

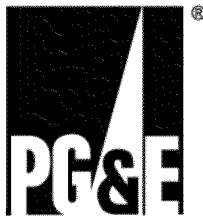
Application: 11-07-
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Exhibit No.:
Date: July 21, 2011
Witness: Marino Monardi

PACIFIC GAS AND ELECTRIC COMPANY

GWF TRANSACTION

PREPARED TESTIMONY

PUBLIC VERSION



**PACIFIC GAS AND ELECTRIC COMPANY
TESTIMONY IN SUPPORT OF THE GWF TRANSACTION**

PACIFIC GAS AND ELECTRIC COMPANY
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Appendix A: Statement of Qualifications of Marino Monardi

1 **PACIFIC GAS AND ELECTRIC COMPANY**
2 **TESTIMONY IN SUPPORT OF THE GWF TRANSACTION**

3 **A. Introduction**

4 Pacific Gas and Electric Company (“PG&E”) seeks California Public Utilities
5 Commission (“CPUC” or “Commission”) approval of three contracts in
6 connection with a transaction with GWF. The GWF Transaction involves
7 seven GWF power plants—the Hanford power plant located in Hanford,
8 California; the Henrietta power plant located in Lemoore, California; and
9 five petroleum coke power plants located in the San Francisco Bay Area Delta
10 region in California. All seven power plants are currently under contract with
11 PG&E. The Power Purchase Agreements (“PPA”) for the first two power plants,
12 Hanford and Henrietta, are scheduled to terminate on December 31, 2012. The
13 Qualifying Facility (“QF”) PPAs for the petroleum coke power plants are
14 scheduled to terminate in 2020 and 2021.

15 The GWF Transaction involves three separate agreements: an Omnibus
16 Agreement which governs the shutdown of the five GWF petroleum coke power
17 plants and the termination of their associated, existing QF PPAs; and two new
18 10-year PPAs with the Hanford and Henrietta facilities. Altogether, these related
19 agreements are referred to as the “GWF Transaction.” PG&E reviewed the GWF
20 Transaction with its Procurement Review Group (“PRG”) on July 1, 2011 and
21 asked for comments from the PRG on the proposed transaction by July 8, 2011.

22 As described in more detail below, PG&E is submitting the GWF Transaction
23 in response to a bilateral proposal from GWF. The agreements negotiated by
24 PG&E and GWF will provide significant environmental benefits for California
25 and are reasonable and beneficial to PG&E’s customers. For the reasons
26 described in PG&E’s Application and this testimony, the GWF Transaction
27 should be expeditiously approved by the Commission.

28 **1. Overview of the GWF Transaction**

29 The following is a brief description of the contracts that comprise the
30 GWF Transaction. The terms and conditions of each contract are described
31 in detail in Section B.

32 ffi The Omnibus Transaction Agreement (“Omnibus Agreement”) – Under
33 the Omnibus Agreement, GWF and PG&E have agreed to terminate the

1 QF PPAs associated with GWF’s five Bay Area petroleum coke facilities
2 to facilitate the shutdown of these facilities.

- 3 ffi The Peaker Power Purchase Agreements (“Peaker PPAs”) – Under the
4 Peaker PPAs, GWF will provide dispatchable energy and capacity from
5 the Hanford and Henrietta facilities for 10 years commencing January 1,
6 2013.

7 **2. Overview of the GWF Transaction Benefits**

8 There are a number of significant benefits associated with the GWF
9 Transaction. First, the GWF Transaction results in a significant reduction in
10 greenhouse gas (“GHG”) emissions from PG&E’s portfolio of resources in
11 support of and well in advance of the State’s emissions reductions targets.
12 California is leading the nation in efforts to reduce GHG emissions by setting
13 challenging emission reduction goals and adopting innovative GHG
14 programs. Shutting down GWF’s aging petroleum coke facilities will
15 provide significant GHG emissions reductions, which will benefit all
16 Californians.

17 Second, the GWF Transaction results in net customer savings. In other
18 words, the benefits of reduced payments from terminating the QF PPAs are
19 greater than the cost of replacement power and the cost of the Peaker PPAs.

20 Third, the GWF Transaction provides PG&E with needed dispatchable,
21 operationally flexible resources which also provide needed resource adequacy
22 and ancillary services.

23 Fourth, the GWF Transaction provides local reliability and environmental
24 benefits.

25 These benefits are described in detail in Section C below.

26 **3. Relief Requested**

27 PG&E requests the Commission issue an order by no later than
28 January 26, 2012, and earlier if possible, that:

- 29 ffi Approves the GWF Transaction and each of the three agreements
30 submitted in this application and finds each agreement to be reasonable
31 and in the best interest of customers;
- 32 ffi Authorizes PG&E to recover costs incurred pursuant to each of the
33 agreements through a debit to the Energy Resource Recovery Account

1 (“ERRA”) and the recovery of stranded costs consistent with
2 Commission Decision (“D.”) 08-09-012;

3 ffi Finds that procurement pursuant to the Peaker PPAs are not covered
4 procurement under the Emissions Performance Standard (“EPS”) adopted
5 in D.07-01-035; and

6 ffi Grants such other and further relief as the Commission finds just and
7 reasonable.

8 **B. Description of the GWF Transaction**

9 PG&E seeks Commission approval of the Peaker PPAs and the Omnibus
10 Agreement. The two PPAs are new 10-year agreements with GWF for its
11 Hanford and Henrietta facilities. The Omnibus Agreement details the terms and
12 conditions for the shutdown of GWF’s five Bay Area petroleum coke facilities
13 and the termination of their associated QF PPAs. This section describes the
14 existing facilities and the agreements associated with this transaction.

15 **1. Existing GWF Electric Generating Facilities**

16 **a. Peaker Facilities**

17 The GWF Hanford and GWF Henrietta facilities are both peaking
18 combustion turbine (“CT”) generation facilities located in California in
19 the cities of Hanford and Lemoore, respectively. Both facilities employ
20 General Electric LM 6000 Sprint simple cycle natural gas turbines,
21 typically referred to as CTs. The facilities provide a total of
22 approximately 175 megawatts (“MW”) of capacity on a peak summer
23 day. These units are currently under contract to PG&E through
24 December 31, 2012 as a result of the novation of the California
25 Department of Water Resources agreements, which was approved by the
26 Commission in D.10-07-042.

27 **b. Petroleum Coke Facilities**

28 The five GWF Bay Area petroleum coke facilities are non-
29 dispatchable, base-load facilities located in Contra Costa County along
30 the Sacramento River in or near Pittsburg and Antioch California. Each
31 facility is approximately 19 MW and is under contract to PG&E as a QF
32 with a termination date in 2020 or 2021. As base-load facilities, these

1 units operate year-round with capacity factors of roughly 90%.[1] PG&E
2 has no ability to dispatch these units in order to follow its customers'
3 electricity demand or to reduce output when demand is low. The
4 facilities burn petroleum coke, a waste product of the oil refining process,
5 as their source of fuel and as such are extremely carbon intensive. On a
6 pounds per megawatt-hour ("MWh") basis, these units emit more than
7 twice the GHG emissions as the Hanford and Henrietta facilities. In total
8 these facilities emit almost 1 million metric tons of GHG emissions per
9 year, representing a sizable portion of California in-state electricity sector
10 GHG emissions compared to the portion of the State's electricity supplied
11 by these facilities.

12 2. Description of the Qualifying Facility Power Purchase Agreements

13 Under the existing QF PPAs,[2] PG&E receives energy and
14 approximately 88 MW of Resource Adequacy ("RA") capacity from the
15 units. In return, PG&E pays for energy and capacity subject to terms of the
16 QF PPAs. The QF PPA energy payments are based on the Short-Run
17 Avoided Cost ("SRAC") price. [REDACTED]

18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]. Under the
22 Qualifying Facility and Combined Heat and Power ("QF/CHP") Settlement
23 approved by the Commission in D.10-12-035, PG&E will also pay GWF for

[1] Over the past 20+ years of performance, GWF's petroleum coke plants have consistently demonstrated reliably high levels of performance. The Performance Bonus Factor (PBF), and important billing factor in QF contracts which increases the capacity payment based on plant reliability, is based upon the rolling five year average of the plant's energy delivery performance during important peak and partial-peak time periods in summer months. In 2010, GWF's Delta Plants had a 98.9% average peak season capacity as well as a rolling 5-year average PBF of 1.159, which is 98.5% of the maximum PBF possible for any plant.

[2] PG&E Log Numbers 01P049, 01P086, 01P091, 01P051 and 01P087.

1 GHG emissions through 2014.^[3] After that point in time, GHG emissions
2 costs will be paid solely through the SRAC price for energy.

3 Under the QF PPAs, GWF would be required to pay minimum damages
4 to PG&E if it terminates the agreement early, reflecting the fact that
5 customers paid front-end loaded capacity payments in the earlier years of the
6 contracts. PG&E estimates this payment would be approximately
7 \$ [REDACTED] if GWF ceased to perform under the QF PPAs in 2012. The
8 damage payment if GWF ceased to perform under the contracts in a later year
9 is reduced reflecting the longer term of service under the contracts.

10 **3. Viability of Petroleum Coke Facilities Under the Qualifying Facility**
11 **Power Purchase Agreements**

12 PG&E has conducted a site visit to assess the condition of each of the
13 five GWF's petroleum coke facilities, including current operating status and
14 general observations, and to prepare an opinion as to each facility's ability to
15 continue to operate through the remaining PPA term. All five facilities were
16 operational during the site visits on July 6, 2011. PG&E found that each site
17 was orderly and well maintained. There were some indications of need for
18 minor upkeep, but all equipment appeared to be functional and in service.
19 Based on the limited information available during the site visit, it appeared
20 that the facilities are physically capable of continued operation.

21 [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 [REDACTED]
25 [REDACTED]
26 [REDACTED]
27 [REDACTED]

[3] In its analysis of this transaction, PG&E assumed GWF would select payment option C3 under the QF/CHP Settlement to maximize their energy payment revenues. This option caps GHG emission payment at a price of \$12.50 per ton and at 85% of a unit's actual emissions.

[4] [REDACTED]

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[REDACTED]

Even though PG&E cannot positively determine that the facilities would continue to operate throughout the remainder of the QF PPA terms (i.e., 2020 or 2021), a number of other factors support the GWF Transaction:

- ffi The customer savings from GWF Transaction are quantifiable and reasonably certain whereas collection of potential termination damages under the QF PPAs is uncertain due to questions concerning whether:
(1) GWF will continue to perform under the QF PPAs by altering its operating mode or cutting other expenses; and (2) PG&E will be able to collect early termination damages from GWF;^[6] and
- ffi The customer savings that would result from termination of the QF PPAs result in large part from early termination of the capacity payments made under those contracts. GWF's continued operation under the QF PPAs

[5] [REDACTED]

[6] The QF PPAs are with a special purpose entity. As such, although PG&E does not know for certain that the facilities are viable, if they do not operate, the costs and probability of PG&E collecting termination damages are uncertain.

1 would reduce the possible benefits from terminating the PPAs. PG&E
2 estimates continued operation to reduce the savings by about [REDACTED]

3 [REDACTED]
4 The GWF Transaction would also reduce possible settlement costs and
5 procurement uncertainty related to the possible termination of the QF PPAs.

6 **4. Description of the Omnibus Agreement**

7 The Omnibus Agreement specifies the terms and conditions of the GWF
8 Transaction related to the shutdown of the petroleum facilities and effective
9 payments to these facilities during the Commission approval process.

10 Specifically the Omnibus Agreement provides that:

11 ffi [REDACTED]
12 [REDACTED]
13 [REDACTED]

14 ffi [REDACTED]
15 [REDACTED];

16 ffi [REDACTED]
17 [REDACTED]
18 [REDACTED];

19 ffi [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]
23 [REDACTED]

[7] [REDACTED]

[8] [REDACTED]

1 ffi [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED];
5 ffi [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED];
9 ffi The GWF QF PPAs automatically terminate when the Commission
10 approval is final and non-appealable at which time GWF will cease to use
11 petroleum coke at the facilities;
12 ffi [REDACTED]
13 [REDACTED]
14 ffi [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 ffi [REDACTED]
20 [REDACTED].

21 **5. Description of the Peaker Power Purchase Agreements**

22 The Peaker PPAs provide PG&E with the ability to dispatch reliable and
23 operationally flexible CTs. GWF will continue to own and operate the
24 facilities, and energy from these facilities will be purchased by PG&E over a
25 10-year period beginning January 1, 2013. PG&E will have full dispatch
26 rights over the facilities during that period, and will utilize the units to help
27 ensure system reliability and to help integrate a growing amount of
28 intermittent renewable generation.

29 The Peaker PPAs are fuel conversion agreements, under which PG&E
30 will pay for the fuel and arrange to make it available at each project. GWF
31 will then be paid the following to convert that fuel into energy:

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ffi [REDACTED]
[REDACTED]
[REDACTED];
ffi [REDACTED]
[REDACTED]
[REDACTED]
ffi [REDACTED]
[REDACTED]
ffi [REDACTED]
[REDACTED].

11 **C. The GWF Transaction Is Reasonable and Beneficial**

12 **1. Market Value**

13 PG&E estimates that the GWF Transaction will result in a net savings to
14 customers of approximately \$15 million. These savings result from net
15 reduction in energy, capacity and GHG emissions payments under the
16 existing QF PPAs (QF PPA payments less the costs of replacement power)
17 less the net market value of the Peaker PPAs. In particular, upon final and
18 non-appealable CPUC approval, the Omnibus Agreement would result in
19 customer savings of \$ [REDACTED] from the termination of the QF PPAs (net
20 of the market cost of replacement power). This calculation of customer
21 savings assumes a Commission decision that is final and non-appealable as of
22 March 1, 2012. The Peaker PPAs have a net market value of [REDACTED].
23 This valuation takes into account all costs including those costs associated
24 with GHG emissions and capacity and energy benefits.

25 **2. Greenhouse Gas Reductions**

26 The GWF Transaction achieves an early net reduction of over
27 600,000 metric tons of GHG emissions per year from PG&E’s portfolio. The
28 five GWF petroleum coke facilities emit on a pounds per MWh basis more
29 than twice the GHG emissions of the Hanford and Henrietta facilities and
30 almost three times as the average market facility. In total the five GWF
31 petroleum coke facilities emit almost 1 million metric tons of GHG emissions
32 per year. Although there will be increased GHG emissions associated with

1 operation of the Henrietta and Hanford facilities under the Peaker PPAs and
2 with other replacement power purchases,^[9] the net reduction in GHG
3 emissions will be approximately 600,000 metric tons of GHG emissions per
4 year from PG&E's portfolio. This is consistent with the State's goal of
5 reducing GHG emissions and is well in advance of the reduction targets
6 established by Assembly Bill 32.

7 **3. Dispatchability and Operating Flexibility**

8 The Peaker PPAs provide unit specific dispatch throughout the year. As
9 the amount of renewable generating capacity grows in response to
10 California's Renewable Portfolio Standard, the resources that are able to
11 respond to changing grid conditions will become even more important over
12 time. In addition, the units will also offer PG&E a range of ancillary services
13 and other capabilities, including spinning reserves, quick start capability and
14 a large number of starts and operating hours. PG&E does not have any
15 ability to dispatch the GWF petroleum coke facilities under the existing QF
16 PPAs.

17 **4. Resource Adequacy**

18 The Hanford and Henrietta facilities provide local RA in the Fresno
19 transmission constrained area. The Peaker PPAs with these units will help
20 meet PG&E's local RA requirements during the contract term.

21 **5. Other Benefits**

22 In addition to the above benefits, the GWF Transaction will result in
23 significant other environmental benefits. The GWF petroleum coke facilities
24 are located in Contra Costa communities that are heavily burdened by
25 numerous nearby power plants and other industrial facilities. The shutdown
26 of the petroleum coke facilities would benefit local communities with specific
27 local and regional environmental improvements. GWF has represented to
28 PG&E that these include the reduction of criteria pollutants (by more than
29 725 tons annually), ozone emissions (by more than 260 tons annually),
30 particulate matter precursor emissions (by more than 640 tons annually),

[9] PG&E estimates the GHG emissions from Hanford and Herrietta operations and replacement market purchases will be about [REDACTED] metric tons and [REDACTED] metric tons, respectively.

1 water use (by more than 1,800 acre feet annually) and the elimination of
2 roughly 14,000 diesel truck trips hauling petroleum coke fuel and limestone
3 from refineries through Contra Costa neighborhoods to the facilities.

4 **D. Compliance With the Commission’s Greenhouse Gas Emissions**
5 **Performance Standard and PG&E’s Greenhouse Gas Reduction**
6 **Strategy**

7 **1. Conformance of Peaker Power Purchase Agreements With the Emissions**
8 **Performance Standard**

9 In 2006, the California state legislature passed Senate Bill (“SB”) 1368,
10 precluding utilities from signing long-term contracts for high GHG-emission
11 baseload generation. In relevant part, the statute states:

12 (4) In determining whether a long-term financial commitment is for
13 baseload generation, the commission shall consider the design of the
14 powerplant and the intended use of the powerplant, as determined by the
15 commission based upon the electricity purchase contract, any
16 certification received from the Energy Commission, any other permit or
17 certificate necessary for the operation of the powerplant, including a
18 certificate of public convenience and necessity, and procurement
19 approval decision for the load-serving entity, and any other matter the
20 commission determines is relevant under the circumstances.^[10]

21 In January 2007, the Commission adopted the criteria to be used to
22 establish conformance with SB 1368 for long-term commitments.^[11] The
23 adopted EPS applies to:

- 24 1. Contracts five years or greater; and
25 2. Generating facilities designed and intended to provide electricity at an
26 annualized capacity factor of 60% or greater.

27 If the above criteria are true, then the facility’s Carbon Dioxide (“CO₂”)
28 emissions rate for which PG&E seeks approval in this application must be
29 less than 1,100 pounds per MWh.^[12]

30 For EPS compliance purposes, a review of the Peaker PPAs resolves the
31 first SB 1368 requirement (contract five years or greater). The Peaker PPAs

[10] SB 1368, Stats. 2006 (2005-2006 Reg. Sess.) ch. 598 § 8341(b)(4).

[11] See D.07-01-039. The 1,100 lbs CO₂/MWh equates to a heat rate of approximately 9,413 British thermal unit per kilowatt-hour for a facility burning natural gas.

[12] *Id.*, p. 8.

1 are for a delivery term of 10 years with specified resources with no system
2 purchases.

3 With regard to the second requirement (an annualized capacity factor of
4 60% or greater), the Peakers are General Electric LM 6000 natural gas simple
5 cycle CTs. As part of the evaluation of the Peaker PPAs, a market valuation
6 was conducted. This analysis estimated the capacity factor for the Peakers at
7 approximately █%. As a result of this review, PG&E has concluded that the
8 Peakers are not subject to the EPS requirements since they are projected to
9 operate at substantially less than a 60% annualized capacity factor.

10 **2. Consistency With PG&E’s Greenhouse Gas Reduction Strategy**

11 The Long-Term Procurement Plan Decision requires the utilities to
12 “demonstrate how each application for fossil generation filed based on the
13 procurement authority granted in this proceeding fits into each
14 investor-owned utility’s GHG reduction strategy.”^[13] The Omnibus
15 Agreement provides for the shutdown of five existing petroleum coke
16 facilities that produce a significant amount of GHG emissions. Shutting
17 down this type of facility is consistent with PG&E’s strategy to reduce GHG
18 emissions from older, less efficient facilities. In addition, the Peaker PPAs
19 are structured as tolling agreements under which PG&E purchases and
20 supplies the natural gas and schedules power from the facilities. The Peaker
21 PPAs provide PG&E the flexibility to schedule power from the facilities
22 when demand is high and other lower operating cost, lower carbon footprint
23 resources are unavailable or are already fully utilized and producing power to
24 meet demand. The structure also allows PG&E to reduce output from the
25 facilities when demand is lower and when output from resources with lower
26 operating costs than the facilities is available. The Peaker PPAs will be
27 reliable and operationally flexible, with the flexibility supporting PG&E’s
28 efforts to integrate renewable generation and enable overall reductions in
29 GHG emissions in PG&E’s portfolio.

30 **E. Timing for Commission Approval**

31 PG&E requests the Commission issue an order approving the GWF
32 Transaction by no later than January 26, 2012, and earlier if possible. The earlier

[13] D.07-12-052, p. 291, Conclusion of Law 6.

1 the GWF Transaction is approved, the greater the customer benefits as a result of
2 the early shutdown of the GWF petroleum coke facilities and the termination of
3 higher payments under the QF PPAs. In addition, the sooner these facilities are
4 shutdown, the greater the GHG and criteria pollutant emission reductions. Early
5 action and approval on this application will result in increased customer savings
6 and an early reduction in GHG emissions from that shown above from the early
7 shutdown of the GWF petroleum coke facilities. PG&E estimates that additional
8 customer savings of approximately \$ [REDACTED] for each month before
9 February 2012 that the Commission issues an order approve the transaction. For
10 example, a Commission order approving the transaction by December 31, 2011
11 would result in an additional \$ [REDACTED] in customer savings.

12 **F. Cost Recovery**

13 PG&E seeks Commission approval to recover costs incurred pursuant to each
14 of the agreements through a debit to the ERRA and the recovery of stranded costs
15 consistent with D.08-09-012.

PACIFIC GAS AND ELECTRIC COMPANY
APPENDIX A
STATEMENT OF QUALIFICATIONS

1 **PACIFIC GAS AND ELECTRIC COMPANY**
2 **STATEMENT OF QUALIFICATIONS OF MARINO MONARDI**

3 Q 1 Please state your name and business address.

4 A 1 My name is Marino Monardi, and my business address is 77 Beale Street,
5 San Francisco, California.

6 Q 2 Briefly describe your responsibilities at Pacific Gas and Electric Company
7 ("PG&E").

8 A 2 I am a director in the Energy Supply Management organization and
9 responsible for management of the short-, medium- and long-term electric
10 portfolio.

11 Q 3 Please summarize your educational and professional background.

12 A 3 I have more than 26 years of experience working in the electric and gas utility
13 industry predominantly in the areas of structured transactions, planning,
14 trading and operations. I joined PG&E in 2004 where I have had leading
15 roles in several Request for Offers as well as structuring a number of
16 long-term power purchase transactions. Prior to my employment at PG&E,
17 I worked at Puget Sound Energy as a director in the Energy Portfolio
18 Management Division. There my responsibilities included overseeing the
19 development and implementation of hedging and optimization strategies and
20 programs to manage power and gas portfolio costs and risk, the structuring
21 and transacting of derivatives to manage price and volumetric risks, and the
22 analysis of power and gas markets and the portfolio to support such hedging
23 activities. I have also worked for the Sacramento Municipal Utility District
24 and the Illinois Department of Energy and Natural Resources. I attended the
25 University of Wisconsin/Parkside, and Indiana University where I received a
26 masters degree in public affairs with a specialization in energy economics.

27 Q 4 What is the purpose of your testimony?

28 A 4 I am sponsoring the testimony in support of PG&E's GWF Transaction
29 Application.

30 Q 5 Does this conclude your statement of qualifications?

31 A 5 Yes, it does.