	1,213	68,172	12,183	33,632	45,815
Contractual services	1,017	4,916	1,141	7,074	902	5,493	6,395
Transmission/distribution and other power costs	—	18,447	214	18,661	—	21,206	21,206
Purchased electricity	—	2,523	22,223	24,746	—	5,586	5,586
Materials and supplies	1,161	1,510	1	2,672	1,191	1,849	3,040
Depreciation and amortization	4,505	13,225	—	17,730	3,874	12,639	16,513
Services provided by other departments	1,962	6,716	734	9,412	2,054	7,397	9,451
General and administrative and other	19,456	24,637	1,570	45,663	16,332	24,157	40,489
Total operating expenses	50,099	116,935	27,096	194,130	36,536	111,959	148,495
Operating income (loss)	(14,949)	4,027	6,771	(4,151)	2,206	14,035	16,241
Non-operating revenues (expenses):							
Federal and state grants	—	37	—	37	—	—	—
Interest and investment income (loss)	46	1,718	89	1,853	(38)	1,318	1,280
Interest expenses	—	(3,200)	(70)	(3,270)	—	(3,355)	(3,355)
Amortization of premium, discount, and issuance costs	—	255	—	255	—	122	122
Net gain from sale of assets	21	26	—	47	—	1	1
Other non-operating revenues	595	11,701	4	12,300	200	12,255	12,455
Other non-operating expenses	(68)	(1,408)	—	(1,476)	(68)	(1,676)	(1,744)
Net non-operating revenues	594	9,129	23	9,746	94	8,665	8,759
Change in net position before transfers	(14,355)	13,156	6,794	5,595	2,300	22,700	25,000
Transfers from the City and County of San Francisco	60,000	100	—	60,100	—	1,385	1,385
Transfers to the City and County of San Francisco	—	(49)	—	(49)	—	(705)	(705)
Net transfers	60,000	51	—	60,051	—	680	680
Change in net position	45,645	13,207	6,794	65,646	2,300	23,380	25,680
Net position at beginning of year	122,711	389,903	1,424	514,038	120,411	366,523	486,934
Less: CleanPowerSF beginning net position	—	(1,424)	—	(1,424)	—	—	—
Net position at end of year	$ 168,356	401,686	8,218	578,260	122,711	389,903	512,614

*CleanPowerSF was presented as part of Hetchy Power in fiscal year 2016.

See accompanying notes to financial statements.

HETCH HETCHY WATER AND POWER AND CLEANPOWERSF

Statements of Cash Flows

Years ended June 30, 2017 and 2016

(In thousands)

	Hetchy Water	Hetchy Power	CleanPowerSF	2017 Total	Hetchy Water	Hetchy Power*	2016 Total
Cash flows from operating activities:							
Cash received from customers, including cash deposits	$ 35,264	126,062	31,407	192,733	38,503	124,431	162,934
Cash received from tenants for rent	139	169	—	308	121	148	269
Cash paid to employees for services	(12,813)	(33,376)	(1,053)	(47,242)	(12,712)	(33,710)	(46,422)
Cash paid to suppliers for goods and services	(24,465)	(60,730)	(24,495)	(109,690)	(18,975)	(60,010)	(78,985)
Cash paid for judgments and claims	(1,045)	(2,150)	—	(3,195)	(692)	(3,948)	(4,640)
Net cash provided by (used in) operating activities	(2,920)	29,975	5,859	32,914	6,245	26,911	33,156
Cash flows from non-capital and related financing activities:							
Cash received from grants	540	2,254	—	2,794	—	19	19
Cash received for license fees	—	3,148	—	3,148	—	2,279	2,279
Cash received from miscellaneous revenues	595	8,438	4	9,037	200	8,512	8,712
Cash received from settlements	—	3	—	3	—	321	321
Cash paid for rebates, program incentives, and other	(68)	(1,408)	—	(1,476)	(68)	(1,676)	(1,744)
Cash paid for Hetchy Power loan interest	—	—	(70)	(70)	—	—	—
Transfers from and to the City and County of San Francisco	60,000	51	—	60,051	—	680	680
Net cash provided by (used in) non-capital financing activities	61,067	12,486	(66)	73,487	132	10,135	10,267
Cash flows from capital and related financing activities:							
Acquisition and construction of capital assets	(15,101)	(40,063)	—	(55,164)	(15,558)	(34,025)	(49,583)
Proceeds from sale of capital assets	21	26	—	47	—	1	1
Issuance costs paid on long-term debt	—	—	—	—	—	(130)	(130)
Principal payments on long-term debt	—	(2,298)	—	(2,298)	—	(4,245)	(4,245)
Proceeds from revenue bonds	—	—	—	—	—	4,100	4,100
Proceeds from commercial paper borrowings	—	20,058	—	20,058	—	—	—
Interest paid on long-term debt	—	(3,460)	—	(3,460)	—	(3,313)	(3,313)
Federal interest income subsidy	—	532	—	532	—	664	664
Net cash used in capital and related financing activities	(15,080)	(25,205)	—	(40,285)	(15,558)	(36,948)	(52,506)
Cash flows from investing activities:							
Interest income received	112	1,747	87	1,946	9	1,319	1,328
Proceeds from sale of investments outside City Treasury	—	3,051	—	3,051	—	16,665	16,665
Purchases of investments outside City Treasury	—	(3,056)	—	(3,056)	—	(19,242)	(19,242)
Net cash provided by (used in) investing activities	112	1,742	87	1,941	9	(1,258)	(1,249)
Increase (decrease) in cash and cash equivalents	43,179	18,998	5,880	68,057	(9,172)	(1,160)	(10,332)
Cash and cash equivalents:							
Beginning of year	36,367	192,923	8,174	237,464	45,539	202,257	247,796
End of year	$ 79,546	211,921	14,054	305,521	36,367	201,097	237,464
Reconciliation of cash and cash equivalents to the statements of net position:							
Cash and investments with City Treasury:							
Unrestricted	$ 75,345	174,633	14,048	264,026	34,704	160,002	194,706
Restricted	4,154	35,998	—	40,152	1,669	38,180	39,849
Cash and investments outside City Treasury:				—			
Unrestricted	2	8	—	10	2	8	10
Restricted	—	3,783	—	3,783	—	5,510	5,510
Less: Restricted (with maturity more than 90 days - see table in Note 3)	—	(2,582)	—	(2,582)	—	(2,577)	(2,577)
Less: Unrealized (gain) loss on investments	45	81	6	132	(8)	(26)	(34)
Cash and cash equivalents at end of year on statements of cash flows	$ 79,546	211,921	14,054	305,521	36,367	201,097	237,464

*CleanPowerSF was presented as part of Hetchy Power in fiscal year 2016.

(Continued)

HETCH HETCHY WATER AND POWER AND CLEANPOWERSF

Statements of Cash Flows

Years ended June 30, 2017 and 2016

(In thousands)

	Hetchy Water	Hetchy Power	CleanPowerSF	2017 Total	Hetchy Water	Hetchy Power *	2016 Total
Reconciliation of operating income (loss) to net cash provided by (used in) operating activities:							
Operating income (loss)	$ (14,949)	4,027	6,771	(4,151)	2,206	14,035	16,241
Adjustments to reconcile operating income (loss) to net cash provided by (used in) operating activities:							
Depreciation and amortization	4,505	13,225	—	17,730	3,874	12,639	16,513
Provision for uncollectible accounts	—	—	50	50	—	—	—
Write-off of capital assets	499	983	—	1,482	2,216	2,692	4,908
Changes in operating assets and liabilities:							
Receivables:							
Charges for services	256	2,540	(2,615)	181	(118)	(5,294)	(5,412)
Prepaid charges, advances, and other	(332)	(13)	(7)	(352)	16	(227)	(211)
Due from other City departments	—	1,130	—	1,130	—	961	961
Inventory	33	42	—	75	(41)	(51)	(92)
Accounts payable	(2,124)	(4,858)	1,758	(5,224)	(1,103)	1,300	197
Accrued payroll	62	82	35	179	102	409	511
Other post-employment benefits obligations	1,335	1,631	87	3,053	1,046	1,278	2,324
Pension obligations	7,662	9,363	—	17,025	(2,173)	(2,653)	(4,826)
Accrued vacation and sick leave	(99)	(123)	38	(184)	118	145	263
Accrued workers' compensation	2	3	—	5	151	184	335
Damage claims liability	233	344	—	577	(49)	(1,425)	(1,474)
Due to other City departments	—	—	(363)	(363)	—	—	—
Unearned revenues, refunds, and other liabilities	(3)	1,599	105	1,701	—	2,918	2,918
Total adjustments	12,029	25,948	(912)	37,065	4,039	12,876	16,915
Net cash provided by (used in) operating activities	$ (2,920)	29,975	5,859	32,914	6,245	26,911	33,156
Noncash transactions:							
Accrued capital asset costs	$ 4,027	2,968	—	6,995	260	2,578	2,838
Payables to Hetchy Power	—	—	7,637	7,637	—	—	—
Receivables from CleanPowerSF	—	7,637	—	7,637	—	—	—

*CleanPowerSF was presented as part of Hetchy Power in fiscal year 2016.

See accompanying notes to financial statements.

(1) Description of Reporting Entity

San Francisco Hetch Hetchy Water and Power (Hetch Hetchy or the Enterprise) was established as a result of the Raker Act of 1913, which granted water and power resources rights-of-way on the Tuolumne River in Yosemite National Park and Stanislaus National Forest to the City and County of San Francisco (the City). CleanPowerSF, launched in May 2016, provides green electricity from renewable sources to residential and commercial customers in San Francisco and was reported as part of Hetchy Power in fiscal year 2016. Hetch Hetchy is a stand-alone enterprise comprised of three funds, Hetchy Power (aka the Power Enterprise), CleanPowerSF and Hetchy Water, the portion of the Water Enterprise's operations, specifically the upcountry water supply and transmission service. Hetch Hetchy accounts for the activities of Hetch Hetchy Water and Power and is engaged in the collection and conveyance of approximately 85% of the City's water supply and in the generation and transmission of electricity from that resource, as well as the City Power services including energy efficiency and renewables.

Approximately 80% of the electricity generated by Hetchy Power is used to provide electric service to the City's municipal customers (including the San Francisco Municipal Transportation Agency, Recreation and Parks Department, the Port of San Francisco, the San Francisco International Airport and its tenants, San Francisco General Hospital, streetlights, Moscone Convention Center, and the Water and Wastewater Enterprises). The majority of the remaining 20% balance of electricity is sold to other utility districts, such as the Turlock and Modesto Irrigation Districts (the Districts). As a result of the 1913 Raker Act, energy produced above the City's Municipal Load is sold first to the Districts to cover their agricultural pumping and municipal load needs and any remaining energy is either sold to other municipalities and/or government agencies (not for resale) or sold into the California Independent System Operator (CAISO). Hetch Hetchy operation is an integrated system of reservoirs, hydroelectric power plants, aqueducts, pipelines, and transmission lines.

Hetch Hetchy also purchases wholesale electric power from various energy providers that are used in conjunction with owned hydro resources to meet the power requirements of its customers. Operations and business decisions can be greatly influenced by market conditions, state and federal power matters before the California Public Utilities Commission (CPUC), the CAISO, and the Federal Energy Regulatory Commission (FERC). Therefore, Hetch Hetchy serves as the City's representative at CPUC, CAISO, and FERC forums and continues to monitor regulatory proceedings.

Until August 1, 2008, the San Francisco Public Utilities Commission (SFPUC) consisted of five members, all appointed by the Mayor. Proposition E, a City and County of San Francisco Charter amendment approved by the voters in the June 3, 2008 election, terminated the terms of all five existing members of the SFPUC, changed the process for appointing new members, and set qualifications for all members. Under the amended Charter, the Mayor continues to nominate candidates to the SFPUC, but nominees do not take office until the Board of Supervisors votes to approve their appointments by a majority (at least six members). The amended Charter provides for staggered four-year terms for SFPUC members and requires them to meet the following qualifications:

- Seat 1 must have experience in environmental policy and an understanding of environmental justice issues.
- Seat 2 must have experience in ratepayer or consumer advocacy.
- Seat 3 must have experience in project finance.
- Seat 4 must have expertise in water systems, power systems, or public utility management.
- Seat 5 is an at-large member.

(Continued)

The SFPUC is a department of the City, and as such, the financial operations of Hetch Hetchy, Wastewater, and the Water Enterprises are included in the Comprehensive Annual Financial Report of the City as enterprise funds. These financial statements are intended to present only the financial position, and the changes in financial position and cash flows of only that portion of the City that is attributable to the transactions of Hetch Hetchy. They do not purport to, and do not, present fairly the financial position of the City as of June 30, 2017 and 2016, and the changes in its financial position, or, where applicable, the cash flows for the years then ended, in conformity with U.S. generally accepted accounting principles (GAAP).

(2) Significant Accounting Policies

(a) Basis of Accounting and Measurement Focus

The accounts of Hetch Hetchy are organized on the basis of proprietary fund types and are included as enterprise funds of the City. The activities of Hetch Hetchy and each fund are accounted for with a separate set of self-balancing accounts that comprise Hetch Hetchy's and each fund's assets, deferred outflows, liabilities, deferred inflows, net position, revenues, and expenses. Enterprise funds account for activities (i) that are financed with debt that is secured solely by a pledge of the net revenues from fees and charges of the activity; or (ii) that are required by laws or regulations that the activity's costs of providing services, including capital costs (such as depreciation or debt service), be recovered with fees and charges, rather than with taxes or similar revenues; or (iii) that the pricing policies of the activity establish fees and charges designed to recover its costs, including capital costs (such as depreciation or debt service).

The financial activities of Hetch Hetchy are accounted for on a flow of economic resources measurement focus, using the accrual basis of accounting in accordance with U.S. GAAP. Under this method, all assets and liabilities associated with operations are included on the statements of net position, revenues are recognized when earned, and expenses are recognized when liabilities are incurred. Operating revenues are defined as charges to customers and rental income.

Hetch Hetchy applies all applicable Governmental Accounting Standards Board (GASB) pronouncements.

(b) Cash and Cash Equivalents

Hetch Hetchy considers its pooled deposits and investments held with the City Treasury to be demand deposits and, therefore, cash and cash equivalents for financial reporting. The City Treasury also holds non-pooled cash and investments for the Enterprise. Non-pooled restricted deposits and restricted deposits and investments held outside the City Treasury with original maturities of three months or less are considered to be cash equivalents.

(c) Investments

Money market funds are carried at cost, which approximates fair value. All other investments are stated at fair value based upon quoted market prices. Changes in fair value are recognized as investment gains or losses and are recorded as a component of non-operating revenues.

(d) Inventory

Inventory consists primarily of construction materials and maintenance supplies and is valued at average cost. Inventory is expensed as it is consumed.

(e) Capital Assets

Capital assets are defined as assets with an initial individual cost of more than $5 and an estimated useful life in excess of one year. Capital assets with an original acquisition date prior to July 1, 1977 are recorded in the financial statements at estimated cost, as determined by an independent professional appraisal, or at cost, if known. All subsequent acquisitions have been recorded at cost. All donated capital assets are valued at acquisition value at the time of donation. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the related assets, which range from 1 to 100 years. No depreciation or amortization is recorded in the year of acquisition, and depreciation or amortization is recorded in the year of disposal.

(f) Intangible Assets

Under GASB Statement No. 51, *Accounting and Financial Reporting for Intangible Assets,* intangible assets are defined as identifiable, non-financial assets capable of being separated, sold, transferred, or licensed, and include contractual or legal rights. Examples of intangible assets include rights-of-way easements, land use rights, water rights, licenses, and permits. The accounting pronouncement also provides guidance on the capitalization of internally generated intangible assets, such as the development and installation of computer software by or on behalf of the reporting entity.

According to the standard, Hetch Hetchy is required to capitalize intangible assets with a useful life extending beyond one reporting period. Hetch Hetchy has established a capitalization threshold of $100. GASB Statement No. 51 also requires amortization of intangible assets over the benefit period, except for certain assets having an indefinite useful life. Assets with an indefinite useful life generally provide a benefit that is not constrained by legal or contractual limitations or any other external factor and, therefore, are not amortized (see Note 4).

(g) Construction Work In Progress

The cost of acquisition and construction of major plant and equipment is recorded as construction work in progress. Costs of construction projects that are discontinued are recorded as expense in the year in which the decision is made to discontinue such projects.

(h) Capitalization of Interest

A portion of the interest cost incurred on capital projects is capitalized on assets that require a period of time for construction or to otherwise prepare them for their intended use. Such amounts are amortized over the useful lives of the assets (see Note 4).

(i) Bond Discount, Premium, and Issuance Costs

Bond issuance costs related to prepaid insurance costs are capitalized and amortized using the effective interest method. Other bond issuance costs are expensed when incurred. Original issue bond discount or premium are offset against the related debt and are also amortized using the effective interest method.

(j) Accrued Vacation and Sick Leave

Accrued vacation pay, which may be accumulated up to 10 weeks per employee, is charged to expense as earned. Sick leave earned subsequent to December 6, 1978 is non-vesting and may be accumulated up to six months per employee.

(k) Workers' Compensation

The Enterprise is self-insured for workers' compensation claims and accrues the estimated cost of those claims, including the estimated cost of incurred but not reported claims (see Note 12(c)).

(l) General Liability

The Enterprise is self-insured for general liability and uninsurable property damage claims. Commercially uninsurable property includes assets that are underground or provide transmission and distribution. Maintained commercial coverage does not cover claims attributed to loss from earthquake, contamination, pollution remediation efforts, and other specific naturally occurring contaminants such as mold. The liability represents an estimate of the cost of all outstanding claims, including adverse loss development and estimated incurred but not reported claims (see Note 12(a)).

(m) Arbitrage Rebate Payable

Certain bonds are subject to arbitrage rebate requirements in accordance with regulations issued by the U.S. Treasury Department. The requirements of the Clean Renewable Energy Bonds (CREBs), the Qualified Energy Conservation Bonds (QECBs), and the New Clean Renewable Energy Bonds (NCREBs) stipulate that the first payment of excess investment earnings, if any, is required to be rebated to the federal government, no later than 60 days after the end of the fifth bond year of the agreement. Hetch Hetchy did not have any arbitrage liability as of June 30, 2017 or 2016.

(n) Income Taxes

As a department of a government agency, the Enterprise is exempt from both federal income taxes and California State franchise taxes.

(o) Revenue Recognition

Water and power revenues are based on water and power consumption and billing rates. Generally, customers are billed monthly. Revenues earned but unbilled are accrued as charges for services receivables on the Statements of Net Position.

(p) Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

(q) Eliminations

Eliminations for internal activities between the Hetchy Power and CleanPowerSF are made in the Statements of Net Position and Supplemental Schedule. There were activities requiring eliminations during the fiscal years ended June 30, 2017, and June 30, 2016.

(Continued)

(r) Accounting and Financial Reporting for Pollution Remediation Obligations

According to GASB Statement No. 49, *Accounting and Financial Reporting for Pollution Remediation Obligations*, a government would have to estimate its expected outlays for pollution remediation if it knows a site is polluted and any of the following recognition triggers occur:

- Pollution poses an imminent danger to the public or environment and a government has little or no discretion to avoid fixing the problem;
- A government has violated a pollution prevention-related permit or license;
- A regulator has identified (or evidence indicates it will identify) a government as responsible (or potentially responsible) for cleaning up pollution, or for paying all or some of the cost of the cleanup;
- A government is named (or evidence indicates that it will be named) in a lawsuit to compel it to address the pollution; or
- A government begins or legally obligates itself to begin cleanup or post-cleanup activities (limited to amounts the government is legally required to complete).

As a part of ongoing operations, situations may occur requiring the removal of pollution or other hazardous material. These situations typically arise in the process of acquiring an asset, preparing an asset for its intended use, or during the Design Phase of projects under review by the project managers. Other times, pollution may arise during the implementation and construction of a major or minor capital project. Examples of pollution may include, but are not limited to, asbestos or lead paint removal; leaking of sewage in underground pipes or neighboring areas; chemical spills; removal and disposal of known toxic waste; harmful biological and chemical pollution of water; or contamination of surrounding soils by underground storage tanks (see Note 13(c)).

(s) GASB Statements Implemented in Fiscal Year 2017

1) In June 2015, *the GASB issued Statement No. 73, Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement No. 68, and Amendments to Certain Provisions of GASB Statements No. 67 and 68.* GASB Statement No. 73 addresses accounting and financial reporting for pensions provided by governments that are not within the scope of Statement No. 68. The new standard is effective for periods beginning after June 15, 2016. The Enterprise adopted the provisions of this Statement, which did not have a significant impact on its financial statements.

2) In August 2015, the GASB issued Statement No. 77, *Tax Abatement Disclosures.* GASB Statement No. 77 establishes financial reporting standards for tax abatement agreements entered into by state and local governments. The new standard is effective for periods beginning after December 15, 2015. The Enterprise adopted the provisions of this Statement, which did not have a significant impact on its financial statements.

3) In December 2015, the GASB issued Statement No. 78, *Pensions Provided through Certain Multiple-Employer Defined Benefit Pension Plans.* GASB Statement No. 78 establishes accounting and financial reporting standards for defined benefit pensions provided by state or local governments through a cost-sharing plan that meets the criteria of Statement No. 68 and is not a state or local governmental pension plan. The new standard is effective for periods beginning after December 15, 2015. The Enterprise adopted the provisions of this Statement, which did not have a significant impact on its financial statements.

(Continued)

(t) GASB Statements Implemented in Fiscal Year 2016

1) In fiscal year 2016, Hetch Hetchy adopted GASB Statement No. 72, *Fair Value Measurement and Application*, which requires Hetch Hetchy to use valuation techniques, which are appropriate under the circumstances and are consistent with the market approach, the cost approach, or the income approach. GASB Statement No. 72 establishes a hierarchy of inputs used to measure fair value consisting of three levels. Level 1 inputs are quoted prices in active markets for identical assets or liabilities. Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs. The Statement also contains note disclosure requirements regarding the hierarchy of valuation inputs and techniques used for the fair value measurements (see Note 3). For those investments held with the City Treasury, the City discloses the requirements regarding the hierarchy of valuation inputs and techniques used for the fair value measurements at the Citywide level. However, such disclosure is not required at the department level for those investments held with the City Treasury.

2) GASB Statement No. 82, *Pension Issues-an amendment of GASB Statements No. 67, No. 68, and No. 7*, issued in March 2016, addresses issues regarding (1) the presentation of payroll-related measures in required supplementary information, (2) the selection of assumptions and the treatment of deviations from the guidance in an Actuarial Standard of Practice for financial reporting purposes, and (3) the classification of payments made by employers to satisfy employee (plan member) contribution requirements. The new standard is effective for periods beginning after June 15, 2016 and the City elected early implementation in fiscal year 2016. While there was an impact to the City's financial statements, there was no impact on the Enterprise's financial statements in fiscal year 2016.

(u) Future Implementation of New Accounting Standards

1) In June 2015, the GASB issued Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. GASB Statement No. 75 revises and establishes new accounting and financial reporting requirements for governments that provides their employees with other postemployment benefits other than pensions. The new standard is effective for periods beginning after June 15, 2017. The Enterprise will implement the provisions of Statement No. 75 in fiscal year 2018.

2) In March 2016, the GASB issued Statement No. 81, *Irrevocable Split-Interest Agreements*. GASB Statement No. 81 establishes accounting and financial reporting standards for irrevocable split-interest agreement created through trusts in which a donor irrevocably transfers resources to an intermediary. The new standard is effective for periods beginning after December 15, 2016. The Enterprise will implement the provisions of Statement No. 81 in fiscal year 2018.

3) In November 2016, the GASB issued Statement No. 83, *Certain Asset Retirement Obligations*. GASB Statement No. 83 establishes accounting and financial reporting standards for certain asset retirement obligations. The new standard is effective for periods beginning after June 15, 2018. The Enterprise will implement the provisions of Statement No. 83 in fiscal year 2019.

4) In January 2017, the GASB issued Statement No. 84, *Fiduciary Activities*. GASB Statement No. 84 establishes criteria for state and local governments to identify fiduciary activities and how those activities should be reported. The new standard is effective for periods beginning after

December 15, 2018. The Enterprise will implement the provisions of Statement No. 84 in fiscal year 2020.

5) In March 2017, the GASB issued Statement No. 85, *Omnibus 2017.* GASB Statement No. 85 addresses practice issues identified during the implementation and application of certain GASB Statements. The new standard is effective for periods beginning after June 15, 2017. The Enterprise will implement the provisions of Statement No. 85 in fiscal year 2018.

6) In May 2017, the GASB issued Statement No. 86, *Certain Debt Extinguishment Issues.* GASB Statement No. 86 improves accounting and financial reporting for in-substance defeasance of debt using existing resources other than proceeds of refunding debt. The new standard is effective for periods beginning after June 15, 2017. The Enterprise will implement the provisions of Statement No. 86 in fiscal year 2018.

7) In June 2017, the GASB issued Statement No. 87, *Leases.* GASB Statement No. 87 establishes a single model for lease accounting and requires reporting of certain lease liabilities that currently are not reported. The new standard is effective for periods beginning after December 15, 2019. The Enterprise will implement the provisions of Statement No. 87 in fiscal year 2021.

(3) Cash, Cash Equivalents, and Investments

Hetch Hetchy's cash, cash equivalents, and investments with the City Treasury are invested in an unrated City pool pursuant to investment policy guidelines established by the City Treasurer. The objectives of the policy guidelines are, in order of priority, preservation of capital, liquidity, and yield. The policy addresses soundness of financial institutions in which the City will deposit funds, types of investment instruments as permitted by the California Government Code, and the percentage of the portfolio, which may be invested in certain instruments with longer terms to maturity. The City Treasurer allocates income from the investment of pooled cash at month-end in proportion to Hetch Hetchy's average daily cash balances. The primary objectives of Hetch Hetchy's investment policy are consistent with the City and County's policy.

Restricted assets are held by an independent trustee outside the City's investment pool. The assets are held for the purpose of paying future interest and principal on the bonds and for eligible capital project expenditures. The balances as of June 30, 2017 and 2016 were $3,783 and $5,510, respectively. The Enterprise held all investments in guaranteed investment contracts, treasury and government obligations, commercial paper, corporate bonds, and notes, as well as money market mutual funds consisting of treasury and government obligations. The balance as of June 30, 2017 included 2015 Series A bonds proceeds of $2,113, certificates of participation proceeds of $1,171, 2015 Series B bonds proceeds of $497, commercial paper of $2 and $10 held at a commercial bank in a non-interest bearing checking account that is covered by depository insurance. The balance as of June 30, 2016 included 2015 Series A bonds proceeds of $3,581, 2015 Series B bonds proceeds of $758, certificates of participation proceeds of $1,171, and $10 held at a commercial bank in a non-interest bearing checking account that is covered by depository insurance.

The restricted cash and investments outside City Treasury as of June 30, 2017 included a $2 unrealized gain and June 30, 2016 included a $2 unrealized loss due to changes in fair values on U.S. Agencies, respectively.

Hetch Hetchy categorizes its fair value measurements within the fair value hierarchy established by GAAP. The hierarchy is based on the valuation inputs used to measure fair value of the assets. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; and Level 3 inputs are significant unobservable inputs. The inputs and techniques used for valuing securities are not necessarily an indication of risk associated with investing in those securities.

The following is a summary of the Hetch Hetchy restricted and unrestricted cash and investments outside City Treasury and the fair value hierarchy as of June 30, 2017 and 2016.

Hetch Hetchy Cash and Investments outside City Treasury

Investments	Credit Ratings (S&P/Moody's)	June 30, 2017 Maturities	Fair Value	Investments exempt from fair value	Fair Value Measurements Using: Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Unobservable Inputs (Level 3)
U.S. Agencies	AA+/Aaa	October 13, 2017	$ 2,582	—	—	2,582	—
U.S. Treasury Money Market Funds	AAAm/Aaa-mf	< 90 days	1,201	1,201	—	—	—
Total Restricted Cash and Investments outside City Treasury			$ 3,783	1,201	—	2,582	—
Cash and Cash Equivalents	N/A		10	10	—	—	—
Total Cash and Investments outside City Treasury			$ 10	10	—	—	—

Hetch Hetchy Cash and Investments outside City Treasury

Investments	Credit Ratings (S&P/Moody's)	June 30, 2016 Maturities	Fair Value	Investments exempt from fair value	Fair Value Measurements Using: Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Unobservable Inputs (Level 3)
U.S. Agencies	AA+/Aaa	October 13, 2017	$ 2,577	—	—	2,577	—
U.S. Treasury Money Market Funds	AAAm/Aaa-mf	< 90 days	2,933	2,933	—	—	—
Total Restricted Cash and Investments outside City Treasury			$ 5,510	2,933	—	2,577	—
Cash and Cash Equivalents	N/A		10	10	—	—	—
Total Cash and Investments outside City Treasury			$ 10	10	—	—	—

For fiscal year 2017 and 2016, proceeds from 2015 Series A and B bonds held as restricted cash and investments outside City Treasury in the amount of $2,582 and $2,577 were invested in U.S. Agencies with a maturity date of October 13, 2017, respectively. The credit ratings of the U.S. Agencies as of June 30, 2017 and June 30, 2016 were "AA+" by S&P and "Aaa" by Moody's.

(Continued)

Hetch Hetchy's cash, cash equivalents, and investments are shown on the accompanying Statements of Net Position as of June 30, 2017 and 2016:

	Hetchy Water	Hetchy Power	CleanPowerSF	Total 2017
Current assets:				
Cash and investments with City Treasury	$ 75,345	174,633	14,048	264,026
Cash and investments outside City Treasury	2	8	—	10
Restricted cash and investments outside City Treasury	—	3,783	—	3,783
Non-current assets:				
Restricted cash and investments with City Treasury	4,154	35,998	—	40,152
Total cash, cash equivalents, and investments	$ 79,501	214,422	14,048	307,971

	Hetchy Water	Hetchy Power *	Total 2016
Current assets:			
Cash and investments with City Treasury	$ 34,704	160,002	194,706
Cash and investments outside City Treasury	2	8	10
Restricted cash and investments outside City Treasury	—	2,933	2,933
Non-current assets:			
Restricted cash and investments with City Treasury	1,669	38,180	39,849
Restricted cash and investments outside City Treasury	—	2,577	2,577
Total cash, cash equivalents, and investments	$ 36,375	203,700	240,075

*CleanPowerSF was presented as part of Hetchy Power in fiscal year 2016.

The following table shows the percentage distribution of the City's pooled investment by maturity:

	Investment maturities (in months)			
Fiscal years ended June 30	**Under 1**	**1 to less than 6**	**6 to less than 12**	**12 to 60**
2017	20.1%	21.2%	18.0%	40.7%
2016	18.4%	23.2%	20.3%	38.1%

(Continued)

(4) Capital Assets

(a) Hetch Hetchy

Capital assets with a useful life of 50 years or greater include buildings and structures, reservoirs, dams, power stations, certain water mains and pipelines, transmission and distribution systems, tunnels, and bridges.

Hetch Hetchy capital assets as of June 30, 2017 and 2016 consist of the following:

	2016	Increases	Decreases	2017
Capital assets not being depreciated and amortized:				
Land and rights-of-way	$ 4,665	127	(5)	4,787
Intangible assets	1,437	—	—	1,437
Construction work in progress	85,449	58,166	(46,337) *	97,278
Total capital assets not being depreciated and amortized	91,551	58,293	(46,342)	103,502
Capital assets being depreciated and amortized:				
Facilities and improvements	563,228	40,466	—	603,694
Intangible assets	45,715	—	—	45,715
Machinery and equipment	122,575	5,785	(319)	128,041
Total capital assets being depreciated and amortized	731,518	46,251 *	(319)	777,450
Less accumulated depreciation and amortization for:				
Facilities and improvements	(336,797)	(11,461)	—	(348,258)
Intangible assets	(19,915)	(461)	—	(20,376)
Machinery and equipment	(62,108)	(5,808)	319	(67,597)
Total accumulated depreciation and amortization	(418,820)	(17,730)	319	(436,231)
Total capital assets being depreciated and amortized, net	312,698	28,521	—	341,219
Total capital assets, net	$ 404,249	86,814	(46,342)	444,721

* Decrease in construction work in progress is greater than increase in capital assets being depreciated is explained by $1,482 in capital project write-offs, mainly related to Mountain Tunnel Inspection and Repair Projects, Transmission and Distribution System Project, San Joaquin Pipeline Rehabilitation Project, and Oil Containment Project.

	2015	Increases	Decreases	2016
Capital assets not being depreciated and amortized:				
Land and rights-of-way	$ 4,665	—	—	4,665
Intangible assets	1,437	—	—	1,437
Construction work in progress	86,677	51,255	(52,483) *	85,449
Total capital assets not being depreciated and amortized	92,779	51,255	(52,483)	91,551
Capital assets being depreciated and amortized:				
Facilities and improvements	524,383	38,845	—	563,228
Intangible assets	45,715	—	—	45,715
Machinery and equipment	112,798	9,809	(32)	122,575
Total capital assets being depreciated and amortized	682,896	48,654 *	(32)	731,518
Less accumulated depreciation and amortization for:				
Facilities and improvements	(326,220)	(10,577)	—	(336,797)
Intangible assets	(19,432)	(483)	—	(19,915)
Machinery and equipment	(56,687)	(5,453)	32	(62,108)
Total accumulated depreciation and amortization	(402,339)	(16,513)	32	(418,820)
Total capital assets being depreciated and amortized, net	280,557	32,141	—	312,698
Total capital assets, net	$ 373,336	83,396	(52,483)	404,249

* Decrease in construction work in progress is greater than increase in capital assets being depreciated is explained by $4,908 in capital project write-offs, mainly related to Hetch Hetchy San Joaquin Pipeline Rehabilitation Project, SEA Design Build Redevelopment, and SEA New Sites Study.

(Continued)

(b) Hetchy Water capital assets as of June 30, 2017 and 2016 consist of the following:

	2016	Increases	Decreases	2017
Capital assets not being depreciated and amortized:				
Land and rights-of-way	$ 3,003	57	(5)	3,055
Intangible assets	6	—	—	6
Construction work in progress	26,509	18,380	(18,410) *	26,479
Total capital assets not being depreciated and amortized	29,518	18,437	(18,415)	29,540
Capital assets being depreciated and amortized:				
Facilities and improvements	218,618	16,986	—	235,604
Intangible assets	20,522	—	—	20,522
Machinery and equipment	24,318	1,361	(144)	25,535
Total capital assets being depreciated and amortized	263,458	18,347 *	(144)	281,661
Less accumulated depreciation and amortization for:				
Facilities and improvements	(155,343)	(3,086)	—	(158,429)
Intangible assets	(8,910)	(208)	—	(9,118)
Machinery and equipment	(14,856)	(1,211)	144	(15,923)
Total accumulated depreciation and amortization	(179,109)	(4,505)	144	(183,470)
Total capital assets being depreciated and amortized, net	84,349	13,842	—	98,191
Total capital assets, net	$ 113,867	32,279	(18,415)	127,731

* Decrease in construction work in progress is greater than increase in capital assets being depreciated is explained by $499 in capital project write-offs, mainly related to Hetchy Water's share of Mountain Tunnel Inspection Projects, and San Joaquin Pipeline Rehabilitation Project.

	2015	Increases	Decreases	2016
Capital assets not being depreciated and amortized:				
Land and rights-of-way	$ 3,003	—	—	3,003
Intangible assets	6	—	—	6
Construction work in progress	34,703	15,285	(23,479) *	26,509
Total capital assets not being depreciated and amortized	37,712	15,285	(23,479)	29,518
Capital assets being depreciated and amortized:				
Facilities and improvements	199,321	19,297	—	218,618
Intangible assets	20,522	—	—	20,522
Machinery and equipment	22,024	2,308	(14)	24,318
Total capital assets being depreciated and amortized	241,867	21,605 *	(14)	263,458
Less accumulated depreciation and amortization for:				
Facilities and improvements	(152,860)	(2,483)	—	(155,343)
Intangible assets	(8,703)	(207)	—	(8,910)
Machinery and equipment	(13,686)	(1,184)	14	(14,856)
Total accumulated depreciation and amortization	(175,249)	(3,874)	14	(179,109)
Total capital assets being depreciated and amortized, net	66,618	17,731	—	84,349
Total capital assets, net	$ 104,330	33,016	(23,479)	113,867

* Decrease in construction work in progress is greater than increase in capital assets being depreciated is explained by $2,216 in capital project write-offs, mainly related to San Joaquin Pipeline Rehabilitation Project and Lower Cherry Aqueduct Project and Hetchy Water's share of Moccasin Facilities Upgrade Project.

(Continued)

(c) Hetchy Power capital assets as of June 30, 2017 and 2016 consist of the following:

	2016	Increases	Decreases	2017
Capital assets not being depreciated and amortized:				
Land and rights-of-way	$ 1,662	70	—	1,732
Intangible assets	1,431	—	—	1,431
Construction work in progress	58,940	39,786	(27,927) *	70,799
Total capital assets not being depreciated and amortized	62,033	39,856	(27,927)	73,962
Capital assets being depreciated and amortized:				
Facilities and improvements	344,610	23,480	—	368,090
Intangible assets	25,193	—	—	25,193
Machinery and equipment	98,257	4,424	(175)	102,506
Total capital assets being depreciated and amortized	468,060	27,904 *	(175)	495,789
Less accumulated depreciation and amortization for:				
Facilities and improvements	(181,454)	(8,375)	—	(189,829)
Intangible assets	(11,005)	(253)	—	(11,258)
Machinery and equipment	(47,252)	(4,597)	175	(51,674)
Total accumulated depreciation and amortization	(239,711)	(13,225)	175	(252,761)
Total capital assets being depreciated and amortized, net	228,349	14,679	—	243,028
Total capital assets, net	$ 290,382	54,535	(27,927)	316,990

* Decrease in construction work in progress is greater than increase in capital assets being depreciated is explained by $983 in capital project write-offs, mainly related to Hetchy Power's share of Mountain Tunnel Inspection Projects, Transmission and Distribution System Project, and Oil Containment Project.

	2015	Increases	Decreases	2016
Capital assets not being depreciated and amortized:				
Land and rights-of-way	$ 1,662	—	—	1,662
Intangible assets	1,431	—	—	1,431
Construction work in progress	51,974	35,970	(29,004) *	58,940
Total capital assets not being depreciated and amortized	55,067	35,970	(29,004)	62,033
Capital assets being depreciated and amortized:				
Facilities and improvements	325,062	19,548	—	344,610
Intangible assets	25,193	—	—	25,193
Machinery and equipment	90,774	7,501	(18)	98,257
Total capital assets being depreciated and amortized	441,029	27,049 *	(18)	468,060
Less accumulated depreciation and amortization for:				
Facilities and improvements	(173,360)	(8,094)	—	(181,454)
Intangible assets	(10,729)	(276)	—	(11,005)
Machinery and equipment	(43,001)	(4,269)	18	(47,252)
Total accumulated depreciation and amortization	(227,090)	(12,639)	18	(239,711)
Total capital assets being depreciated and amortized, net	213,939	14,410	—	228,349
Total capital assets, net	$ 269,006	50,380	(29,004)	290,382

* Decrease in construction work in progress is greater than increase in capital assets being depreciated is explained by $2,692 in capital project write-offs, mainly related to SEA Design Build Redevelopment, SEA New Sites Study, and Hetchy Power's share of Moccasin Facilities Upgrade Project.

During fiscal year 2017, Hetchy Water and Hetchy Power expensed $499 and $983, respectively, related to repair and maintenance costs on various Hetch Hetchy projects. Hetch Hetchy write-offs of $1,482

collectively were primarily related to projects for Mountain Tunnel Inspection and Repair Projects, Transmission and Distribution System, San Joaquin Pipeline Rehabilitation Project, and Oil Containment Project. During fiscal year 2016, Hetchy Water and Hetchy Power expensed $2,216 and $2,692, respectively, related to repair and maintenance costs on various Hetch Hetchy projects. Hetch Hetchy write-offs of $4,908 collectively were primarily related to projects for San Joaquin Pipeline Rehabilitation, SEA Design Build Redevelopment project, and SEA New Sites Study project.

GASB Statement No. 62, *Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 Financial Accounting Standards Board (FASB) and American Institute of Certified Public Accountants (AICPA) Pronouncements*, requires that interest expense incurred during construction of assets be capitalized. Interest included in the construction work in progress and total interest expense incurred during the years ended June 30, 2017 and 2016 are as follows:

Hetchy Power	2017	2016
Interest expensed	$ 3,200	3,355
Interest included in construction work in progress	259	67
Total interest incurred	$ 3,459	3,422

(5) Restricted Assets

Pursuant to the Hetchy Power Trust Indenture (the "Indenture"), established in fiscal year 2015, net revenues of the Hetchy Power are pledged first to the 2015 Series AB Bonds, and have a priority lien on the pledge of net revenues to the outstanding CREBs, QECBs, and NCREBs (the "Subordinate Obligations"). The Lease/Purchase Agreements for the Subordinate Obligations pledge the net revenues of the Hetchy Power to these bonds, and such pledge is subordinate in lien to the net revenues pledge for the 2015 Series AB Bonds (the "Bonds" or "Bond").

In the Indenture, the SFPUC covenants and agrees that it will pay into the Revenue Fund as received all Revenues of Hetchy Power and shall be used and applied, as provided by the Indenture, solely for the purposes of operating and maintaining Hetchy Power and paying all costs, charges, and expenses in connection therewith and for the purpose of making repairs, renewals, and replacements to Hetchy Power and constructing additions, betterments, and extensions thereto.

The Indenture provides that Revenues deposited in the Revenue Fund shall be disbursed in the following order of priority:

1. The payment of operation and maintenance expenses;
2. Any priority reconstruction and replacement fund deposits;
3. Deposit in the interest account of each Bond Fund;
4. Deposit in the bond retirement account of each Bond Fund;
5. Deposit in the reserve fund;
6. (i) Payment of principal and premium, if any, and interest on any Subordinate Obligations; (ii) deposit into a reserve fund securing any Subordinate Obligations; (iii) Swap Agreement payments pursuant to Swap Agreements entered into by the SFPUC with respect to any Subordinate Obligations; and (iv) payment to any financial institution or insurance company providing any letter of credit, line of credit, or other credit or liquidity facility, including municipal bond insurance and guarantees, that secures the payment of principal of or interest on any Subordinate Obligations; in each case in any order of priority within this paragraph which may be hereafter established by the SFPUC by resolution;
7. Any additional reconstruction and replacement fund deposits into the reconstruction and replacement fund;
8. Any necessary or desirable capital additions or improvements to the Hetchy Power;

(Continued)

9. Any payment under a Take-or-Pay Power Purchase Agreement that does not constitute an operation and maintenance expense;
10. Any payment under a Swap Agreement that does not constitute a Swap Agreement payment; and
11. Any other lawful purpose of the SFPUC.

In the Indenture, the SFPUC covenants and agrees to transfer to the Trustee for deposit in the Interest Account of each applicable Bond Fund all Refundable Credits received by the SFPUC.

In accordance with the Agreements, Hetch Hetchy maintains certain restricted cash and investment balances in trust.

(a) Hetchy Water has the following restricted assets held in trust as of June 30, 2017 and 2016:

	2017	2016
Cash and investments with City Treasury:		
Hetch Hetchy bond construction fund	$ 4,154	1,669
Total restricted assets	$ 4,154	1,669

(b) Hetchy Power has the following restricted assets held in trust as of June 30, 2017 and 2016:

	2017	2016
Cash and investments with City Treasury:		
Hetch Hetchy bond construction fund	$ 35,998	38,180
Cash and investments outside City Treasury:		
2009 Series C Certificates of participation - 525 Golden Gate	236	236
2009 Series D Certificates of participation - 525 Golden Gate	935	935
2015 Series A Revenue Bonds	2,113	3,581
2015 Series B Revenue Bonds	497	758
Commercial Paper	2	—
Total restricted cash and investments outside City Treasury	3,783	5,510
Interest receivable:		
Hetch Hetchy bond construction fund	268	131
Total restricted assets	$ 40,049	43,821

Restricted assets listed above as cash and investments with City Treasury are held in subfunds accounts within the Hetch Hetchy Revenue Fund.

(6) Short-Term Debt

Effective December 2015, under Charter Sections 9.107(6) and 9.107(8), the Commission and Board of Supervisors authorized the issuance of up to $90,000 in commercial paper notes for the purpose of reconstruction or replacement of existing generation, transmission, and distribution facilities of Hetchy Power. Interest rates for the commercial paper ranged from 0.72% to 0.93% in fiscal year 2017. The Enterprise had $20,058 and $0 commercial paper outstanding as of June 30, 2017 and June 30, 2016, respectively.

(Continued)

(7) Changes in Long-Term Liabilities

Total Hetch Hetchy long-term liability activities for the years ended June 30, 2017 and 2016 are as follows:

	Interest rate*	Maturity (Calendar Year)	2016	Additions	Reductions	2017	Due within one year
Bonds:							
Clean Renewable Energy Bonds	0.00 %	2022	$ 2,949	—	(422)	2,527	422
Qualified Energy Conservation Bonds	4.74	2027	6,334	—	(517)	5,817	523
New Clean Renewable Energy Bonds 2012	4.74	2020	2,661	—	(822)	1,839	556
New Clean Renewable Energy Bonds 2015	4.62	2032	4,100	—	(223)	3,877	226
2015 Series A Revenue Bonds	4.00 - 5.00	2045	32,025	—	—	32,025	—
2015 Series B Revenue Bonds	3.00 - 4.00	2026	7,530	—	—	7,530	710
Less issuance discount			(88)	—	14	(74)	—
Add issuance premiums			4,599	—	(240)	4,359	—
Total bonds payable			60,110	—	(2,210)	57,900	2,437
2009 Series C Certificates of participation (COPs)	2.00 - 5.00	2022	2,574	—	(315)	2,259	331
2009 Series C COPs issuance premiums			114	—	(28)	86	—
2009 Series D COPs (Build America)	6.36 - 6.49	2041	12,593	—	—	12,593	—
Other post-employment benefits obligations			25,169	4,888	(1,835)	28,222	—
Net pension liability			26,874	48,774	(6,236)	69,412	—
Accrued vacation and sick leave			3,807	1,916	(2,100)	3,623	2,154
Accrued workers' compensation			2,964	861	(856)	2,969	548
Damage claims liability			1,861	3,146	(2,569)	2,438	991
Total			$ 136,066	59,585	(16,149)	179,502	6,461

* After adjusting for the federal interest subsidy, the true interest cost for the certificates of participation 2009 Series D issued as Build America Bonds is 4.3%, 1.2% for the QECBs, 1.5% for the 2012 NCREBs, and 1.4% for the 2015 NCREBs.

	Interest rate*	Maturity (Calendar Year)	2015	Additions	Reductions	2016	Due within one year
Bonds:							
Clean Renewable Energy Bonds	0.00 %	2022	$ 3,371	—	(422)	2,949	422
Qualified Energy Conservation Bonds	4.74	2027	6,845	—	(511)	6,334	517
New Clean Renewable Energy Bonds 2012	4.74	2021	5,674	—	(3,013)	2,661	530
New Clean Renewable Energy Bonds 2015	4.62	2032	—	4,100	—	4,100	223
2015 Series A Revenue Bonds	4.00 - 5.00	2045	32,025	—	—	32,025	—
2015 Series B Revenue Bonds	3.00 - 4.00	2026	7,530	—	—	7,530	—
Less issuance discount			(102)	—	14	(88)	—
Add issuance premiums			4,832	—	(233)	4,599	—
Total bonds payable			60,175	4,100	(4,165)	60,110	1,692
2009 Series C Certificates of participation (COPs)	2.00 - 5.00	2022	2,873	—	(299)	2,574	315
2009 Series C COPs issuance premiums			146	—	(32)	114	—
2009 Series D COPs (Build America)	6.36 - 6.49	2041	12,593	—	—	12,593	—
Other post-employment benefits obligations			22,845	4,011	(1,687)	25,169	—
Net pension liability			20,537	13,220	(6,883)	26,874	—
Accrued vacation and sick leave			3,544	2,186	(1,923)	3,807	2,275
Accrued workers' compensation			2,629	1,120	(785)	2,964	555
Damage claims liability			3,335	2,726	(4,200)	1,861	598
Total			$ 128,677	27,363	(19,974)	136,066	5,435

* After adjusting for the federal interest subsidy, the true interest cost for the certificates of participation 2009 Series D issued as Build America Bonds is 4.3%, 1.2% for the QECBs, 1.5% for the 2012 NCREBs, and 1.4% for the 2015 NCREBs.

(Continued)

a) Hetchy Water's long-term liability activities for the years ended June 30, 2017 and 2016 are as follows:

	2016	Additions	Reductions	2017	Due within one year
Other post-employment benefits obligations	$ 9,945	2,157	(822)	11,280	—
Net pension liability	12,093	21,948	(2,806)	31,235	—
Accrued vacation and sick leave	1,287	425	(524)	1,188	741
Accrued workers' compensation	997	224	(222)	999	185
Damage claims liability	353	1,082	(849)	586	218
Total	$ 24,675	25,836	(5,223)	45,288	1,144

	2015	Additions	Reductions	2016	Due within one year
Other post-employment benefits obligations	$ 8,899	1,805	(759)	9,945	—
Net pension liability	9,242	5,948	(3,097)	12,093	—
Accrued vacation and sick leave	1,169	664	(546)	1,287	806
Accrued workers' compensation	846	378	(227)	997	188
Damage claims liability	402	416	(465)	353	127
Total	$ 20,558	9,211	(5,094)	24,675	1,121

b) Hetchy Power's long-term liability activities for the years ended June 30, 2017 and 2016 are as follows:

	Interest rate*	Maturity (Calendar Year)	2016	Additions	Reductions	2017	Due within one year
Bonds:							
Clean Renewable Energy Bonds	0.00 %	2022	$ 2,949	—	(422)	2,527	422
Qualified Energy Conservation Bonds	4.74	2027	6,334	—	(517)	5,817	523
New Clean Renewable Energy Bonds 2012	4.74	2020	2,661	—	(822)	1,839	556
New Clean Renewable Energy Bonds 2015	4.62	2032	4,100	—	(223)	3,877	226
2015 Series A Revenue Bonds	4.00 - 5.00	2045	32,025	—	—	32,025	—
2015 Series B Revenue Bonds	3.00 - 4.00	2026	7,530	—	—	7,530	710
Less issuance discount			(88)	—	14	(74)	—
Add issuance premiums			4,599	—	(240)	4,359	—
Total bonds payable			60,110	—	(2,210)	57,900	2,437
2009 Series C Certificates of participation (COPs)	2.00 - 5.00	2022	2,574	—	(315)	2,259	331
2009 Series C COPs issuance premiums			114	—	(28)	86	—
2009 Series D COPs (Build America)	6.36 - 6.49	2041	12,593	—	—	12,593	—
Other post-employment benefits obligations			15,224	2,637	(1,006)	16,855	—
Net pension liability			14,781	26,826	(3,430)	38,177	—
Accrued vacation and sick leave			2,520	1,453	(1,576)	2,397	1,388
Accrued workers' compensation			1,967	637	(634)	1,970	363
Damage claims liability			1,508	2,064	(1,720)	1,852	773
Total			$ 111,391	33,617	(10,919)	134,089	5,292

* After adjusting for the federal interest subsidy, the true interest cost for the certificates of participation 2009 Series D issued as Build America Bonds is 4.3%, 1.2% for the QECBs, 1.5% for the 2012 NCREBs, and 1.4% for the 2015 NCREBs.

(Continued)

	Interest rate*	Maturity (Calendar Year)	2015	Additions	Reductions	2016	Due within one year
Bonds:							
Clean Renewable Energy Bonds	0.00 %	2022	$ 3,371	—	(422)	2,949	422
Qualified Energy Conservation Bonds	4.74	2027	6,845	—	(511)	6,334	517
New Clean Renewable Energy Bonds 2012	4.74	2021	5,674	—	(3,013)	2,661	530
New Clean Renewable Energy Bonds 2015	4.62	2032	—	4,100	—	4,100	223
2015 Series A Revenue Bonds	4.00 - 5.00	2045	32,025	—	—	32,025	—
2015 Series B Revenue Bonds	3.00 - 4.00	2026	7,530	—	—	7,530	—
Less issuance discount			(102)	—	14	(88)	—
Add issuance premiums			4,832	—	(233)	4,599	—
Total bonds payable			60,175	4,100	(4,165)	60,110	1,692
2009 Series C Certificates of participation (COPs)	2.00 - 5.00	2022	2,873	—	(299)	2,574	315
2009 Series C COPs issuance premiums			146	—	(32)	114	—
2009 Series D COPs (Build America)	6.36 - 6.49	2041	12,593	—	—	12,593	—
Other post-employment benefits obligations			13,946	2,206	(928)	15,224	—
Net pension liability			11,295	7,272	(3,786)	14,781	—
Accrued vacation and sick leave			2,375	1,522	(1,377)	2,520	1,469
Accrued workers' compensation			1,783	742	(558)	1,967	367
Damage claims liability			2,933	2,310	(3,735)	1,508	471
Total			$ 108,119	18,152	(14,880)	111,391	4,314

* After adjusting for the federal interest subsidy, the true interest cost for the certificates of participation 2009 Series D issued as Build America Bonds is 4.3%, 1.2% for the QECBs, 1.5% for the 2012 NCREBs, and 1.4% for the 2015 NCREBs.

c) CleanPowerSF's long-term liability activities for the year ended June 30, 2017 are as follows:

	2016	Additions	Reductions	2017	Due within one year
Other post-employment benefits obligations	$ —	94	(7)	87	—
Accrued vacation and sick leave	—	38	—	38	25
Total	$ —	132	(7)	125	25

(a) Clean Renewable Energy Bonds

In November 2008, Hetchy Power issued $6,325 of taxable CREBs to finance the installation of solar energy equipment on City-owned facilities, including Chinatown Branch Library, Maxine Hall Medical Center, City Distribution Division Warehouse, North Point Wastewater Plant, Chinatown Public Health Center, Municipal Transportation Agency Woods, and Municipal Transportation Agency Ways and Structures. The CREBs were non-rated and privately-placed with Bank of America Leasing. The net effective interest rate on the CREBs, after the federal tax subsidy, is 0% through 2022. Hetchy Power began making principal payments in the amount of $422 on December 15, 2008 and will continue annual payments for 15 years until December 15, 2022. Funding for these payments will be guaranteed by net power revenues. Interest payments are not required, since the effective equivalent of interest on the bonds is paid in the form of federal tax credits in lieu of interest paid by the issuer.

(Continued)

The future annual debt service relating to the CREBs outstanding as of June 30, 2017 is as follows:

Hetchy Power - **Clean Renewable Energy Bonds**

Fiscal years ending June 30:	Principal
2018	$ 422
2019	422
2020	422
2021	422
2022	422
2023	417
	2,527
Less: Current portion	(422)
Less: Unamortized bond discount	(74)
Long-term portion as of June 30, 2017	$ 2,031

(b) Qualified Energy Conservation Bonds

In December 2011, Hetchy Power issued $8,291 of taxable QECBs. The QECBs were issued to fund certain qualified green components for the SFPUC's 525 Golden Gate Headquarters project. The QECBs were non-rated and privately placed with Bank of America Leasing. The net effective interest rate on the QECBs, after the federal tax subsidy, is 1.2% through 2028.

The future annual debt service relating to the QECBs outstanding as of June 30, 2017 is as follows:

Hetchy Power - **Qualified Energy Conservation Bonds**

Fiscal years ending June 30:	Principal	Interest before subsidy	Federal interest subsidy*	Interest net of subsidy
2018	$ 523	270	(188)	82
2019	529	245	(170)	75
2020	536	219	(153)	66
2021	542	194	(135)	59
2022	549	168	(117)	51
2023-2027	2,844	444	(309)	135
2028	294	7	(4)	3
	5,817	1,547	(1,076)	471
Less: Current portion	(523)			
Long-term portion as of June 30, 2017	$ 5,294			

* Federal interest subsidy is reduced by 6.9%, or a total reduction of $80, due to sequestration per IRS notice dated August 3, 2016.

(c) New Clean Renewable Energy Bonds 2012

In April 2012, Hetchy Power issued $6,600 of taxable NCREBs. The NCREBs were issued to fund certain qualified facilities that provide clean, renewable energy at Davies Symphony Hall, City Hall, and University Mound Reservoir. The NCREBs were non-rated and privately placed with Banc of America Leasing. The net effective interest rate on the NCREBs, after the federal tax subsidy, is 1.5% through 2021. $288 and $2,523 were repaid in fiscal year 2017 and 2016, respectively.

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The future annual debt service relating to the 2012 NCREBs outstanding as of June 30, 2017 is as follows:

Hetchy Power - **2012 New Clean Renewable Energy Bonds**

Fiscal years ending June 30:	Principal	Interest before subsidy	Federal interest subsidy*	Interest net of subsidy
2018	$ 556	81	(52)	29
2019	570	54	(35)	19
2020	583	27	(17)	10
2021	130	3	(2)	1
	1,839	165	(106)	59
Less: Current portion	(556)			
Long-term portion as of June 30, 2017	$ 1,283			

* Federal interest subsidy is reduced by 6.9%, or a total reduction of $8, due to sequestration per IRS notice dated August 3, 2016.

(d) New Clean Renewable Energy Bonds 2015

In October 2015, Hetchy Power issued $4,100 of taxable 2015 NCREBs. The 2015 NCREBs were issued to fund certain qualified clean, renewable energy solar generation facilities at the Marina Middle School and the San Francisco Police Academy. The 2015 NCREBs were non-rated and privately placed with Banc of America Leasing. The net effective interest rate on the 2015 NCREBs, after the federal tax subsidy, is 1.4% through 2033.

The future annual debt service relating to the 2015 NCREBs outstanding as of June 30, 2017 is as follows:

Hetchy Power - **2015 New Clean Renewable Energy Bonds**

Fiscal years ending June 30:	Principal	Interest before subsidy	Federal interest subsidy*	Interest net of subsidy
2018	$ 226	177	(115)	62
2019	229	166	(108)	58
2020	232	155	(101)	54
2021	235	145	(94)	51
2022	239	134	(87)	47
2023-2027	1,244	500	(326)	174
2028-2032	1,333	203	(133)	70
2033	139	3	(2)	1
	3,877	1,483	(966)	517
Less: Current portion	(226)			
Long-term portion as of June 30, 2017	$ 3,651			

* Federal interest subsidy is reduced by 6.9%, or a total reduction of $72, due to sequestration per IRS notice dated August 3, 2016.

(e) Power Revenue Bonds 2015 Series A (Green) and Series B

In May 2015, Hetchy Power issued tax-exempt revenue bonds, 2015 Series A (Green) in the amount of $32,025 with interest rates ranging from 4.0% to 5.0% and 2015 Series B in the amount of $7,530 with interest rates ranging from 3.0% to 4.0%. Proceeds from the bonds were used to finance reconstruction or replacement of existing facilities of the SFPUC's Hetch Hetchy project, to fund capitalized interest on the 2015 Series AB Bonds, to fund a debt service reserve account for the 2015

(Continued)

Series AB Bonds, and to pay costs of issuance of the 2015 Series AB bonds. The bonds were rated "A+" and "AA-" by S&P and Fitch, respectively. Bonds mature through November 1, 2045. The true interest cost is 3.95%. As of June 30, 2017, the outstanding principal amount was $39,555.

The future annual debt service relating to the 2015 Series AB Bonds outstanding as of June 30, 2017 are as follows:

Hetchy Power - **Power Revenue Bonds 2015 Series A (Green)**

Fiscal years ending June 30:	Principal	Interest	Total
2018	$ —	1,593	1,593
2019	—	1,593	1,593
2020	—	1,593	1,593
2021	—	1,593	1,593
2022	—	1,593	1,593
2023-2027	830	7,948	8,778
2028-2032	5,645	7,121	12,766
2033-2037	7,205	5,522	12,727
2038-2042	9,190	3,482	12,672
2043-2046	9,155	943	10,098
	32,025	32,981	65,006
Add: Unamortized bond premium	3,826		
Long-term portion as of June 30, 2017	$ 35,851		

Hetchy Power - **Power Revenue Bonds 2015 Series B**

Fiscal years ending June 30:	Principal	Interest	Total
2018	$ 710	267	977
2019	730	246	976
2020	755	220	975
2021	785	189	974
2022	815	157	972
2023-2027	3,735	307	4,042
	7,530	1,386	8,916
Less: Current portion	(710)		
Add: Unamortized bond premium	533		
Long-term portion as of June 30, 2017	$ 7,353		

(f) Certificates of Participation Issued for the 525 Golden Gate Headquarters Building

In October 2009, the City issued $167,670 in certificates of participation to fund construction of the headquarters of the SFPUC at 525 Golden Gate Avenue. The 2009 Series C certificates were issued for $38,120 and 2009 Series D for $129,550 as "Build America Bonds" (BABs) on a taxable basis under the 2009 American Recovery and Reinvestment Act. The 2009 Series C certificates carry interest rates ranging from 2.0% to 5.0% and mature on November 1, 2022. The 2009 Series D certificates carry interest rates ranging from 6.4% to 6.5% and mature on November 1, 2041. After adjusting Series D for the federal interest subsidy, the true interest cost averages 3.4% and 4.3% for Series C and Series D certificates, respectively.

Under the terms of a Memorandum of Understanding between the City and the SFPUC dated October 1, 2009, the City conveyed the real property to the Trustee, the Bank of New York Mellon Trust Company, N.A., which was replaced by U.S. Bank in March 2014 under a property lease in exchange for the proceeds of the sale of the certificates. The Trustee has leased the property back to the City for the City's use under a project lease. The City is obligated under the project lease to pay

(Continued)

base rental payments and other payments to the Trustee each year during the 32-year term of the project lease. The Commission makes annual base rental payments to the City for the building equal to annual debt service on the certificates. It is anticipated these lease costs will be offset with reductions in costs associated with current office rental expense. Hetchy Power's share is reflected on the Hetchy Power fund statements.

The Power, Water, and Wastewater Enterprises have ownership interest in the building equal to their projected usage of space as follows: Water (73%), Wastewater (15%), and Power (12%). Similarly, each Enterprise is responsible for a portion of the annual base rental payment based on their ownership percentages less contributed equity. The percentage share of base rental payments for the Enterprises is as follows: Water (71.4%), Wastewater (18.9%), and Power (9.7%).

The future annual debt service relating to the certificates of participation 2009 Series C outstanding as of June 30, 2017 is as follow:

Hetchy Power - **Certificates of Participation 2009 Series C (Tax Exempt)**

Fiscal years ending June 30:	Principal	Interest	Total
2018	$ 331	105	436
2019	348	88	436
2020	366	70	436
2021	384	51	435
2022	405	31	436
2023	425	10	435
	2,259	355	2,614
Less: Current portion	(331)		
Add: Unamortized bond premium	86		
Long-term portion as of June 30, 2017	$ 2,014		

The following table presents the future annual debt service relating to the certificates of participation 2009 Series D outstanding as of June 30, 2017. The federal interest subsidy represents 35% of the interest, excluding sequestration:

Hetchy Power - **Certificates of Participation 2009 Series D (Taxable BABs)**

Fiscal years ending June 30:	Principal	Interest before subsidy	Federal interest subsidy*	Interest net of subsidy
2018	$ —	812	(265)	547
2019	—	812	(265)	547
2020	—	812	(265)	547
2021	—	812	(265)	547
2022	—	812	(265)	547
2023-2027	1,894	3,828	(1,247)	2,581
2028-2032	2,852	3,020	(984)	2,036
2033-2037	3,514	1,995	(650)	1,345
2038-2042	4,333	728	(235)	493
Total		13,631	(4,441)	9,190
Long-term portion as of June 30, 2017	$ 12,593			

*Federal interest subsidy is reduced by 6.9%, or a total reduction of $329, due to sequestration per IRS notice dated August 3, 2016.

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(8) Revenue Pledge

Hetchy Power has pledged future power revenues to repay the 2008 CREBs, the 2011 QECBs, the 2012 NCREBs, and the 2015 NCREBs. Additionally, Hetchy Power has pledged future power revenues for 2015 Series AB power revenue bonds. Proceeds from the bonds provided financing for various capital construction and facility energy efficiency projects. The Series 2015 AB power revenue bonds are payable through fiscal year 2046 and are solely payable from net revenues of Hetchy Power on a senior lien basis to the 2008 CREBs, the 2011 QECBs, the 2012 NCREBs, and the 2015 NCREBs.

The original amount of bonds issued, total principal and interest remaining, principal and interest paid during fiscal years 2017 and 2016, applicable net revenues, and funds available for debt service are as follows:

Hetchy Power (excluding CleanPowerSF)	2017	2016
Bonds issued with revenue pledge	$ 64,871	64,871
Principal and interest remaining due at the end of the year	91,177	95,688
Principal and interest paid during the year	2,293	2,014
Net revenues for the year ended June 30	31,229	19,070
Funds available for debt service	63,428	33,044

(9) Other Non-Operating Revenues – Trans Bay Cable Construction and Licensing Fees

In 2007, the Board of Supervisors adopted the resolution to enter into two non-exclusive licenses with the Trans Bay Cable LLC (the Licensee) for the Trans Bay Cable Project. The Licensee proposed to install, operate, and maintain approximately 53 miles of high-voltage direct current transmission cable running from the City of Pittsburg to the City. The first license is a Construction License to install a 400 MW high-voltage transmission line, with a four-year term. The Licensee has paid Hetchy Power $3,500 in Renewable Energy, Transmission and Grid Reliability to use the payments for study and development of two City-owned transmission projects, a Newark-San Francisco project, and a Potrero-Embarcadero project. Of the $3,500, only $1,902 has been spent to date. For fiscal years ended June 30, 2017 and 2016, expenses were $621 and $2, respectively.

The second license is an operational license for operation of the transmission line with 25-year term and an option to renew for 10 years. The Licensee agrees to pay Hetchy Power in excess of $20,000 in 10 separate installments of $2,000 annually with adjustments for inflation, as the "San Francisco Electric Reliability Payment" to implement, advance, promote, or enhance policies and projects consistent with City Energy Policies. The project came on line November 29, 2010, and Hetchy Power received the first installment of $2,000. As of June 30, 2017, cumulative revenues to date of $15,178 were recorded, with $2,348 and $2,279 recorded in fiscal years 2017 and 2016, respectively. Per agreement, the SFPUC shall consult with Departments of Environment and Public Health, as well as community members, including the Power Plant Task Force, in developing its proposals to the Board of Supervisors on how to spend the San Francisco Electricity Reliability Payment, and shall consider specifically renewable energy, conservation, and environmental health programs, which benefit low-income, at-risk, and environmentally disadvantaged communities. The San Francisco Electricity Reliability Payment shall also be partly used for green jobs training and placement programs, which benefit low-income, at-risk, and environmentally disadvantaged communities. As of June 30, 2017, cumulative expenses of $5,130 have been incurred, with $611 and $1,143 in fiscal years 2017 and 2016, respectively.

(Continued)

(10) Employee Benefits

(a) Pension Plan

Hetch Hetchy participates in a cost-sharing multiple-employer defined benefit pension plan (the Plan). The Plan is administered by the San Francisco City and County Employees' Retirement System (SFERS). For purposes of measuring the net pension liability, deferred outflows/inflows of resources related to pensions, pension expense, information about the fiduciary net position of the SFERS plans, and additions to/deductions from the Plan's fiduciary net position have been determined on the same basis as they are reported by Cheiron, the consulting actuary for the Plan. Benefit payments (including refunds of employee contributions) are recognized when currently due and payable in accordance with the benefit terms. Investments are reported at fair value.

GASB Statement No. 68 requires that the reported results must pertain to liability and asset information within certain defined timeframes. For this report, the following timeframes are used:

San Francisco Employees' Retirement System (SFERS) - Cost Sharing	
Fiscal year 2017	
Valuation Date (VD)	June 30, 2015 updated to June 30, 2016
Measurement Date (MD)	June 30, 2016
Measurement Period (MP)	July 1, 2015 to June 30, 2016
Fiscal year 2016	
Valuation Date (VD)	June 30, 2014 updated to June 30, 2015
Measurement Date (MD)	June 30, 2015
Measurement Period (MP)	July 1, 2014 to June 30, 2015

The City is an employer of the plan with a proportionate share of 94.22% as of June 30, 2016 (MD), and 93.90% as of June 30, 2015 (MD). Hetch Hetchy's allocation percentage was determined based on its employer contributions divided by the City's total employer contributions for fiscal year 2016 and 2015. Hetch Hetchy's net pension liability, deferred outflows/inflows of resources related to pensions, amortization of deferred outflows/inflows and pension expense to each department is based on its allocated percentage. Hetch Hetchy's allocation of the City's proportionate share was 1.27% as of the June 30, 2016 and 1.26% as of June 30, 2015 (MD).

Plan Description – The Plan provides basic service retirement, disability, and death benefits based on specified percentages of defined final average monthly salary and provides annual cost-of-living adjustments (COLA) after retirement. The Plan also provides pension continuation benefits to qualified survivors. The City Charter and the Administrative Code are the authorities which establish and amend the benefit provisions and employer obligations of the Plan. The Retirement System issues a publicly available financial report that includes financial statements and required supplementary information for the Plan. That report may be obtained by writing to the San Francisco Employees' Retirement System, 1145 Market Street, 5th Floor, San Francisco, CA 94103 or by calling (415) 487-7000.

Benefits – The Retirement System provides service retirement, disability and death benefits based on specified percentages of defined final average monthly salary and annual COLA after retirement. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan. The Retirement System pays benefits according to the category of employment and the type of benefit coverage provided by the City. The four main categories of Plan members are:

a) Miscellaneous Non-Safety Members – staff, operational, supervisory, and all other eligible employees who are not in special membership categories.

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b) Sheriff's Department and Miscellaneous Safety members – sheriffs assuming office on and after January 7, 2012, and undersheriffs, deputized personnel of the Sheriff's department, and miscellaneous safety employees hired on and after January 7, 2012.
c) Firefighter Members – firefighters and other employees whose principal duties are in fire prevention and suppression work or who occupy positions designated by law as firefighter member positions.
d) Police Members – police officers and other employees whose principal duties are in active law enforcement or who occupy positions designated by law as police member positions.

The membership groups and the related service retirement benefits are included in the Notes to the Basic Financial Statements of San Francisco Employees' Retirement System.

All members are eligible to apply for a disability retirement benefit, regardless of age, when they have 10 or more years of credited service and they sustain an injury or illness that prevents them from performing their duties. Safety members are eligible to apply for an industrial disability retirement benefit from their first day on the job if their disability is caused by an illness or injury that they receive while performing their duties.

All retired members receive a benefit adjustment each July 1, which is the Basic COLA. The majority of adjustments are determined by changes in Consumer Price Index with increases capped at 2%. The Plan provides for a Supplemental COLA in years when there are sufficient "excess" investment earnings in the Plan. The maximum benefit adjustment each July 1 is 3.5% including the Basic COLA. Effective July 1, 2012, voters approved changes in the criteria for payment of the Supplemental COLA benefit, so that Supplemental COLAs would only be paid when the Plan is also fully funded on a market value of assets basis. Certain provisions of this voter-approved proposition were challenged in the Courts. A decision by the California Courts modified the interpretation of the proposition. Effective July 1, 2012, members who retired before November 6, 1996 will receive a Supplemental COLA only when the Plan is also fully funded on a market value of assets basis. However, the "full funding" requirement does not apply to members who retired on or after November 6, 1996 and were hired before January 7, 2012. For all members hired before January 7, 2012, all Supplemental COLAs paid to them in retirement benefits will continue into the future even where an additional Supplemental COLA is not payable in any given year. For members hired on and after January 7, 2012, a Supplemental COLA will only be paid to retirees when the Plan is fully funded on a market value of asset basis and in addition for these members, Supplemental COLAs will not be permanent adjustments to retirement benefits. That is, in years when a Supplemental COLA is not paid, all previously paid Supplemental COLAs will expire.

Funding and Contribution Policy – Contributions are made to the basic plan by both the City and the participating employees. Employee contributions are mandatory as required by the Charter. Employee contribution rates for fiscal year 2017 varied from 7.5% to 12.0% as a percentage of gross covered salary. Most employee groups agreed through collective bargaining for employees to contribute the full amount of the employee contributions on a pretax basis. The City is required to contribute at an actuarially determined rate. Based on the July 1, 2015 actuarial report, the required employer contribution rate for fiscal year 2017 was 17.90% to 21.40%.

Employer contributions and employee contributions made by the employer to the Plan are recognized when due and the employer has made a formal commitment to provide the contributions. The City's proportionate share of employer contributions recognized by the Retirement System in fiscal years ended June 30, 2016 and 2015 (measurement periods) were $496,343 and $556,511, respectively. Hetchy Water's allocation of employer contributions were $2,806 and $3,097 or 45%,

and Hetchy Power's allocation of employer contributions were $3,430 and $3,786 or 55%, respectively, for fiscal year 2016 and 2015 (measurement periods).

Pension Liabilities, Pension Expenses, and Deferred Outflows and Inflows of Resources Related to Pensions

Fiscal Year 2017

As of June 30, 2017, the City reported net pension liabilities for its proportionate share of the pension liability of the Plan of $5,476,653. The City's net pension liability for the Plan is measured as the proportionate share of the net pension liability. The net pension liability of the Plan is measured as of June 30, 2016 (MD), and the total pension liability for the Plan used to calculate the net pension liability was determined by an actuarial valuation as of June 30, 2015 rolled forward to June 30, 2016 using standard update procedures. The City's proportion of the net pension liability was based on a projection of the City's long-term share of contributions to the pension plan relative to the projected contributions of all participating employers, actuarially determined. Hetch Hetchy's allocation of the City's proportionate share of the net pension liability for each Plan as of June 30, 2017 and 2016 (reporting year) was $69,412 and $26,874 respectively. Hetchy Water's allocation of the City's proportionate share of the net pension liability for each Plan as of June 30, 2017 and 2016 (reporting year) was $31,235 and $12,093, respectively or 45% and Hetchy Power's allocation was $38,177 and $14,781, respectively, or 55% of the total. During the measurement year 2016, the increase in service costs, interest costs, change in benefits, change in assumptions, and difference between projected and actual investment earnings increased total pension liability. This was only partially offset by an increase in the discount rate, contributions, investment income, and actuarial experience gains, resulting in an overall increase in net pension liability.

For the years ended June 30, 2017, the City's recognized pension expense was $1,808,992 including amortization of deferred outflow/inflow related pension items. Hetch Hetchy's allocation of pension expense including amortization of deferred outflow/inflow related pension items were $23,605 for fiscal year 2017. Pension expense increased significantly, largely due to the impact of changes in benefits, namely the updated Supplemental COLA assumptions and amortization of deferred inflows/outflows.

At June 30, 2017, Hetch Hetchy's reported deferred outflows of resources and deferred inflows of resources related to pensions were the following:

	Schedules of Deferred Outflows and Inflows of Resources					
	Deferred Outflows of Resources			Deferred Inflows of Resources		
Fiscal Year 2017	Hetchy Water	Hetchy Power	Total	Hetchy Water	Hetchy Power	Total
Pension contribution subsequent to the measurement date	$ 2,961	3,618	6,579	—	—	—
Differences between expected and actual experience	—	—	—	1,152	1,406	2,558
Changes in assumptions	5,373	6,568	11,941	157	193	350
Net difference between projected and actual earnings on pension plan investments	4,270	5,220	9,490	—	—	—
Change in employer's proportion	55	67	122	29	36	65
Total	**$ 12,659**	**15,473**	**28,132**	**1,338**	**1,635**	**2,973**

(Continued)

Amounts reported as deferred outflows, exclusive of contributions made after the measurement date, and deferred inflows of resources will be amortized annually and recognized in pension expense as follows:

Fiscal years	Deferred Outflows/(Inflows) of Resources		
	Hetchy Water	Hetchy Power	Total
2018	$ 1,230	1,505	2,735
2019	1,230	1,505	2,735
2020	3,361	4,108	7,469
2021	2,539	3,102	5,641
	$ 8,360	10,220	18,580

Fiscal Year 2016

As of June 30, 2016, the City reported net pension liabilities for its proportionate share of the pension liability of the Plan of $2,156,049. The City's net pension liability for the Plan is measured as the proportionate share of the net pension liability. The net pension liability of the Plan is measured as of June 30, 2015, and the total pension liability for the Plan used to calculate the net pension liability was determined by an actuarial valuation as of June 30, 2014 rolled forward to June 30, 2015 using standard update procedures. The City's proportion of the net pension liability was based on a projection of the City's long-term share of contributions to the pension plan relative to the projected contributions of all participating employers, actuarially determined. Hetch Hetchy's allocation of the City's proportionate share of the net pension liability for the Plan as of June 30, 2015 (MP) and 2014 (MP) were $26,874 and $20,537, respectively. Hetchy Water's share of the net pension liability for fiscal years 2015 (MP) and 2014 (MP) were $12,093 and $9,242, respectively or 45% and Hetchy Power's share was $14,781 and $11,295, respectively, or 55% of the total. During the measurement period fiscal year, there were no changes to benefits. The increase in service costs, interest costs, and decrease in the discount rate increased total pension liability and were only partially offset by contributions, investment income, and actuarial experience gains, resulting in an overall increase in net pension liability.

(Continued)

For the years ended June 30, 2016, the City's recognized pension expense was $106,499, including amortization of deferred outflow/inflow related pension items. Hetch Hetchy's allocation of pension expense including amortization of deferred outflows and inflows related pension items was $1,410 for fiscal year 2016. As of June 30, 2016, the Hetch Hetchy's reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Schedules of Deferred Outflows and Inflows of Resources				
	Deferred Outflows of Resources			Deferred Inflows of Resources		
Fiscal Year 2016	Hetchy Water	Hetchy Power	**Total**	Hetchy Water	Hetchy Power	**Total**
Pension contribution subsequent to the measurement date	$ 2,806	3,430	6,236	—	—	—
Differences between expected and actual experience	—	—	—	841	1,028	1,869
Changes in assumptions	921	1,126	2,047	230	281	511
Net difference between projected and actual earnings on pension plan investments	—	—	—	2,791	3,412	6,203
Change in employer's proportion	19	22	41	43	52	95
Total	$ **3,746**	**4,578**	**8,324**	**3,905**	**4,773**	**8,678**

Amounts reported as deferred outflows, exclusive of contributions made after the measurement date, and deferred inflows of resources will be amortized annually and recognized in pension expense as follows:

Fiscal years	**Deferred Outflows/(Inflows) of Resources**		
	Hetchy Water	Hetchy Power	**Total**
2017	$ (1,260)	(1,539)	(2,799)
2018	(1,260)	(1,539)	(2,799)
2019	(1,260)	(1,539)	(2,799)
2020	815	992	1,807
	$ (2,965)	(3,625)	(6,590)

Actuarial Assumptions

Fiscal Year 2017

A summary of the actuarial assumptions and methods used to calculate the Total Pension Liability as of June 30, 2016 (measurement period) is provided below, including any assumptions that differ from those used in the July 1, 2015 actuarial valuation. Refer to the July 1, 2015 actuarial valuation report for a complete description of all other assumptions, which can be found on the Retirement System's website http://mysfers.org.

Key Actuarial Assumptions	
Valuation Date	June 30, 2015 updated to June 30, 2016
Measurement Date	June 30, 2016
Actuarial Cost Method	Entry-Age Normal Cost
Expected Rate of Return	7.50%
Municipal Bond Yield	3.85% as of June 30, 2015
	2.85% as of June 30, 2016
	Bond Buyer 20-Bond GO Index, July 2, 2015 and June 30, 2016
Inflation	3.25%
Salary Increase	3.75% plus merit component based on employee classification and years of service
Discount Rate	7.46% as of June 30, 2015
	7.50% as of June 30, 2016
Administrative Expenses	0.45% of payroll as of June 30, 2015
	0.60% of payroll as of June 30, 2016

		Old Miscellaneous and all New Plans	Old Police & Fire, pre 7/1/75	Old Police & Fire, Charters A8.595 and A8.596	Old Police & Fire, Charters A8.559 and A8.585
Basic COLA	June 30, 2015	2.00%	3.00%	4.00%	5.00%
	June 30, 2016	2.00%	2.70%	3.30%	4.40%

Mortality rates for active members and healthy annuitants were based upon adjusted Employee and Healthy Annuitant CalPERS mortality tables projected generationally from the 2009 base year using a modified version of the MP-2015 projection scale.

Fiscal Year 2016

A summary of the actuarial assumptions and methods used to calculate the total pension liability as of June 30, 2015 is provided below, including any assumptions that differ from those used in the July 1, 2014 actuarial valuation. Refer to the July 1, 2014 actuarial valuation report for a complete description of all other assumptions, which can be found on the Retirement System's website http://mysfers.org.

Key Actuarial Assumptions	
Valuation Date	June 30, 2014 updated to June 30, 2015
Measurement Date	June 30, 2015
Actuarial Cost Method	Entry-Age Normal Cost
Expected Rate of Return	7.50%
Municipal Bond Yield	4.31% as of June 30, 2014
	3.85% as of June 30, 2015
	Bond Buyer 20-Bond GO Index, July 2, 2014 and June 30, 2015
Inflation	3.25%
Salary Increase	3.75% plus merit component based on employee classification and years of service
Discount Rate	7.58% as of June 30, 2014
	7.46% as of June 30, 2015
Administrative Expenses	0.45% of payroll as of June 30, 2015

	Old Miscellaneous and all New Plans	Old Police & Fire, pre 7/1/75	Old Police & Fire, Charters A8.595 and A8.596	Old Police & Fire, Charters A8.559 and A8.585
Basic COLA	2.00%	3.00%	4.00%	5.00%

(Continued)

Mortality rates for active members were based upon the RP-2000 Employee Tables for Males and Females projected using Scale AA to 2030 for females and to 2005 for males. Mortality rates for healthy annuitants were based upon the RP-2000 Healthy Annuitant Tables for Males and Females projected using Scale AA to 2020.

Discount Rate

Fiscal Year 2017

The beginning and end of year measurements are based on different assumptions and contribution methods that result in different discount rates. The discount rate was 7.50% as of June 30, 2016 (measurement date) and 7.46% as of June 30, 2015 (measurement date).

The discount rate used to measure the Total Pension Liability as of the June 30, 2016 measurement date was 7.50%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will continue to be made at the rates specified in the Charter. Employer contributions were assumed to be made in accordance with the contribution policy in effect for July 1, 2015 actuarial valuation. That policy includes contributions equal to the employer portion of the Entry Age normal costs for members as of the valuation date, a payment for the expected administrative expenses, and an amortization payment on the unfunded actuarial liability.

The amortization payment is based on closed periods that vary in length depending on the source. Charter amendments prior to July 1, 2014 are amortized over 20 years. After July 1, 2014, any Charter changes to active member benefits are amortized over 15 years and changes to inactive member benefits, including Supplemental COLAs, are amortized over 5 years. The remaining Unfunded Actuarial Liability not attributable to Charter amendments as of July 1, 2013 is amortized over a 19-year period commencing July 1, 2014. Experience gains and losses and assumption or method changes on or after July 1, 2014 are amortized over 20 years. For the July 1, 2016 valuation, the increase in the Unfunded Actuarial Liability attributable to the Supplemental COLAs granted on July 1, 2013 and July 1, 2014 are amortized over 17-years and 5-years respectively. All amortization schedules are established as a level percentage of payroll so payments increase 3.75% each year. The Unfunded Actuarial Liability is based on an Actuarial Value of Assets that smooths investment gains and losses over five years and a measurement of the Actuarial Liability that excludes the value of any future Supplemental COLAs.

While the contributions and measure of Actuarial Liability in the valuation do not anticipate any future Supplemental COLAs, the projected contributions for the determination of the discount rate include the anticipated future amortization payments on future Supplemental COLAs for current members when they are expected to be granted. For members who worked after November 6, 1996 and before Proposition C passed, a Supplemental COLA is granted if the actual investment earnings during the year exceed the expected investment earnings on the Actuarial Value of Assets. For members who did not work after November 6, 1996 and before Proposition C passed, the Market Value of Assets must also exceed the actuarial liability at the beginning of the year for a Supplemental COLA to be granted. When a Supplemental COLA is granted, the amount depends on the amount of excess earnings and the basic COLA amount for each membership group. The large majority of members receive a 1.50% Supplemental COLA when granted.

Because the probability of a Supplemental COLA depends on the current funded level of the System for certain members, Cheiron developed an assumption as of the June 30, 2016 measurement date for the probability and amount of Supplemental COLA for each future year. The table below shows the net assumed Supplemental COLA for members with a 2.00% Basic COLA for sample years.

Assumed Supplemental COLA for Members with a 2.00% Basic COLA

Fiscal years	96 - Prop C	Before 11/6/96 or After Prop C
2018	0.750 %	0.000 %
2023	0.750	0.220
2028	0.750	0.322
2033	0.750	0.370
2038+	0.750	0.375

The projection of benefit payments to current members for determining the discount rate includes the payment of anticipated future Supplemental COLAs.

Based on these assumptions, the System's fiduciary net position was projected to be available to make projected future benefit payments for current members until fiscal year end 2093 when only a portion of the projected benefit payments can be made from the projected fiduciary net position. Projected benefit payments are discounted at the long-term expected return on assets of 7.50% to the extent the fiduciary net position is available to make the payments and at the municipal bond rate of 2.85% to the extent they are not available. The single equivalent rate used to determine the Total Pension Liability as of June 30, 2016 is 7.50%.

The long-term expected rate of return on pension plan investments was 7.50%. It was set by the Retirement Board after consideration of both expected future returns and historical returns experienced by the Retirement System. Expected future returns were determined by using a building-block method in which best-estimate ranges of expected future real rates of return were developed for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Target allocation and best estimates of geometric long-term expected real rates of return (net of pension plan investment expense and inflation) for each major asset class are summarized in the following table:

Long- Term Expected Real Rates of Return

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	40.0 %	5.1 %
Fixed Income	20.0	1.1
Private Equity	18.0	6.3
Real Assets	17.0	4.3
Hedge Funds/Absolute Returns	5.0	3.3
Total	100.0	

Fiscal Year 2016

The beginning and end of year measurements are based on different assumptions and contribution methods that result in different discount rates. The discount rate was 7.46% as of June 30, 2015 and 7.58% as of June 30, 2014.

The discount rate used to measure the total pension liability as of June 30, 2015 was 7.46%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will continue to be made at the rates specified in the Charter. Employer contributions were assumed to be made in accordance with the contribution policy in effect for July 1, 2014 actuarial valuation. That policy includes contributions equal to the employer portion of the entry age normal costs for

members as of the valuation date, a payment for the expected administrative expenses, and an amortization payment on the unfunded actuarial liability. The amortization payment is based on closed periods that vary in length depending on the source. Charter amendments prior to July 1, 2014 are amortized over 20 years. After July 1, 2014, any Charter changes to active member benefits are amortized over 15 years and changes to inactive member benefits, including Supplemental COLAs, are amortized over 5 years. The remaining unfunded actuarial liability not attributable to Charter amendments as of July 1, 2013 is amortized over a 19-year period commencing July 1, 2014. Experience gains and losses and assumption or method changes on or after July 1, 2014 are amortized over 20 years. All amortization schedules are established as a level percentage of payroll so payments increase 3.75% each year. The unfunded actuarial liability is based on an actuarial value of assets that smooths investment gains and losses over five years and a measurement of the actuarial liability that excludes the value of any future Supplemental COLAs.

While the contributions and measure of actuarial liability in the valuation do not anticipate any Supplemental COLAs, the projected contributions for the determination of the discount rate include the anticipated future amortization payments on future Supplemental COLA's for current members when they are expected to be granted. For a Supplemental COLA to be granted, the market value of assets must exceed the actuarial liability at the beginning of the year and the actual investment earnings during the year must exceed the expected investment earnings on the actuarial value of assets. When a Supplemental COLA is granted, the amount depends on the amount of excess earnings and the basic COLA amount for each membership group. In most cases, the large majority of members receive a 1.50% Supplemental COLA.

Because the probability of a Supplemental COLA depends on the current funded level of the System, we developed an assumption as of June 30, 2015 of the probability and amount of Supplemental COLA for each future year.

The table below shows the net assumed Supplemental COLAs for member with a 2.00% basic COLAs for sample years:

Assumed Supplemental COLA for Members with a 2.00% Basic COLA

Fiscal years	Asssumption
2016	0.000 %
2021	0.345
2026	0.375
2031	0.375
2036+	0.375

The projection of benefit payments to current members for determining the discount rate includes the payment of anticipated future Supplemental COLAs.

Based on these assumptions, the Retirement System's fiduciary net position was projected to be available to make projected future benefit payments for current members until fiscal year end 2076 when only a portion of the projected benefit payments can be made from the projected fiduciary net position. Projected benefit payments are discounted at the long-term expected return on assets of 7.50% to the extent the fiduciary net position is available to make the payments and at the municipal bond rate of 3.85% to the extent they are not available. The single equivalent rate used to determine the total pension liability as of June 30, 2015 is 7.46%.

The long-term expected rate of return on pension plan investments was 7.50%. It was set by the Retirement Board after consideration of both expected future returns and historical returns

(Continued)

experienced by the Retirement System. Expected future returns were determined by using a building-block method in which best-estimate ranges of expected future real rates of return were developed for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Target allocation and best estimates of geometric long-term expected real rates of return (net of pension plan investment expense and inflation) for each major asset class are summarized in the following table.

Long- Term Expected Real Rates of Return

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	40.0 %	5.1 %
Fixed Income	20.0	1.2
Private Equity	18.0	7.5
Real Assets	17.0	4.1
Hedge Funds/Absolute Returns	5.0	3.5
Total	100.0	

Sensitivity of Proportionate Share of the Net Pension Liability to Changes in the Discount Rate

The following presents Hetch Hetchy's allocation of the employer's proportionate share of the net pension liability for the Plan, calculated using the discount rate, as well as what Hetch Hetchy's allocation of the employer's proportionate share of the net pension liability would be if it were calculated using a discount rate that is 1% lower or 1% higher than the current rate:

Fiscal Year 2017

Employer	1% Decrease Share of NPL @ 6.50%	Share of NPL @ 7.50%	1% Increase Share of NPL @ 8.50%
Hetch Hetchy	$ 109,997	69,412	35,844

Fiscal Year 2016

Employer	1% Decrease Share of NPL @ 6.46%	Share of NPL @ 7.46%	1% Decrease Share of NPL @ 8.46%
Hetch Hetchy	$ 59,428	26,874	(427)

(b) Healthcare Benefits

Healthcare benefits for Hetch Hetchy employees, retired employees, and surviving spouses are financed by beneficiaries and by the City through the City and County of San Francisco Health Service System (the Health Service System). Hetch Hetchy's annual contribution for both active and retired employees was $6,616 and $6,371 in fiscal years 2017 and 2016, respectively. Included in these amounts are $1,835 and $1,687 for 2017 and 2016, respectively, to provide post-retirement benefits for Hetch Hetchy's retired employees, on a pay-as-you-go basis.

The City has determined a citywide Annual Required Contribution (ARC), interest on net other post-employment benefits (OPEB) other than pensions obligations, ARC adjustment, and OPEB cost based upon an actuarial valuation performed in accordance with GASB Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, by the City's actuaries. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover the normal cost of each year and any unfunded actuarial liabilities (or funding excess) amortized over 30 years.

(Continued)

The following tables show the components of the City's annual OPEB allocations for Hetch Hetchy for the years ended June 30, 2017 and 2016, for the amounts contributed to the plan, and changes in the City's net OPEB obligations:

Fiscal Year 2017		Hetchy Water	Hetchy Power	CleanPowerSF	Total
Annual required contribution	$	1,857	2,269	81	4,207
Interest on net OPEB obligations		504	617	22	1,143
Adjustment to ARC		(204)	(249)	(9)	(462)
Annual OPEB cost		2,157	2,637	94	4,888
Contribution made		(822)	(1,006)	(7)	(1,835)
Increase in net OPEB obligations		1,335	1,631	87	3,053
Net OPEB obligations – beginning of year		9,945	15,224	—	25,169
Net OPEB obligations – end of year	$	11,280	16,855	87	28,222

Fiscal Year 2016		Hetchy Water	Hetchy Power	Hetch Hetchy Water and Power
Annual required contribution	$	1,704	2,083	3,787
Interest on net OPEB obligations		541	661	1,202
Adjustment to ARC		(440)	(538)	(978)
Annual OPEB cost		1,805	2,206	4,011
Contribution made		(759)	(928)	(1,687)
Increase in net OPEB obligations		1,046	1,278	2,324
Net OPEB obligations – beginning of year		8,899	13,946	22,845
Net OPEB obligations – end of year	$	9,945	15,224	25,169

The City issues a publicly available financial report at a citywide level that includes the complete note disclosures and required supplementary information related to the City's post-retirement healthcare obligations. The report may be obtained by writing to the City and County of San Francisco, Office of the Controller, 1 Dr. Carlton B. Goodlett Place, Room 316, San Francisco, CA 94102, or by calling (415) 554-7500.

(11) Related Parties

(a) Hetch Hetchy Water and Power

Various common costs incurred by the SFPUC are allocated among Hetch Hetchy, Water, and the Wastewater Enterprises. The allocations are based on the SFPUC management's best estimate and may change from year to year depending on the activities incurred by each Enterprise and the information available. For the years ended June 30, 2017 and 2016, the SFPUC allocated $14,361, or 17.4%, and $14,243, or 17.4%, respectively, in administrative costs to Hetch Hetchy, which is included in the financial statements under various expense categories. These costs are then allocated to Hetchy Water and Hetchy Power in the Hetch Hetchy financial statements, using the periodically reviewed department overhead allocation model.

The City performs certain administrative services such as maintenance of accounting records and investment of cash for all fund groups within the City. The various funds are charged for these services based on the City's indirect cost allocation plan. The overhead allocation paid to the General Fund of the City by Hetch Hetchy was $224 and $1 for the years ended June 30, 2017 and 2016, respectively, and is included in other operating expenses in the accompanying financial statements.

The fiscal years 2017 and 2016 reflect the true-up adjustment between projection and actual. Some City departments provide direct services such as engineering, purchasing, legal, data processing, telecommunication, and human resources to Hetch Hetchy and charge amounts designed to recover those departments' costs. These charges totaling approximately $8,678 and $9,451 for the years ended June 30, 2017 and 2016, respectively, have been included in services provided by other departments in the accompanying financial statements.

SFPUC's 75-year lease agreement with the San Francisco Recreation and Parks Department, for the use of parking spaces for its fleet of vehicles at the Civic Center Garage, commenced on February 1, 2011. Total payment under this agreement is $6,274, which was fully made as of fiscal year 2015. The expenses and prepayments among the three SFPUC Enterprises are based on 525 Golden Gate occupancy. As of June 30, 2017, Hetch Hetchy's allocable shares of expenses and prepayment were $17 and $989, respectively, and as of June 30, 2016 were $16 and $1,006, respectively.

(b) Hetchy Water

The Water Enterprise purchases water from Hetchy Water. Included in the operating revenues are the water assessment fees of $34,600 and $36,600 for the years ended June 30, 2017 and 2016, respectively. The water assessment fees represent a recovery to fund upcountry, water-related costs that are not otherwise funded through Hetchy water-related revenue or Water revenue bonds.

During fiscal year ended June 30, 2017, Hetchy Water received $60,000 from the Water Enterprise to fund upcountry projects.

(c) Hetchy Power

As of June 30, 2017 and 2016, operating revenues in sales of power to departments within the City were $87,656 and $84,307, respectively.

The Water Enterprise also purchases electricity from Hetchy Power. This amount totaled $8,480 and $8,279 for the years ended June 30, 2017 and 2016, respectively.

The Wastewater Enterprise purchases electricity from Hetchy Power. This amount totaled $10,738 and $9,915 for the years ended June 30, 2017 and 2016, respectively.

Hetchy Power facilitates all electric and gas service connections between PG&E and City departments. In this capacity, Hetchy Power facilitates and coordinates the terms and payment for the service connections that are performed by PG&E. As of June 30, 2017 and 2016, there was no outstanding amount due from City departments related to this work. In the event Hetchy Power received money from PG&E after project completion, monies are to be refunded to the City departments for their respective credits.

Hetchy Power serves as the City's department for energy efficiency projects and maintains the Sustainable Energy Account (SEA) (formerly known as the Mayor's Energy Conservation Account) fund to sponsor and financially support such projects at various City departments. In this role, Hetchy Power may secure low-interest financing to supplement funds available in the SEA fund. At June 30, 2017 and 2016, projects completed or under way throughout the City amounted to $6,931 and $7,679, respectively, and are recorded as due from other government agencies.

Besides funding the SEA projects, in fiscal year 2010, Hetch Hetchy funded a project for the Treasure Island Development Authority and recorded $2,599 as due from other government

agencies. Hetchy Power and the Moscone Center have renegotiated the memoranda of understanding to extend the payment terms of the receivables to match the useful life of underlying assets.

As of June 30, 2017 and 2016, Hetchy Power recorded receivables of $1,166 and $1,269, respectively, due from the Wastewater Enterprise for its share of costs relating to SFPUC Headquarters Living Machine System. Details of due from other City departments are as follows:

	2017	2016
Moscone Center	$ 6,581	7,087
San Francisco General Hospital	350	513
San Francisco Department of Public Health	—	14
Port of San Francisco	—	65
Total SEA-related projects	6,931	7,679
Treasure Island Development Authority	2,599	2,599
Wastewater - 525 Golden Gate Headquarters Project	1,166	1,269
CleanPowerSF - Electricity Purchases	387	—
Office of Community Investment and Infrastructure	76	—
Department of Public Works	37	133
Water Enterprise	—	549
Total due from other City departments	11,196	12,229
Less: current portion	(1,282)	(1,533)
Long-term portion as of June 30	$ 9,914	10,696

(d) CleanPowerSF

As of June 30, 2017 and 2016, operating revenues in sales of power to Hetchy Power were $12 and $36, respectively. Operating expenses in purchase of power from Hetchy Power were $1,893 and $367, respectively. Wholesale sales of energy, capacity and/or other electric power related products may be made between the CleanPowerSF and Hetchy Power, when available. CleanPowerSF and Hetchy Power transact for such products at prevailing market prices.

CleanPowerSF received program support services from Hetchy Power. This amount totaled $181 and $0 for the fiscal years ended June 30, 2017 and 2016, respectively.

(12) Risk Management

The Enterprise's Risk Management program includes both self-insured (i.e., self-retention) and insured exposures at risk. Risk assessments and purchasing of insurance coverage are collaboratively coordinated by SFPUC Enterprise Risk Management and the City's Office of Risk Management. With certain exceptions, the City and the Enterprise's general approach is to first evaluate the exposure at risk for self-insurance. Based on this analysis, internal mitigation strategies and financing through a self-retention mechanism are generally more economical as the SFPUC in coordination with the City Attorney's Office administers, adjusts, settles, defends, and pays claims from budgeted resources (i.e., pay-as-you-go fund). When economically more viable or when required by debt financing covenants, the Enterprise obtains commercial insurance. At least annually, the City actuarially determines general liability and workers' compensation risk exposures. The Enterprise does not maintain commercial earthquake coverage, with certain minor exceptions, such as a sub-limit for fire-sprinkler leakage due to earthquake under the SFPUC Property Insurance Program.

(Continued)

Primary Risks	Typical Coverage Approach
General liability	Self-Insured
Property	Purchased Insurance and Self-Insured
Electronic data processing	Purchased Insurance and Self-Insured
Workers' compensation	Self-Insured through Citywide Pool
Other Risks	**Typical Coverage Approach**
Surety bonds	Purchased and Contractually Transferred
Errors and omissions	Combination of Self-Insured and Contractual Risk Transfer
Professional liability	Combination of Self-Insured and Contractual Risk Transfer
Public officials liability	Purchased Insurance
Employment practices liability	Purchased Insurance
Builders' risk	Contractually Transferred
Crime	Purchased Insurance

(a) General Liability

Through coordination with the Controller and the City Attorney's Office, the general liability risk exposure is actuarially determined and is addressed through pay-as-you-go funding as part of the budgetary process. Associated costs and estimates are booked as expenses as required under GAAP for financial statement purposes for both the Enterprise and the City and County of San Francisco's Comprehensive Annual Financial Report. The claim expense allocations are determined based on actuarially determined anticipated claim payments and the projected timing of disbursement.

The changes for the general liability (damage claims) for the years ended June 30, 2017 and 2016 are as follows:

Fiscal years	Beginning of year	Claims and changes in estimates	Claims paid	End of year
Hetch Hetchy Water and Power				
2017	$ 1,861	3,146	(2,569)	2,438
2016	3,335	2,726	(4,200)	1,861
Hetchy Water				
2017	$ 353	1,082	(849)	586
2016	402	416	(465)	353
Hetchy Power				
2017	$ 1,508	2,064	(1,720)	1,852
2016	2,933	2,310	(3,735)	1,508

(b) Property and Electronic Data Processing

The Enterprise's property risk management approach varies depending on whether the facility is currently under construction, the property is part of revenue-generating operations, the property is of high value, or is mission-critical in nature. During the course of construction, the Enterprise requires each contractor to provide its own insurance, while ensuring the full scope of work is covered with satisfactory levels to limit the Enterprise's risk exposure. Once construction is complete, the Enterprise performs an assessment to determine whether liability/loss coverage will be obtained through the commercial property policy or self-insurance. The majority of property scheduled in the insurance program is for (1) revenue generating facilities, (2) debt financed facilities, (3) mandated coverage to meet statutory requirements for bonding of various public officials, or (4) high-value,

(Continued)

mission-critical property or equipment. The Electronic Data Processing policy protects selected high-value electronic property in case of damage or loss.

(c) Workers' Compensation

The City actuarially determines and allocates workers' compensation costs to the Enterprise according to a formula based on the following: (i) the dollar amount of claims; (ii) yearly projections of payments based on historical experience; and (iii) the size of the Enterprise's payroll. The administration of workers' compensation claims and payouts are handled by the Workers' Compensation Division of the City's Department of Human Resources. Statewide workers' compensation reforms have resulted in budgetary savings in recent years. The City continues to develop and implement improved programs, such as return-to-work programs, to lower or mitigate the growth of workers' compensation costs. Programs include accident prevention, investigation, and duty modification for injured employees with medical restrictions so return to work can occur as soon as possible.

The changes for the workers' compensation liabilities for the years ended June 30, 2017 and 2016 are as follows:

Fiscal years	Beginning of year	Claims and changes in estimates	Claims paid	End of year
Hetch Hetchy Water and Power				
2017	$ 2,964	861	(856)	2,969
2016	2,629	1,120	(785)	2,964
Hetchy Water				
2017	$ 997	224	(222)	999
2016	846	378	(227)	997
Hetchy Power				
2017	$ 1,967	637	(634)	1,970
2016	1,783	742	(558)	1,967

(d) Surety Bonds

Bonds are required in most phases of the public utilities construction contracting process for such phases as bid, performance, and payment or maintenance. Additionally, bonds may be required in other contracts where goods or services are provided to ensure compliance with applicable terms and conditions such as warranty.

(e) Errors and Omissions, Professional Liability

Errors and omissions and professional liability are commonly transferred through contract to the contracted professional, or retained through self-insurance on a case-by-case basis depending on the size, complexity, or scope of construction or professional service contracts. Examples of such contracts are inclusive of services provided by engineers, architects, design professionals, and other licensed or certified professional service providers.

(f) Public Officials Liability, Employment Practices Liability

All Enterprise public officials with financial oversight responsibilities are provided coverage through a commercial Public Officials Liability Policy. An Employment Practices Liability Policy is retained to protect against employment-related claims and liabilities.

(Continued)

(g) Builders' Risk

Builders' Risk policies of insurance are required to be provided by the contractor on all construction projects for the full value of construction.

(h) Crime

The Enterprise also retains a Commercial Crime Policy, in lieu of bonding its employees, to provide coverage against liabilities or losses due to third-party crime or employee fraud.

(i) Energy Risk Management

Similar to other electric utilities with a heavy reliance on hydroelectric generation, Hetch Hetchy is exposed to risks that could impact its ability to generate net revenues to fund operating and capital investment activities. Hydroelectric generation facilities in the Sierra Nevada are the primary source of electricity for Hetch Hetchy. For this reason, the Hetch Hetchy revenues can vary with watershed hydrology, unexpected generator outages, and market prices for energy. Given the inherent risk for all hydroelectric generation, several risk management interventions have been developed to mitigate exposure.

(j) Enterprise Risk Management

The Power Enterprise adopted the ISO 31000 standard for the Hetchy Power and CleanPowerSF program as the framework for implementing Enterprise Risk Management (ERM). The Enterprise utilizes this framework to systematically and proactively identify and mitigate risks that threatens its business objectives. Since not all risks are insurable or transferable contractually, the ERM program provides an additional method to manage risks and protect the Enterprise's current and expanding business allowing for increased operational resiliency and the ability to capitalize on opportunities.

(13) Commitments and Litigation

(a) Commitments

As of June 30, 2017 and 2016, Hetch Hetchy has outstanding commitments with third parties of $72,736 and $63,552, respectively, for various capital projects and other purchase agreements for materials and services.

Hetchy Water

To meet certain requirements of the Don Pedro Reservoir operating license, the City entered into an agreement with the MID and TID in which the Districts would be responsible for an increase in water flow releases from the reservoir in exchange for annual payments from the City, which are included in Hetchy Water's operating expenses. The payment amounts were $4,716 and $4,651 for fiscal years 2017 and 2016, respectively. The payments are to be made for the duration of the license, but may be terminated with one year's prior written notice after 2001. The City and the Districts have also agreed to monitor the fisheries in the lower Tuolumne River for the duration of the license. A maximum monitoring expense of $1,400 is to be shared between the City and the Districts over the term of the license. The City's share of the monitoring costs is 52%, while the Districts are responsible for 48% of the costs.

(Continued)

Hetchy Power

District Sales

In April 1988, Hetchy Power entered into two separate long-term power sales agreements (the Agreement) with the two irrigation districts, the MID and TID, which expired June 30, 2015. In April 2015, the Commission and the Board of Supervisors approved the extension of both agreements for one year to June 30, 2016. A second extension agreement has been subsequently approved to continue the current terms and conditions for MID through June 30, 2017. The second extension agreement for TID proposes to remove the District's rights to excess energy from the project and terminate those conditions with the first extension agreement on June 30, 2016. The SFPUC will continue to comply with the Raker Act by making Hetch Hetchy generated hydropower available at cost to MID and TID for their agricultural pumping and municipal loads as energy from the Hetch Hetchy project is available after meeting the SFPUC's municipal load obligations.

For fiscal years 2017 and 2016, energy sales to the Districts totaled 152,321 Megawatt hours (MWh) or $7,808 and 377,981 MWh or $13,684 respectively. The decrease was primarily due to no purchase agreement with TID in fiscal year 2017.

1987 Interconnection Agreement and 2015 Replacement Agreements

In 1987, the City entered into an interconnection agreement with PG&E to provide transmission, distribution, and other support services for the City's use of PG&E's transmission and distribution system to deliver power to the City's customers. The renegotiated agreement in 2007 expired on July 1, 2015. In December 2014, PG&E filed several separate replacement service and facilities agreements with the FERC for its approval. By FERC order, the City is currently taking transmission service on PG&E's transmission system using the CAISO Open-Access Transmission Tariff and is taking distribution service under PG&E's Wholesale Distribution Tariff pursuant to PG&E's replacement agreements, but subject to waiver of certain terms and conditions and subject to refund by PG&E, pending the FERC's final decision. During fiscal years 2017 and 2016, Hetchy Power purchased $8,595 and $4,913, respectively, of transmission, distribution services, and other support services from PG&E under the terms of the replacement agreements and the 1987 Interconnection Agreement.

Western System Power Pool and other Market Purchases and Sales

Hetchy Power may purchase or sell energy and other related products (such as ancillary services, spinning reserves, resource adequacy products, and congestion revenue rights) with different market entities through the Western System Power Pool (WSPP) and the CAISO. During fiscal years 2017 and 2016, Hetchy Power purchased $0 and $3,591 of power and other related products, respectively. Sales of excess power, after meeting Hetch Hetchy's obligations, were 29,050 MWh, or $755, for 2017 and 9,520 MWh, or $157, for 2016. Sales in fiscal year 2017 were higher due to increased water flows resulting from higher precipitation levels, and fewer planned maintenance outages.

Power Purchase Agreement (PPA)

Hetchy Power (Buyer) purchases energy, capacity, and environmental attributes from a solar photovoltaic project located at Sunset Reservoir (the facility) pursuant to the 2009 25-year PPA with SFCity1, LP, owned by Duke Energy (Seller). In November 2010, the facility commenced commercial operation and began to provide Hetchy Power energy generated by the facility.

The PPA sets the purchase price of generated energy at $235/MWh, increased by 3% each year throughout the term of the agreement, and it is expected that the facility will generate 6,560 MWh

(Continued)

per year. In fiscal year 2017, the facility generated 6,505 MWh. In the event that the facility generates more energy than expected due to better than normal meteorological conditions, the PPA requires the Buyer to purchase all the excess energy but generation in excess of 120% of expected is purchased at no cost. The PPA also requires the Seller to generate a minimum amount of energy from the facility annually. If energy production falls below 50% of expected, the Seller must provide replacement power, and if energy falls below 90% of expected, the price for energy generated is lowered. In fiscal years 2017 and 2016, purchases of energy under the Agreement were $1,847, or 6,505 MWh, and $1,918, or 6,934 MWh, respectively.

CleanPowerSF

CleanPowerSF launched in May 2016 and entered into contracts with Calpine Energy Services L.P. (Calpine) and Shiloh I Wind Project LLC (Shiloh) to purchase renewable and conventional energy and resource adequacy capacity to meet its retail sales obligations. Both contracts feature 10-year master agreements under which multiple transactions may be executed. CleanPowerSF had executed two multi-year transactions with Calpine (three-year term) and Shiloh (five-year term). The Calpine requires a reserve balance of $2,640 as of June 30, 2017, which equivalent to two months' worth of estimated payment. At June 30, 2017 and 2016, total electricity purchased from Calpine and Shiloh were $17,265 and $1,605 respectively.

Customer and Administrative Services

CleanPowerSF entered into contract with Noble Americas in November 2015 for a three-year term, not to exceed $5,600 to provide administrative and customer care services related to electricity data management, billing, call center and related services. During fiscal years 2017 and 2016, amount paid were $990 and $24, respectively. Prior year costs were included in Hetchy Power's start-up costs for CleanPowerSF.

CleanPowerSF Guarantee

During fiscal year 2017, there was a letter of credit outstanding that guarantees certain payment obligations of CleanPowerSF. The Letter of Credit is secured by Hetchy Power revenue at the 11th priority lien level under the Hetchy Power Indenture. The letter of credit, issued by JP Morgan Chase, was in the amount of $13,939 as of June 30, 2017. There were no draws against the letter of credit during fiscal year 2017.

(b) Litigation

Hetch Hetchy is a defendant in various legal actions and claims that arise during the normal course of business. The final disposition of these legal actions and claims is not determinable. However, in the opinion of management, the outcome of any litigation of these matters will not have a material effect on the financial position or changes in net position of Hetch Hetchy.

(c) Environmental Issue

As of June 30, 2017 and 2016, there was no pollution remediation liability recorded.

Supplemental Schedules

COMBINED HETCHY POWER AND CLEANPOWERSF
Supplemental Schedule - Statement of Net Position
June 30, 2016
(In thousands)

	Hetchy Power	CleanPowerSF	Eliminations	2016 Combined Total
Assets				
Current assets:				
Cash and investments with City Treasury	$ 151,827	8,175	—	160,002
Cash and investments outside City Treasury	8	—	—	8
Receivables:				
Charges for services (net of allowance for doubtful accounts $0 as of June 30, 2016 and 2015)	10,281	2,963	—	13,244
Due from other City departments, current portion	2,283	—	(750)	1,533
Due from other governments	1,810	—	—	1,810
Interest receivables	122	8	—	130
Total current receivables	14,496	2,971	(750)	16,717
Prepaid charges, advances, and other receivables, current portion	389	—	—	389
Inventory	257	—	—	257
Restricted cash and investments outside City Treasury, current portion	2,933	—	—	2,933
Total current assets	169,910	11,146	(750)	180,306
Non-current assets:				
Restricted cash and investments with City Treasury	38,180	—	—	38,180
Restricted cash and investments outside City Treasury, less current portion	2,577	—	—	2,577
Restricted interest receivable	131	—	—	131
Capital assets, not being depreciated and amortized	62,033	—	—	62,033
Capital assets, net of accumulated depreciation and amortization	228,349	—	—	228,349
Charges for services, less current portion	660	—	—	660
Prepaid charges, advances, and other receivables, less current portion	817	—	—	817
Due from other City departments, less current portion	17,946	—	(7,250)	10,696
Total non-current assets	350,693	—	(7,250)	343,443
Total assets	520,603	11,146	(8,000) *	523,749
Deferred outflows of resources:				
Pensions	4,578	—	—	4,578
Total deferred outflows of resources	4,578	—	—	4,578
Liabilities				
Current liabilities:				
Accounts payable	11,762	1,722	—	13,484
Accrued payroll	1,565	—	—	1,565
Accrued vacation and sick leave, current portion	1,469	—	—	1,469
Accrued workers' compensation, current portion	367	—	—	367
Damage claims liability, current portion	471	—	—	471
Due to other City departments, current portion	—	750	(750)	—
Unearned revenues, refunds, and other	4,099	—	—	4,099
Bond and loan interest payable	534	—	—	534
Bonds, current portion	1,692	—	—	1,692
Certificates of participation, current portion	315	—	—	315
Current liabilities payable from restricted assets	2,578	—	—	2,578
Total current liabilities	24,852	2,472	(750)	26,574
Long-term liabilities:				
Other post-employment benefits obligations	15,224	—	—	15,224
Net pension liability	14,781	—	—	14,781
Accrued vacation and sick leave, less current portion	1,051	—	—	1,051
Accrued workers' compensation, less current portion	1,600	—	—	1,600
Damage claims liability, less current portion	1,037	—	—	1,037
Due to other City departments, less current portion	—	7,250	(7,250)	—
Bonds, less current portion	58,418	—	—	58,418
Certificates of participation, less current portion	14,966	—	—	14,966
Total long-term liabilities	107,077	7,250	(7,250)	107,077
Total liabilities	131,929	9,722	(8,000) *	133,651
Deferred inflows of resources:				
Related to pensions	4,773	—	—	4,773
Total deferred inflows of resources	4,773	—	—	4,773
Net position:				
Net investment in capital assets	255,897	—	—	255,897
Restricted for debt service	306	—	—	306
Restricted for capital projects	—	—	—	—
Unrestricted	132,276	1,424	—	133,700
Total net position	$ 388,479	1,424	—	389,903

*Included interfund loan receivable and loan payable of $8,000 for fiscal year 2016, between Hetchy Power and CleanPowerSF.

See accompanying independent auditors' report.

COMBINED HETCHY POWER AND CLEANPOWERSF
Supplemental Schedule - Statement of Revenues, Expenses, and Changes in Net Position
Year ended June 30, 2016
(In thousands)

	Hetchy Power	CleanPowerSF	Eliminations	2016 Combined Total
Operating revenues:				
Charges for services	$ 122,504	3,749	(403)	125,850
Rents and concessions	144	—	—	144
Total operating revenues	122,648	3,749	(403) *	125,994
Operating expenses:				
Personnel services	33,632	—	—	33,632
Contractual services	5,493	—	—	5,493
Transmission/distribution and other power costs	19,260	2,349	(403)	21,206
Purchased electricity	5,586	—	—	5,586
Materials and supplies	1,849	—	—	1,849
Depreciation and amortization	12,639	—	—	12,639
Services provided by other departments	7,397	—	—	7,397
General and administrative and other	24,157	—	—	24,157
Total operating expenses	110,013	2,349	(403) *	111,959
Operating income	12,635	1,400	—	14,035
Non-operating revenues (expenses):				
Interest and investment income	1,294	24	—	1,318
Interest expenses	(3,355)	—	—	(3,355)
Amortization of premium, discount, and issuance costs	122	—	—	122
Net gain from sale of assets	1	—	—	1
Other non-operating revenues	12,255	—	—	12,255
Other non-operating expenses	(1,676)	—	—	(1,676)
Net non-operating revenues	8,641	24	—	8,665
Change in net position before transfers	21,276	1,424	—	22,700
Transfers from the City and County of San Francisco	1,385	—	—	1,385
Transfers to the City and County of San Francisco	(705)	—	—	(705)
Change in net position	21,956	1,424	—	23,380
Net position at beginning of year	366,523	—	—	366,523
Net position at end of year	$ 388,479	1,424	—	389,903

*$403 eliminations in fiscal year 2016 included: $36 resale of electricity from CleanPowerSF to Hetchy Power and $367 sale of capacity from Hetchy Power to CleanPowerSF.

See accompanying independent auditors' report.

KPMG LLP
Suite 1400
55 Second Street
San Francisco, CA 94105

Independent Auditors' Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

The Honorable Mayor and Board of Supervisors
City and County of San Francisco:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of the business-type activities and each major fund of Hetch Hetchy Water and Power and Clean Power (Hetch Hetchy), an enterprise fund of the City and County of San Francisco, California (the City), which comprise the statement of financial position as of June 30, 2017, and the related statements of revenues, expenses, and changes in net position, and cash flows for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated November 8, 2017.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered Hetch Hetchy's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of Hetch Hetchy's internal control. Accordingly, we do not express an opinion on the effectiveness of Hetch Hetchy's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether Hetch Hetchy's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of Hetch Hetchy's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Hetch Hetchy's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

San Francisco, California
November 8, 2017

San Francisco Public Utilities Commission
A Department of the City and County of
San Francisco, California

Photo by: Robin Scheswohl
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Si necesita una traducción o asistencia en
español llame al [illegible]

Communications Division
Date of Publication: November 2017

OUR MISSION

To provide our customers with high-quality, efficient and reliable water, power and sewer services in a manner that values environmental and community interests and sustains the resources entrusted to our care.

Financial Services
525 Golden Gate Avenue, 4th Floor
San Francisco, CA 94102-3220
sfwater.org

Attachment C:

CleanPowerSF Rate Tables for Rates Effective May 1, 2016 and July 1, 2017

CleanPowerSF Rates Effective May 1, 2016

Tariff Title	Applies To Customers on Following PG&E Rate Schedules	Season	Hours Applied	PG&E Generation Rate ($) as of Jan. 1, 2016	Green NTE Rate ($)	SuperGreen NTE Rate ($)	Billing Determinant
Non-Time of Use Residential (E-1)	E1, E1L, EM, EML, ES, ESL, ESR, ESRL, ET, and ETL	Year round	All hours	0.09696	0.07267	0.0926676	kWh
Residential Time of Use (1) (E-6)	E-6	Summer	Peak	0.21352	0.18904	0.20904	kWh
			Part Peak	0.11222	0.08789	0.10789	kWh
			Off Peak	0.07083	0.04660	0.06660	kWh
		Winter	Part Peak	0.09381	0.06953	0.08953	kWh
			Off Peak	0.08243	0.05817	0.07817	kWh
Residential Time of Use (2) (E-7)	E-7	Summer	Peak	0.2633	0.23859	0.25859	kWh
			Off Peak	0.06912	0.04490	0.06490	kWh
		Winter	Peak	0.10484	0.08053	0.10053	kWh
			Off Peak	0.07268	0.04845	0.06845	kWh
Residential Seasonal (E-8)	E-8	Summer	All hours	0.10550	0.08119	0.10119	kWh
		Winter	All hours	0.08514	0.06088	0.08088	kWh
Experimental Residential Time-of-Use for Electric Vehicles (E-9A and E-9B)	E-9A and E-9B	Summer	Peak	0.20645	0.18188	0.20188	kWh
			Part Peak	0.10296	0.07865	0.09865	kWh
			Off Peak	0.06096	0.03676	0.05675	kWh
		Winter	Part Peak	0.08325	0.05899	0.07899	kWh
			Off Peak	0.06793	0.04371	0.06371	kWh
Electric Vehicle Time-of-Use Service (EV)	EVA, EVB	Summer	Peak	0.22812	0.20350	0.22350	kWh
			Part Peak	0.10994	0.08562	0.10562	kWh
			Off Peak	0.05525	0.03106	0.05106	kWh
		Winter	Peak	0.08525	0.06099	0.08099	kWh
			Part Peak	0.05326	0.02908	0.04908	kWh
			Off Peak	0.05722	0.03303	0.05303	kWh
Small General Service (A-1)	A-1 A	Summer	All hours	0.11400	0.09503	0.11503	kWh
		Winter	All hours	0.07843	0.05954	0.07954	kWh
Small General Service (A-1TOU)	A-1 B	Summer	Peak	0.12932	0.11031	0.13031	kWh
			Part Peak	0.10566	0.08671	0.10671	kWh
			Off Peak	0.07831	0.05942	0.07942	kWh
		Winter	Part Peak	0.10547	0.08652	0.10652	kWh
			Off Peak	0.08456	0.06566	0.08566	kWh
Small General Time-of-Use Service (A-6)	A-6	Summer	Peak	0.36280	0.34320	0.36320	kWh
			Part Peak	0.12321	0.10421	0.12421	kWh
			Off Peak	0.06492	0.04607	0.06607	kWh
		Winter	Part Peak	0.09038	0.07146	0.09146	kWh
			Off Peak	0.07289	0.05402	0.07402	kWh
Direct-Current General Service (A-15)	A-15	Summer	All hours	0.11400	0.09503	0.11503	kWh
		Winter	All hours	0.07843	0.05954	0.07954	kWh
Medium General Demand Non-Time of Use - Secondary Voltage (A-10AS)	A-10 A	Summer	All hours	0.10375	0.08385	0.10385	kWh
		Winter	All hours	0.07965	0.05981	0.07981	kWh
		Summer	Demand	4.83	4.82	4.82	kW
Med. General Demand Non-Time of Use - Primary Voltage (A-10AP)		Summer	All hours	0.09547	0.07559	0.09559	kWh
		Winter	All hours	0.07445	0.05462	0.07462	kWh
		Summer	Demand	4.23	4.22	4.22	kW
Med. General Demand Non-Time of Use - Transmission (A-10AT)		Summer	All hours	0.08674	0.06688	0.08688	kWh
		Winter	All hours	0.06847	0.04866	0.06866	kWh
		Summer	Demand	3.32	3.31	3.31	kW
Medium General Demand Time of Use - Secondary Voltage (A-10BS)	A-10 B	Summer	Peak	0.15860	0.13856	0.15856	kWh
			Part Peak	0.10347	0.08357	0.10357	kWh
			Off Peak	0.07540	0.05557	0.07557	kWh
		Winter	Part Peak	0.08753	0.06767	0.08767	kWh
			Off Peak	0.07047	0.05065	0.07065	kWh
		Summer	Demand	4.83	4.82	4.82	kW
Medium General Demand Time of Use - Primary Voltage (A-10BP)		Summer	Peak	0.14838	0.12837	0.14837	kWh
			Part Peak	0.09782	0.07794	0.09794	kWh
			Off Peak	0.07119	0.05137	0.07137	kWh
		Winter	Part Peak	0.08412	0.06427	0.08427	kWh
			Off Peak	0.06824	0.04843	0.06843	kWh
		Summer	Demand	4.23	4.22	4.22	kW
Medium General Demand Time of Use - Transmission (A-10BT)		Summer	Peak	0.13655	0.11657	0.13657	kWh
			Part Peak	0.08967	0.06981	0.08981	kWh
			Off Peak	0.06437	0.04457	0.06457	kWh
		Winter	Part Peak	0.07788	0.05805	0.07805	kWh
			Off Peak	0.06331	0.04351	0.06351	kWh
		Summer	Demand	3.32	3.31	3.31	kW

Tariff Title	Applies To Customers on Following PG&E Rate Schedules	Season	Hours Applied	PG&E Generation Rate ($) as of Jan. 1, 2016	Green NTE Rate ($)	SuperGreen NTE Rate ($)	Billing Determinant
Medium General Demand Time of Use - Secondary (E-19S)	E-19	Summer	Peak	0.12432	0.10735	0.12735	kWh
			Part Peak	0.08420	0.06733	0.08733	kWh
			Off Peak	0.05763	0.04083	0.06083	kWh
			Peak Demand	12.51	12.48	12.48	kW
			Part Peak Demand	3.09	3.08	3.08	kW
		Winter	Part Peak	0.07871	0.06185	0.08185	kWh
			Off Peak	0.06423	0.04741	0.06741	kWh
Medium General Demand Time of Use - Primary (E-19P)		Summer	Peak	0.11513	0.09818	0.11818	kWh
			Part Peak	0.07717	0.06032	0.08032	kWh
			Off Peak	0.05276	0.03597	0.05597	kWh
			Peak Demand	11.17	11.14	11.14	kW
			Part Peak Demand	2.72	2.71	2.71	kW
		Winter	Part Peak	0.07204	0.05520	0.07520	kWh
			Off Peak	0.05879	0.04198	0.06198	kWh
Medium General Demand Time of Use - Transmission (E-19T)		Summer	Peak	0.07934	0.06248	0.08248	kWh
			Part Peak	0.06690	0.05007	0.07007	kWh
			Off Peak	0.05042	0.03361	0.05383	kWh
			Peak Demand	12.27	12.24	12.24	kW
			Part Peak Demand	3.08	3.07	3.07	kW
		Winter	Part Peak	0.06885	0.05202	0.07202	kWh
			Off Peak	0.05620	0.03940	0.05940	kWh
Service to Max Demands >1,000 kW Time of Use - Secondary Voltage (E-20S)	E-20	Summer	Peak	0.11565	0.09973	0.11973	kWh
			Part Peak	0.07913	0.06330	0.08330	kWh
			Off Peak	0.05406	0.03829	0.05829	kWh
			Peak Demand	12.13	12.10	12.10	kW
			Part Peak Demand	2.99	2.98	2.98	kW
		Winter	Part Peak	0.07382	0.05801	0.07801	kWh
			Off Peak	0.06024	0.04446	0.06446	kWh
Service to Max Demands >1,000 kW Time of Use - Primary Voltage (E-20P)		Summer	Peak	0.11823	0.10298	0.12298	kWh
			Part Peak	0.07798	0.06284	0.08284	kWh
			Off Peak	0.05323	0.03815	0.05815	kWh
			Peak Demand	13.32	13.29	13.29	kW
			Part Peak Demand	3.15	3.14	3.14	kW
		Winter	Part Peak	0.07268	0.05755	0.07755	kWh
			Off Peak	0.05931	0.04421	0.06421	kWh
Service to Max Demands >1,000 kW Time of Use - Transmission (E-20T)		Summer	Peak	0.07730	0.06361	0.08361	kWh
			Part Peak	0.06517	0.05151	0.07151	kWh
			Off Peak	0.04912	0.03550	0.05550	kWh
			Peak Demand	15.75	15.71	15.71	kW
			Part Peak Demand	3.75	3.74	3.74	kW
		Winter	Part Peak	0.06708	0.05341	0.07341	kWh
			Off Peak	0.05475	0.04111	0.06111	kWh
Customer-Owned Street and Highway Lighting Customer-Owned Street and Highway Lighting Electrolier Meter Rate Outdoor Area Lighting Services (SL-1)	LS-2, LS-3, OL-1	Year round	All hours	0.08026	0.07662	0.09662	kWh
Traffic Control Service (TC-1)	TC-1	Year round	All hours	0.08570	0.06694	0.08694	kWh
Agricultural Power (AG-1)	AG-1 A	Summer	All hours	0.09814	0.07827	0.09827	kWh
			Connected Load	1.35	1.35	1.35	kW
		Winter	All hours	0.07871	0.05889	0.07889	kWh
	AG-1 B	Summer	All hours	0.10110	0.08123	0.10123	kWh
			Max Demand	2.02	2.01	2.01	kW
			Primary Voltage Disc.	0.75	0.75	0.75	kW
		Winter	All hours	0.07881	0.05899	0.07899	kWh

Tariff Title	Applies To Customers on Following PG&E Rate Schedules	Season	Hours Applied	PG&E Generation Rate ($) as of Jan. 1, 2016	Green NTE Rate ($)	SuperGreen NTE Rate ($)	Billing Determinant
Agricultural Power, Time-of-Use (AG-4)	AG-4 A, AG-4 D	Summer	Peak	0.15658	0.13657	0.15657	kWh
			Off Peak	0.06760	0.04781	0.06781	kWh
			Connected Load	1.33	1.33	1.33	kW
		Winter	Part Peak	0.07164	0.05184	0.07184	kWh
			Off Peak	0.06103	0.04126	0.06126	kWh
	AG-4 B, AG-4 E	Summer	Peak	0.12014	0.10022	0.12022	kWh
			Off Peak	0.06973	0.04994	0.06994	kWh
			Max Demand	2.36	2.35	2.35	kW
			Max Peak Demand	2.51	2.50	2.50	kW
			Primary Voltage Disc. (per Max Demand)	0.58	0.58	0.58	kW
		Winter	Part Peak	0.06789	0.04820	0.06820	kWh
			Off Peak	0.05786	0.03810	0.05810	kWh
	AG-4 C, AG-4 F	Summer	Peak	0.13690	0.11694	0.13694	kWh
			Part Peak	0.07750	0.05769	0.07769	kWh
			Off Peak	0.05591	0.03615	0.05615	kWh
			Max Peak Demand	5.74	5.73	5.73	kW
			Max Part Peak Demand	0.98	0.98	0.98	kW
			Primary Voltage Disc. (per Max Demand)	0.99	0.99	0.99	kW
			Trans. Volt. Disc. Max Peak Demand	1.83	1.83	1.83	kW
			Trans. Volt. Disc. Max Part-Peak Demand	(0.02)	(0.02)	(0.02)	kW
		Winter	Part Peak	0.06204	0.04226	0.06226	kWh
			Off Peak	0.05277	0.03302	0.05302	kWh
Large Time-of-Use Agricultural Power (AG-5)	AG-5 A, AG-5 D	Summer	Peak	0.14680	0.12681	0.14681	kWh
			Off Peak	0.07258	0.05278	0.07278	kWh
			Connected Load	3.65	3.64	3.64	kW
		Winter	Part Peak	0.07601	0.05620	0.07620	kWh
			Off Peak	0.06483	0.04505	0.06505	kWh
	AG-5 B, AG-5 E	Summer	Peak	0.14290	0.12292	0.14292	kWh
			Off Peak	0.04804	0.02830	0.04830	kWh
			Max Demand	4.38	4.37	4.37	kW
			Max Peak Demand	5.48	5.47	5.47	kW
			Primary Voltage Disc. (per Max Demand)	1.37	1.37	1.37	kW
			Trans. Volt. Disc. Max Demand	2.39	2.38	2.38	kW
		Winter	Part Peak	0.06782	0.04803	0.06803	kWh
			Off Peak	0.03987	0.02015	0.04015	kWh
	AG-5 C, AG-5 F	Summer	Peak	0.11767	0.09776	0.11776	kWh
			Part Peak	0.06794	0.04815	0.06815	kWh
			Off Peak	0.04943	0.02969	0.04969	kWh
			Max Peak Demand	10.10	10.07	10.07	kW
			Max Part Peak Demand	1.90	1.90	1.90	kW
			Primary Voltage Disc. (per Max Demand)	2.08	2.07	2.07	kW
			Trans. Volt. Disc. Max Peak Demand	3.89	3.88	3.88	kW
			Trans. Volt. Disc. Max Part-Peak Demand	-	0.00	0.00	kW
		Winter	Part Peak	0.05498	0.03522	0.05522	kWh
			Off Peak	0.04657	0.02683	0.04683	kWh
Standby Service - Secondary and Primary Voltage	S	Year round	Reservation Charge	0.38	0.38	0.38	kW
		Summer	Peak	0.09878	0.08463	0.10463	kWh
			Part Peak	0.08311	0.06900	0.08900	kWh
			Off Peak	0.06260	0.04854	0.06854	kWh
		Winter	Part Peak	0.08561	0.07150	0.09150	kWh
			Off Peak	0.06972	0.05565	0.07565	kWh
Standby Service - Transmission Voltage		Year round	Reservation Charge	0.32	0.32	0.32	kW
		Summer	Peak	0.08268	0.06857	0.08857	kWh
			Part Peak	0.06971	0.05564	0.07564	kWh
			Off Peak	0.05254	0.03851	0.05851	kWh
		Winter	Part Peak	0.07175	0.05767	0.07767	kWh
			Off Peak	0.05857	0.04452	0.06452	kWh

CleanPowerSF Rate Effective July 1, 2016

(Only Time-of-Use and Net Energy Metering Rates)

Tariff Title	Applies To Customers on Following PG&E Rate Schedules	Season	Hours Applied	PG&E Generation Rate ($) as of Mar. 24, 2016	Green NTE Rate ($)	SuperGreen NTE Rate ($)	Billing Determinant
Residential Time of Use A (RES-TOU A)	E-TOU A	Summer	Peak	0.18178	0.15728	0.17728	kWh
			Off Peak	0.10620	0.08188	0.10188	kWh
		Winter	Peak	0.09444	0.07015	0.09015	kWh
			Off Peak	0.08014	0.05589	0.07589	kWh
Residential Time of Use B (RES-TOU B)	E-TOU B	Summer	Peak	0.20403	0.17947	0.19947	kWh
			Off Peak	0.10097	0.07667	0.09667	kWh
		Winter	Peak	0.09720	0.07291	0.09291	kWh
			Off Peak	0.07840	0.05415	0.07415	kWh
NEM-CleanPowerSF Net Surplus Compensation Rates	NEM-CleanPowerSF	N/A	All hours	N/A	0.06930	0.08930	kWh

CleanPowerSF Rates Effective July 1, 2017

Tariff Title	Applies To Customers on Following PG&E Rate Schedules	Season	Hours Applied	PG&E Generation Rate ($) as of March 1, 2017	Green Rate ($)	SuperGreen Rate ($)	Billing Determinant
Non-Time of Use Residential (E-1)	E1, E1t, EM, EML, ES, ESL, ESR, ESRL, ET, and ETL	Year round	All hours	0.09838	0.06836	0.08836	kWh
Residential Time of Use (1) (E-6)	E-6	Summer	Peak	0.21671	0.18640	0.20640	kWh
			Part Peak	0.11384	0.08379	0.10379	kWh
			Off Peak	0.07185	0.04190	0.06190	kWh
		Winter	Part Peak	0.09516	0.06515	0.08515	kWh
			Off Peak	0.08362	0.05364	0.07364	kWh
Residential Time of Use A (E-TOU A)	E-TOU A	Summer	Peak	0.18232	0.15209	0.17209	kWh
			Off Peak	0.10674	0.07670	0.09670	kWh
		Winter	Peak	0.09498	0.06497	0.08497	kWh
			Off Peak	0.08068	0.05071	0.07071	kWh
Residential Time of Use B (E-TOU B)	E-TOU B	Summer	Peak	0.20442	0.17414	0.19414	kWh
			Off Peak	0.10136	0.07134	0.09134	kWh
		Winter	Peak	0.09758	0.06757	0.08757	kWh
			Off Peak	0.07878	0.04881	0.06881	kWh
Experimental Residential Time-of-Use for Electric Vehicles (E-9A and E-9B)	E-9A and E-9B	Summer	Peak	0.20645	0.17616	0.19616	kWh
			Part Peak	0.10196	0.07193	0.09193	kWh
			Off Peak	0.08096	0.05104	0.07104	kWh
		Winter	Part Peak	0.08325	0.05327	0.07327	kWh
			Off Peak	0.06793	0.03799	0.05799	kWh
Electric Vehicle Time-of-Use Service (EV)	EVA, EVB	Summer	Peak	0.23092	0.20057	0.22057	kWh
			Part Peak	0.11128	0.08123	0.10123	kWh
			Off Peak	0.05593	0.02602	0.04602	kWh
		Winter	Peak	0.08629	0.05630	0.07630	kWh
			Part Peak	0.05391	0.02401	0.04401	kWh
			Off Peak	0.05792	0.02801	0.04801	kWh
Residential Multi Meter Standby	EM, S	Year round	Reservation Charge	0.39	0.39	0.39	kW
			All hours	0.09838	0.06836	0.08836	kWh
Small General Service (A-1)	A-1 A	Summer	All hours	0.11518	0.09225	0.10625	kWh
		Winter	All hours	0.07924	0.05640	0.07040	kWh
Small General Service (A-1TOU)	A-1 B	Summer	Peak	0.13086	0.10789	0.12189	kWh
			Part Peak	0.10721	0.08430	0.09830	kWh
			Off Peak	0.07985	0.05701	0.07101	kWh
		Winter	Part Peak	0.10701	0.08410	0.09810	kWh
			Off Peak	0.08610	0.06324	0.07724	kWh
Small General Time-of-Use Service (A-6)	A-6	Summer	Peak	0.36486	0.34131	0.35531	kWh
			Part Peak	0.12528	0.10233	0.11633	kWh
			Off Peak	0.06699	0.04418	0.05818	kWh
		Winter	Part Peak	0.09245	0.06958	0.08358	kWh
			Off Peak	0.07496	0.05213	0.06613	kWh
Direct-Current General Service (A-15)	A-15	Summer	All hours	0.11518	0.09225	0.10625	kWh
		Winter	All hours	0.07924	0.05640	0.07040	kWh
Medium General Demand Non-Time of Use - Secondary Voltage (A-10AS)	A-10 A	Summer	All hours	0.10492	0.08145	0.09545	kWh
		Winter	All hours	0.08055	0.05714	0.07114	kWh
		Summer	Demand	4.89000	4.88	4.88	kW
Med. General Demand Non-Time of Use - Primary Voltage (A-10AP)		Summer	All hours	0.09664	0.07319	0.08719	kWh
		Winter	All hours	0.07537	0.05197	0.06597	kWh
		Summer	Demand	4.28000	4.27	4.27	kW
Med. General Demand Non-Time of Use - Transmission (A-10AT)		Summer	All hours	0.08800	0.06457	0.07857	kWh
		Winter	All hours	0.06946	0.04608	0.06008	kWh
		Summer	Demand	3.37000	3.36	3.36	kW
Medium General Demand Time of Use - Secondary Voltage (A-10BS)	A-10 B	Summer	Peak	0.15972	0.13611	0.15011	kWh
			Part Peak	0.10459	0.08112	0.09512	kWh
			Off Peak	0.07652	0.05312	0.06712	kWh
		Winter	Part Peak	0.08864	0.06521	0.07921	kWh
			Off Peak	0.07158	0.04819	0.06219	kWh
		Summer	Demand	4.89000	4.88	4.88	kW
Medium General Demand Time of Use - Primary Voltage (A-10BP)		Summer	Peak	0.14944	0.12586	0.13986	kWh
			Part Peak	0.09888	0.07542	0.08942	kWh
			Off Peak	0.07225	0.04886	0.06286	kWh
		Winter	Part Peak	0.08518	0.06176	0.07576	kWh
			Off Peak	0.06930	0.04592	0.05982	kWh
		Summer	Demand	4.28000	4.27	4.27	kW
Medium General Demand Time of Use - Transmission (A-10BT)		Summer	Peak	0.13732	0.11377	0.12777	kWh
			Part Peak	0.09044	0.06700	0.08100	kWh
			Off Peak	0.06514	0.04177	0.05577	kWh
		Winter	Part Peak	0.07865	0.05524	0.06924	kWh
			Off Peak	0.06408	0.04071	0.05471	kWh
		Summer	Demand	3.37000	3.36	3.36	kW

Tariff Title	Applies To Customers on Following PG&E Rate Schedules	Season	Hours Applied	PG&E Generation Rate ($) as of March 1, 2017	Green Rate ($)	SuperGreen Rate ($)	Billing Determinant
Medium General Demand Time of Use - Secondary (E-19S)	E-19	Summer	Peak	0.12552	0.10568	0.11968	kWh
			Part Peak	0.08501	0.06527	0.07927	kWh
			Off Peak	0.05819	0.03851	0.05251	kWh
			Peak Demand	12.63000	12.60	12.60	kW
			Part Peak Demand	3.12000	3.11	3.11	kW
		Winter	Part Peak	0.07947	0.05974	0.07374	kWh
			Off Peak	0.06485	0.04516	0.05916	kWh
Medium General Demand Time of Use - Primary (E-19P)		Summer	Peak	0.11638	0.09656	0.11056	kWh
			Part Peak	0.07800	0.05828	0.07228	kWh
			Off Peak	0.05333	0.03367	0.04767	kWh
			Peak Demand	11.29000	11.26	11.26	kW
			Part Peak Demand	2.75000	2.74	2.74	kW
		Winter	Part Peak	0.07282	0.05311	0.06711	kWh
			Off Peak	0.05942	0.03974	0.05374	kWh
Medium General Demand Time of Use - Transmission (E-19T)		Summer	Peak	0.08032	0.06059	0.07459	kWh
			Part Peak	0.06771	0.04801	0.06201	kWh
			Off Peak	0.05104	0.03138	0.04538	kWh
			Peak Demand	12.42000	12.39	12.39	kW
			Part Peak Demand	3.11000	3.10	3.10	kW
		Winter	Part Peak	0.06970	0.05000	0.06400	kWh
			Off Peak	0.05689	0.03722	0.05122	kWh
Service to Max Demands >1,000 kW Time of Use - Secondary Voltage (E-20S)	E-20	Summer	Peak	0.11670	0.09768	0.11168	kWh
			Part Peak	0.07985	0.06092	0.07492	kWh
			Off Peak	0.05455	0.03568	0.04968	kWh
			Peak Demand	12.24000	12.21	12.21	kW
			Part Peak Demand	3.02000	3.01	3.01	kW
		Winter	Part Peak	0.07450	0.05558	0.06958	kWh
			Off Peak	0.06079	0.04191	0.05591	kWh
Service to Max Demands >1,000 kW Time of Use - Primary Voltage (E-20P)		Summer	Peak	0.11932	0.10163	0.11563	kWh
			Part Peak	0.07870	0.06111	0.07511	kWh
			Off Peak	0.05372	0.03620	0.05020	kWh
			Peak Demand	13.44000	13.41	13.41	kW
			Part Peak Demand	3.18000	3.17	3.17	kW
		Winter	Part Peak	0.07335	0.05578	0.06978	kWh
			Off Peak	0.05986	0.04232	0.05632	kWh
Service to Max Demands >1,000 kW Time of Use - Transmission (E-20T)		Summer	Peak	0.07798	0.06193	0.07593	kWh
			Part Peak	0.06575	0.04973	0.06373	kWh
			Off Peak	0.04956	0.03358	0.04758	kWh
			Peak Demand	15.89000	15.85	15.85	kW
			Part Peak Demand	3.79000	3.78	3.78	kW
		Winter	Part Peak	0.06767	0.05164	0.06564	kWh
			Off Peak	0.05524	0.03924	0.05324	kWh
Customer-Owned Street and Highway Lighting Customer-Owned Street and Highway Lighting Electrolier Meter Rate Outdoor Area Lighting Services (LS-1)	LS-2, LS-3, OL-1	Year round	All hours	0.07997	0.07489	0.08889	kWh
Traffic Control Service (TC-1)	TC-1	Year round	All hours	0.08678	0.06393	0.07793	kWh
Agricultural Power (AG-1)	AG-1 A	Summer	All hours	0.09932	0.07721	0.09121	kWh
			Connected Load	1.36000	1.36	1.36	kW
		Winter	All hours	0.07966	0.05760	0.07160	kWh
	AG-1 B	Summer	All hours	0.10228	0.08016	0.09416	kWh
			Max Demand	2.04000	2.03	2.03	kW
			Primary Voltage Disc.	0.76000	0.76	0.76	kW
		Winter	All hours	0.07973	0.05767	0.07167	kWh

Tariff Title	Applies To Customers on Following PG&E Rate Schedules	Season	Hours Applied	PG&E Generation Rate ($) as of March 1, 2017	Green Rate ($)	SuperGreen Rate ($)	Billing Determinant
Agricultural Power, Time-of-Use (AG-4)	AG-4 A, AG-4 D	Summer	Peak	0.15892	0.13666	0.15066	kWh
			Off Peak	0.06861	0.04658	0.06058	kWh
			Connected Load	1.35000	1.35	1.35	kW
		Winter	Part Peak	0.07271	0.05067	0.06467	kWh
			Off Peak	0.06195	0.03984	0.05394	kWh
	AG-4 B, AG-4 E	Summer	Peak	0.12171	0.09955	0.11355	kWh
			Off Peak	0.07064	0.04860	0.06260	kWh
			Max Demand	2.39000	2.38	2.38	kW
			Max Peak Demand	2.54000	2.53	2.53	kW
			Primary Voltage Disc. (per Max Demand)	0.59000	0.59	0.59	kW
		Winter	Part Peak	0.06888	0.04685	0.06085	kWh
			Off Peak	0.05861	0.03660	0.05060	kWh
	AG-4 C, AG-4 F	Summer	Peak	0.13933	0.11712	0.13112	kWh
			Part Peak	0.07888	0.05682	0.07082	kWh
			Off Peak	0.05691	0.03491	0.04891	kWh
			Max Peak Demand	5.85000	5.84	5.84	kW
			Max Part Peak Demand	1.00000	1.00	1.00	kW
			Primary Voltage Disc. (per Max Peak Demand)	1.01000	1.01	1.01	kW
			Trans. Volt. Disc. Max Peak Demand	1.86000	1.86	1.86	kW
			Trans. Volt. Disc. Max Part-Peak Demand	-0.02000	(0.02)	(0.02)	kW
		Winter	Part Peak	0.06315	0.04113	0.05513	kWh
			Off Peak	0.05371	0.03172	0.04572	kWh
Large Time-of-Use Agricultural Power (AG-5)	AG-5 A, AG-5 D	Summer	Peak	0.14873	0.12650	0.14050	kWh
			Off Peak	0.07353	0.05149	0.06549	kWh
			Connected Load	3.70000	3.69	3.69	kW
		Winter	Part Peak	0.07701	0.05496	0.06896	kWh
			Off Peak	0.06568	0.04366	0.05766	kWh
	AG-5 B, AG-5 E	Summer	Peak	0.14527	0.12305	0.13705	kWh
			Off Peak	0.04884	0.02686	0.04086	kWh
			Max Demand	4.45000	4.44	4.44	kW
			Max Peak Demand	5.57000	5.56	5.56	kW
			Primary Voltage Disc. (per Max Demand)	1.39000	1.39	1.39	kW
			Trans. Volt. Disc. Max Demand	2.43000	2.42	2.42	kW
		Winter	Part Peak	0.06894	0.04691	0.06091	kWh
			Off Peak	0.04053	0.01857	0.03257	kWh
	AG-5 C, AG-5 F	Summer	Peak	0.11976	0.09760	0.11160	kWh
			Part Peak	0.06915	0.04712	0.06112	kWh
			Off Peak	0.05031	0.02832	0.04232	kWh
			Max Peak Demand	10.28000	10.25	10.25	kW
			Max Part Peak Demand	1.93000	1.93	1.93	kW
			Primary Voltage Disc. (per Max Peak Demand)	2.11000	2.10	2.10	kW
			Trans. Volt. Disc. Max Peak Demand	3.96000	3.95	3.95	kW
			Trans. Volt. Disc. Max Part-Peak Demand	0.00000	0.00	0.00	kW
		Winter	Part Peak	0.05596	0.03396	0.04796	kWh
			Off Peak	0.04739	0.02541	0.03941	kWh
Standby Service - Secondary and Primary Voltage	S	Year round	Reservation Charge	0.39000	0.39	0.39	kW
		Summer	Peak	0.09999	0.08900	0.10300	kWh
			Part Peak	0.08412	0.07317	0.08717	kWh
			Off Peak	0.06336	0.05246	0.06646	kWh
		Winter	Part Peak	0.08665	0.07569	0.08969	kWh
			Off Peak	0.07057	0.05965	0.07365	kWh
Standby Service - Transmission Voltage		Year round	Reservation Charge	0.32000	0.32	0.32	kW
		Summer	Peak	0.08396	0.07301	0.08701	kWh
			Part Peak	0.07078	0.05980	0.07386	kWh
			Off Peak	0.05335	0.04248	0.05648	kWh
		Winter	Part Peak	0.07285	0.06193	0.07593	kWh
			Off Peak	0.05947	0.04858	0.06258	kWh
NEM-CleanPowerSF Net Surplus Compensation Rates	NEM-CleanPowerSF	N/A	All hours	N/A	0.06930	0.08930	kWh

Understanding your energy choice

2016 Commercial Rate Comparison, A-1 TOU*	PG&E	PG&E Solar Choice (100% Renewable)	CleanPowerSF Green (35% Renewable)	CleanPowerSF SuperGreen (100% Renewable)
Generation Rate (kWh)	$0.09663	$0.10681	$0.07770	$0.09770
PG&E Delivery Rate (kWh)	$0.12894	$0.12894	$0.12894	$0.12894
PG&E PCIA/FF (kWh)	N/A	$0.01787	$0.01854	$0.01854
Total Electricity Cost (kWh)	$0.22557	$0.25362	$0.22518	$0.24518
Average Monthly Bill ($)	**$322.69**	**$362.81**	**$322.13**	**$350.74**

*This compares electricity costs for an average small commercial time-of-use customer in the CleanPowerSF/PG&E service area with an average monthly demand of 6 kW and an average monthly usage of 1,431 kilowatt-hours (kWh). This is based on a representative 12-month billing history for all customers on A-1 TOU rate schedules for PG&E's and CleanPowerSF's published rates as of May 1, 2016.

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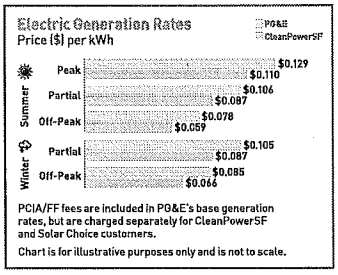
PG&E PCIA/FF represents the Power Charge Indifference Adjustment (PCIA) and the Franchise Fee surcharge (FF). The PCIA is a charge to recover PG&E's costs for generation resources that are currently above the market rate. These resources were committed to prior to a customer's switch to a third-party electric generation provider. The PCIA also applies to PG&E customers that elect to take service under PG&E's optional Solar Choice program. PG&E acts as a collection agent for the Franchise Fee surcharge. This fee is imposed by cities and counties in PG&E's service territory for all customers. The costs for resources included in the PCIA and FF surcharges are included in the generation rate for PG&E bundled service customers.

If this comparison does not address your specific rate, please visit us online at cleanpowersf.org or pge.com/cca.



PCIA/FF fees are included in PG&E's base generation rates, but are charged separately for CleanPowerSF and Solar Choice customers.

Chart is for illustrative purposes only and is not to scale.

Electric Power Generation Mix*	PG&E	PG&E Solar Choice	CleanPowerSF Green	CleanPowerSF SuperGreen
Specific Purchases	**Percent of Total Retail Sales (kWh)**			
Renewable	30%	100%	35%	100%
• Biomass & Biowaste	4%	0%	0%	0%
• Geothermal	5%	0%	0%	0%
• Eligible Hydroelectric	1%	0%	0%	0%
• Solar Electric	11%	100%	0%	0%
• Wind	8%	0%	35%	100%
Coal	0%	0%	0%	0%
Large Hydroelectric	6%	0%	28%	0%
Natural Gas	25%	0%	37%	0%
Nuclear	23%	0%	0%	0%
Other	0%	0%	0%	0%
Unspecified Sources of Power**	17%	0%	0%	0%
TOTAL	100%	100%	100%	100%

*As reported to the California Energy Commission's Power Source Disclosure Program excluding voluntary unbundled renewable energy credits. PG&E data is subject to an independent audit and verification that will not be completed until October 1, 2016. CleanPowerSF's generation data is a forecast for 2016. Actual 2016 generation data will be reported to the California Energy Commission in 2017. The figures above may not sum up to 100 percent due to rounding.

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2016 Commercial Rate Comparison, A-10S*	PG&E	PG&E Solar Choice (100% Renewable)	CleanPowerSF Green (35% Renewable)	CleanPowerSF SuperGreen (100% Renewable)
Generation Rate (kWh)	$0.09928	$0.10906	$0.07940	$0.09940
PG&E Delivery Rate (kWh)	$0.09318	$0.09318	$0.09318	$0.09318
PG&E PCIA/FF (kWh)	N/A	$0.01880	$0.01948	$0.01948
Total Electricity Cost (kWh)	$0.19246	$0.22104	$0.19206	$0.21206
Average Monthly Bill ($)	**$3,082.08**	**$3,539.76**	**$3,075.58**	**$3,395.86**

*This compares electricity costs for an average medium commercial customer in the CleanPowerSF/PG&E service area with an average monthly demand of 47 kW and an average monthly usage of 16,014 kilowatt-hours (kWh). This is based on a representative 12-month billing history for all customers on A-10S Non-TOU rate schedules for PG&E's and CleanPowerSF's published rates as of May 1, 2016.

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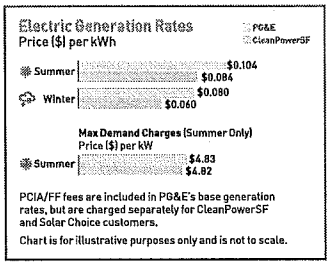

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Electric Power Generation Mix*	PG&E	PG&E Solar Choice	CleanPowerSF Green	CleanPowerSF SuperGreen
Specific Purchases	**Percent of Total Retail Sales (kWh)**			
Renewable	30%	100%	35%	100%
• Biomass & Biowaste	4%	0%	0%	0%
• Geothermal	5%	0%	0%	0%
• Eligible Hydroelectric	1%	0%	0%	0%
• Solar Electric	11%	100%	0%	0%
• Wind	8%	0%	35%	100%
Coal	0%	0%	0%	0%
Large Hydroelectric	6%	0%	28%	0%
Natural Gas	25%	0%	37%	0%
Nuclear	23%	0%	0%	0%
Other	0%	0%	0%	0%
Unspecified Sources of Power**	17%	0%	0%	0%
TOTAL	100%	100%	100%	100%

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2016 Residential Rate Comparison, E-1*	PG&E	PG&E Solar Choice (100% Renewable)	CleanPowerSF Green (35% Renewable)	CleanPowerSF SuperGreen (100% Renewable)
Generation Rate (kWh)	$0.09684	$0.10942	$0.07267	$0.09267
PG&E Delivery Rate (kWh)	$0.12499	$0.12499	$0.12499	$0.12499
PG&E PCIA/FF (kWh)	N/A	$0.02323	$0.02385	$0.02385
Total Electricity Cost (kWh)	$0.22183	$0.25764	$0.22151	$0.24151
Average Monthly Bill ($)	$64.44	$74.85	$64.35	$70.16

*This compares electricity costs for an average residential customer in the CleanPowerSF/PG&E service area with an average monthly usage of 291 kilowatt-hours (kWh). This is based on a representative 12-month billing history for all customers on E-1 rate schedules for PG&E's and CleanPowerSF's published rates as of May 1, 2016.

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Electric Power Generation Mix*	PG&E	PG&E Solar Choice	CleanPowerSF Green	CleanPowerSF SuperGreen
Specific Purchases	Percent of Total Retail Sales (kWh)			
Renewable	30%	100%	35%	100%
• Biomass & Biowaste	4%	0%	0%	0%
• Geothermal	5%	0%	0%	0%
• Eligible Hydroelectric	1%	0%	0%	0%
• Solar Electric	11%	100%	0%	0%
• Wind	8%	0%	35%	100%
Coal	0%	0%	0%	0%
Large Hydroelectric	6%	0%	28%	0%
Natural Gas	25%	0%	37%	0%
Nuclear	23%	0%	0%	0%
Other	0%	0%	0%	0%
Unspecified Sources of Power**	17%	0%	0%	0%
TOTAL	100%	100%	100%	100%

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2016 Commercial Rate Comparison, E-19S*	PG&E	PG&E Solar Choice (100% Renewable)	CleanPowerSF Green (35% Renewable)	CleanPowerSF SuperGreen (100% Renewable)
Generation Rate (¢/kWh)	$0.09615	$0.11137	$0.07925	$0.09925
PG&E Delivery Rate (¢/kWh)	$0.07828	$0.07828	$0.07828	$0.07828
PG&E PCIA/FF (¢/kWh)	N/A	$0.01588	$0.01653	$0.01653
Total Electricity Cost (¢/kWh)	$0.17443	$0.20553	$0.17406	$0.19406
Average Monthly Bill (§)	$46,921.24	$55,286.82	$46,821.45	$52,201.25

*This compares electricity costs for an average large commercial customer in the CleanPowerSF/PG&E service area with an average monthly demand of 660 kW and an average monthly usage of 268,990 kilowatt-hours (kWh). This is based on a representative 12-month billing history for all customers on E-19S rate schedules for PG&E's and CleanPowerSF's published rates as of May 1, 2016.

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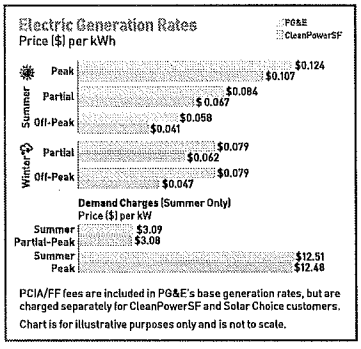

PCIA/FF fees are included in PG&E's base generation rates, but are charged separately for CleanPowerSF and Solar Choice customers.

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Electric Power Generation Mix*	PG&E	PG&E Solar Choice	CleanPowerSF Green	CleanPowerSF SuperGreen
Specific Purchases	Percent of Total Retail Sales (kWh)			
Renewable	30%	100%	35%	100%
• Biomass & Biowaste	4%	0%	0%	0%
• Geothermal	5%	0%	0%	0%
• Eligible Hydroelectric	1%	0%	0%	0%
• Solar Electric	11%	100%	0%	0%
• Wind	8%	0%	35%	100%
Coal	0%	0%	0%	0%
Large Hydroelectric	6%	0%	28%	0%
Natural Gas	25%	0%	37%	0%
Nuclear	23%	0%	0%	0%
Other	0%	0%	0%	0%
Unspecified Sources of Power	17%	0%	0%	0%
TOTAL	100%	100%	100%	100%

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2017 Commercial Rate Comparison, A-1 TOU*		PG&E Solar Choice (100% Renewable)	CleanPowerSF Green (40% Renewable)	CleanPowerSF SuperGreen (100% Renewable)
Generation Rate	$0.09798	$0.09270	$0.07510	$0.08910
PG&E Delivery Rate	$0.13242	$0.13242	$0.13242	$0.13242
PG&E PCIA/FF (new)	N/A	$0.02199	$0.02264	$0.02264
Total Monthly Generation	$0.23040	$0.24711	$0.23016	$0.24416
Average Monthly Bill ($)	$335.47	$359.47	$334.81	$355.18

*This compares electricity costs for an average small commercial time-of-use (TOU) customer in the CleanPowerSF/PG&E service area with an average monthly usage of 1,455 kilowatt-hours (kWh). This is based on a representative 12-month billing history for all customers on A-1 TOU rate schedules for PG&E's and CleanPowerSF's published rates as of July 1, 2017.

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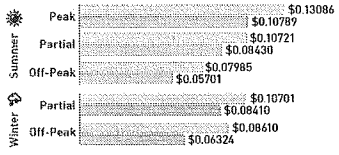
Electric Generation Rates

Price ($) per kWh



PCIA/FF fees are included in PG&E's base generation rates, but are charged separately for CleanPowerSF and Solar Choice customers.

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Electric Power Generation Mix*		PG&E Solar Choice	CleanPowerSF Green	CleanPowerSF SuperGreen
Specific Purchases	Percent of Total Retail Sales (kWh)			
Renewable	33%	100%	40%	100%
• Biomass & Biowaste	4%	0%	0%	0%
• Geothermal	5%	0%	0%	0%
• Eligible Hydroelectric	3%	0%	0%	0%
• Solar Electric	13%	100%	0%	0%
• Wind	8%	0%	40%	100%
Coal	0%	0%	0%	0%
Large Hydroelectric	12%	0%	38%	0%
Natural Gas	17%	0%	22%	0%
Nuclear	24%	0%	0%	0%
Other	0%	0%	0%	0%
Unspecified Sources of Power**	14%	0%	0%	0%
TOTAL	100%	100%	100%	100%

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2017 Commercial Rate Comparison, A-10SX*	PG&E	PG&E Solar Choice (100% Renewable)	CleanPowerSF Green (40% Renewable)	CleanPowerSF SuperGreen (100% Renewable)
Generation Rate ($/kWh)	$0.09925	$0.09161	$0.07580	$0.08980
PG&E Delivery Rate ($/kWh)	$0.09655	$0.09655	$0.09655	$0.09655
PG&E PCIA/FF ($/kWh)	N/A	$0.02253	$0.02321	$0.02321
Total Electricity Cost ($/kWh)	$0.19580	$0.21069	$0.19556	$0.20956
Average Monthly Bill ($)	$2,962.16	$3,187.43	$2,958.46	$3,170.26

*This compares electricity costs for an average medium commercial time-of-use (TOU) customer in the CleanPowerSF/PG&E service area with an average monthly demand of 44 kW and an average monthly usage of 15,129 kilowatt-hours (kWh). This is based on a representative 12-month billing history for all customers on A-10SX TOU rate schedules for PG&E's and CleanPowerSF's published rates as of July 1, 2017.

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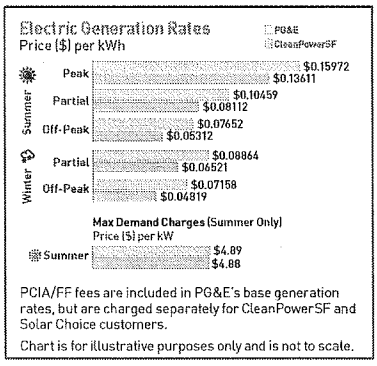

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Electric Power Generation Mix*	PG&E	PG&E Solar Choice	CleanPowerSF Green	CleanPowerSF SuperGreen
Specific Purchases	Percent of Total Retail Sales (kWh)			
Renewable	33%	100%	40%	100%
• Biomass & Biowaste	4%	0%	0%	0%
• Geothermal	5%	0%	0%	0%
• Eligible Hydroelectric	3%	0%	0%	0%
• Solar Electric	13%	100%	0%	0%
• Wind	8%	0%	40%	100%
Coal	0%	0%	0%	0%
Large Hydroelectric	12%	0%	38%	0%
Natural Gas	17%	0%	22%	0%
Nuclear	24%	0%	0%	0%
Other	0%	0%	0%	0%
Unspecified Sources of Power	14%	0%	0%	0%
TOTAL	100%	100%	100%	100%

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2017 Residential Rate Comparison, E-1*	PG&E	PG&E Solar Choice (100% Renewable)	CleanPowerSF Green (40% Renewable)	CleanPowerSF SuperGreen (100% Renewable)
Generation Rate ($/kWh)	$0.09838	$0.09529	$0.06836	$0.08836
PG&E Delivery Rate ($/kWh)	$0.13250	$0.13250	$0.13250	$0.13250
PG&E PCIA/FF ($/kWh)	N/A	$0.02919	$0.02977	$0.02977
Total Electricity Cost ($/kWh)	0.23088	$0.25698	$0.23063	$0.25063
Average Monthly Bill ($)	$64.70	$71.95	$64.63	$70.24

*This compares electricity costs for an average residential customer in the CleanPowerSF/PG&E service area with an average monthly usage of 280 kilowatt-hours (kWh). This is based on a representative 12-month billing history for all customers on E-1 rate schedules for PG&E's and CleanPowerSF's published rates as of July 1, 2017.

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PG&E PCIA/FF represents the Power Charge Indifference Adjustment (PCIA) and the Franchise Fee surcharge (FF). The PCIA is a charge to recover PG&E's costs for generation resources that are currently above the market rate. These resources were committed to prior to a customer's switch to a third-party electric generation provider. The PCIA also applies to PG&E customers that elect to take service under PG&E's optional Solar Choice program. PG&E acts as a collection agent for the Franchise Fee surcharge. This fee is imposed by cities and counties in PG&E's service territory for all customers. The costs for resources included in the PCIA and FF surcharges are included in the generation rate for PG&E bundled service customers.

If this comparison does not address your specific rate, please visit us online at cleanpowersf.org or pge.com/cca.

Electric Power Generation Mix*	PG&E	PG&E Solar Choice	CleanPowerSF Green	CleanPowerSF SuperGreen
Specific Purchases	**Percent of Total Retail Sales (kWh)**			
Renewable	33%	100%	40%	100%
• Biomass & Biowaste	4%	0%	0%	0%
• Geothermal	5%	0%	0%	0%
• Eligible Hydroelectric	3%	0%	0%	0%
• Solar Electric	13%	100%	0%	0%
• Wind	8%	0%	40%	100%
Coal	0%	0%	0%	0%
Large Hydroelectric	12%	0%	38%	0%
Natural Gas	17%	0%	22%	0%
Nuclear	24%	0%	0%	0%
Other	0%	0%	0%	0%
Unspecified Sources of Power**	14%	0%	0%	0%
TOTAL	100%	100%	100%	100%

*As reported to the California Energy Commission's Power Source Disclosure Program excluding voluntary unbundled renewable energy credits. PG&E data is subject to an independent audit and verification that will not be completed until October 1, 2017. The figures above may not sum up to 100 percent due to rounding.

**Unspecified sources of power refers to electricity that is not traceable to a specific generating facility, such as electricity traded through open market transactions. Unspecified sources of power are typically a mix of all resource types, and may include renewables.

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Understanding your energy choice

2017 Commercial Rate Comparison, E-19S*	PG&E	PG&E Solar Choice (100% Renewable)	CleanPowerSF Green (40% Renewable)	CleanPowerSF SuperGreen (100% Renewable)
Generation Rate ($/kWh)	$0.09635	$0.09445	$0.07658	$0.09058
PG&E Delivery Rate ($/kWh)	$0.08175	$0.08175	$0.08175	$0.08175
PG&E PCIA/FF ($/kWh)	N/A	$0.01889	$0.01953	$0.01953
Total Electricity Cost ($/kWh)	$0.17810	$0.19509	$0.17786	$0.19186
Average Monthly Bill ($)	$46,012.98	$50,403.26	$45,950.52	$49,567.55

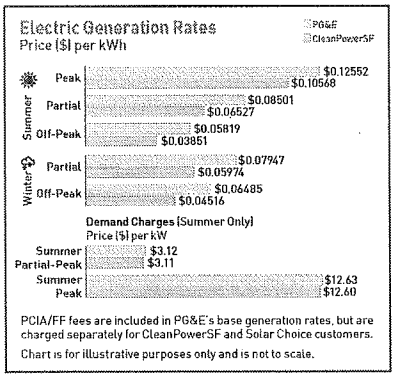
*This compares electricity costs for an average large commercial customer in the CleanPowerSF/PG&E service area with an average monthly demand of 640 kW and an average monthly usage of 258,359 kilowatt-hours (kWh). This is based on a representative 12-month billing history for all customers on E-19S rate schedules for PG&E's and CleanPowerSF's published rates as of July 1, 2017.

Generation Rate is the cost of creating electricity to power your business. The generation rate varies based on your energy provider and the resources included in your energy provider's generation supply.

PG&E Delivery Rate is a charge assessed by PG&E to deliver electricity to your business. The PG&E delivery rate depends on your electricity usage, but is charged equally to both CleanPowerSF and PG&E customers.

PG&E PCIA/FF represents the Power Charge Indifference Adjustment (PCIA) and the Franchise Fee surcharge (FF). The PCIA is a charge to recover PG&E's costs for generation resources that are currently above the market rate. These resources were committed to prior to a customer's switch to a third-party electric generation provider. The PCIA also applies to PG&E customers that elect to take service under PG&E's optional Solar Choice program. PG&E acts as a collection agent for the Franchise Fee surcharge. This fee is imposed by cities and counties in PG&E's service territory for all customers. The costs for resources included in the PCIA and FF surcharges are included in the generation rate for PG&E bundled service customers.

If this comparison does not address your specific rate, please visit us online at cleanpowersf.org or pge.com/cca.



PCIA/FF fees are included in PG&E's base generation rates, but are charged separately for CleanPowerSF and Solar Choice customers.

Chart is for illustrative purposes only and is not to scale.

Electric Power Generation Mix*	PG&E	PG&E Solar Choice	CleanPowerSF Green	CleanPowerSF SuperGreen
Specific Purchases	Percent of Total Retail Sales (kWh)			
Renewable	33%	100%	40%	100%
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