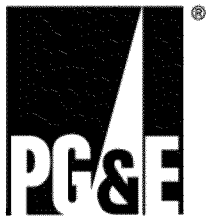
Application: 11-07-_____
(U 39 E)
Exhibit No.: _____
Date: July 21, 2011
Witness: Marino Monardi

PACIFIC GAS AND ELECTRIC COMPANY

GWF TRANSACTION

PREPARED TESTIMONY

CONFIDENTIAL VERSION



PACIFIC GAS AND ELECTRIC COMPANY

TESTIMONY IN SUPPORT OF THE GWF TRANSACTION

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

A. Introduction

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

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

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

1. Overview of the GWF Transaction

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

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

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

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

2. Overview of the GWF Transaction Benefits

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

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

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

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

These benefits are described in detail in Section C below.

3. Relief Requested

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

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

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

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

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

B. Description of the GWF Transaction

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

1. Existing GWF Electric Generating Facilities

a. Peaker Facilities

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

b. Petroleum Coke Facilities

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

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

2. Description of the Qualifying Facility Power Purchase Agreements

Under the existing QF PPAs,[2] PG&E receives energy and approximately 88 MW of Resource Adequacy ("RA") capacity from the units. In return, PG&E pays for energy and capacity subject to terms of the QF PPAs. The QF PPA energy payments are based on the Short-Run Avoided Cost ("SRAC") price. Capacity payments under the QF PPAs are approximately $18 million per year for the five QF PPAs in total. The QF PPAs provides that GWF will receive no capacity payments during the last five years of the contract term meaning that, beginning in 2016, PG&E will make minimal or no capacity payments for these facilities. Under the Qualifying Facility and Combined Heat and Power ("QF/CHP") Settlement approved by the Commission in D.10-12-035, PG&E will also pay GWF for

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[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.

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

Under the QF PPAs, GWF would be required to pay minimum damages to PG&E if it terminates the agreement early, reflecting the fact that customers paid front-end loaded capacity payments in the earlier years of the contracts. PG&E estimates this payment would be approximately $107 million if GWF ceased to perform under the QF PPAs in 2012. The damage payment if GWF ceased to perform under the contracts in a later year is reduced reflecting the longer term of service under the contracts.

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

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

PG&E has also assessed the economic viability of GWF's petroleum coke facilities under a variety of QF/CHP Settlement payment options and GHG pricing scenarios. This assessment is complicated by two unknowns—the impact of new GHG allocations on the operating cost of the plant and the relationship between SRAC pricing and petroleum coke costs. PG&E estimates that beginning in 2015,[4] under favorable QF pricing and conservative GHG pricing, the energy revenues paid to GWF under the QF

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[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] In 2015, the QF PPA capacity payments begin phasing out and GHG prices go to market. Given the carbon intensive nature of the petroleum coke facilities, payment for GHG emissions at market may not be not sufficient to compensate GWF for its GHG compliance costs.

PPAs will not be sufficient to cover the facility's operating costs. Under less conservative GHG price scenarios, PG&E estimates that the revenue/cost breakeven occurs earlier. PG&E's estimate assumes the GWF petroleum coke facilities continue to operate at their historic baseload level and makes assumptions regarding GWF's operating and fuel costs which PG&E is unable to verify. PG&E's assessment also assumes that the current provisions of CARB Discussion Draft remain in place, whereby GWF would have the compliance obligations and incur the costs associated with the cap and trade program in 2015.[5] For all these reasons, PG&E is unable to determine if the facilities will remain economically viable for the full term of the contracts or whether there are other operating modes or if GWF's actual operating and fuel costs are such that it is reasonable to expect that the facilities would continue to operate in some manner consistent with their PPAs throughout the remaining PPA terms.

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:

- 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

- 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

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[5] A small number parties, including GWF, have expressed concern to the CARB about the additional costs that they would incur under the cap and trade program, given that their power purchase agreements do not adjust to cover these costs. For these limited number of parties, this remains an open issue. *See* California Air Resources Board, "Notice of the Public Availability of Cap-and-Trade Discussion Draft and July 15, 2011 Workshop at 20," *available at:* http:arb.ca.gov/cc/capandtrade/meetings/072011/notice-and-summary.pdf.

[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.

would reduce the possible benefits from terminating the PPAs. PG&E estimates continued operation to reduce the savings by about $18 million in 2012, $21 million in 2013, and $16 million in 2014.[7]

The GWF Transaction would also reduce possible settlement costs and procurement uncertainty related to the possible termination of the QF PPAs.

4. Description of the Omnibus Agreement

The Omnibus Agreement specifies the terms and conditions of the GWF Transaction related to the shutdown of the petroleum facilities and effective payments to these facilities during the Commission approval process. Specifically the Omnibus Agreement provides that:

- The GWF Transaction is subject to the conditions precedent of: (1) the execution of the Omnibus Agreement; (2) the execution of the Peaker PPAs; and (3) the occurrence of initial Commission approval;[8]
- PG&E will use commercially reasonable efforts to obtain final Commission approval of the Omnibus Agreement and Peaker PPAs;
- GWF is released from all obligations under the QF PPAs upon initial Commission approval (including any obligation to pay damages for the early termination of the QF PPAs);
- GWF reimburses PG&E for any capacity payments made under the QF PPAs beginning March 1, 2012 and ending upon initial Commission approval (this condition is effective upon PG&E filing an application for approval notwithstanding the conditions precedent that the transaction is not effective until initial Commission approval);

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[7] With the delay in implementation of California Air Resource Board's cap-and-trade program it is fairly assumed that GWF will continue to operate through at least 2013 as the first compliance showings are now expected to take place in 2014. Continued operation for just two years would significantly reduce the value of terminating the QF PPAs. In other words, after this period PG&E receives more value from the contracts than in terminating them (not considering a possible termination payment).

[8] Under the Omnibus Agreement, Initial Commission Approval is defined as an order of the Commission in response to the Approval Application which approves each of the Peaker PPAs and this Omnibus Agreement, in each case, in their entirety without conditions or modifications (or with conditions or modifications which do not have a material adverse effect on any Party hereto (as determined by each such Party in its reasonable discretion)), including payments to be made by Buyer, subject to Commission review of Buyer's administration of each of the Peaker PPAs.

- PG&E's obligation to pay for energy and capacity at rates and prices under the existing QF PPAs is held in abeyance beginning midnight the day following initial Commission approval until the transaction approval is final and non-appealable or disapproved;
- GWF may elect to continue to operate the petroleum coke facilities after initial Commission approval until the approval is final and non-appealable and that during such operations PG&E will accept all electrical energy deliveries at the SRAC price;
- The GWF QF PPAs automatically terminate when the Commission approval is final and non-appealable at which time GWF will cease to use petroleum coke at the facilities;
- GWF will surrender its air permits for the QF PPAs within 30 days of when the Commission approval is final and non-appealable;
- The QF PPAs are reinstated without penalty if the Commission disapproves the transaction or the transaction is otherwise terminated and that a payment will be made to GWF to true-up any payments made during the approval process to those that would have actually been paid under the QF PPAs; and
- PG&E and/or GWF may terminate the transaction if Commission approval is not final and non-appealable by December 31, 2012.

5. Description of the Peaker Power Purchase Agreements

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

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

- A capacity payment of $87/ kilowatt-year (kW-yr), which is a non-indexed price. The annual capacity payment rate is fixed for the delivery period;
- A variable operations and maintenance rate of $4.37/MWh adjusted annually for movements in the Gross Domestic Product – Implicit Price Deflator (GDP-IPD) through the delivery period;
- A fired hour charge of $100/fired hour for each unit, adjusted annually for movements in the GDP-IPD through the delivery period; and
- A start-up payment of $200 for each unit, adjusted annually for movements in the GDP-IPD through the delivery period.

C. The GWF Transaction Is Reasonable and Beneficial

1. Market Value

PG&E estimates that the GWF Transaction will result in a net savings to customers of approximately $15 million. These savings result from net reduction in energy, capacity and GHG emissions payments under the existing QF PPAs (QF PPA payments less the costs of replacement power) less the net market value of the Peaker PPAs. In particular, upon final and non-appealable CPUC approval, the Omnibus Agreement would result in customer savings of $50.7 million from the termination of the QF PPAs (net of the market cost of replacement power). This calculation of customer savings assumes a Commission decision that is final and non-appealable as of March 1, 2012. The Peaker PPAs have a net market value of $(35.6 million). This valuation takes into account all costs including those costs associated with GHG emissions and capacity and energy benefits.

2. Greenhouse Gas Reductions

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

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

3. Dispatchability and Operating Flexibility

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

4. Resource Adequacy

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

5. Other Benefits

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

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[9] PG&E estimates the GHG emissions from Hanford and Herrietta operations and replacement market purchases will be about 57,000 metric tons and 288,000 metric tons, respectively.

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

D. Compliance With the Commission's Greenhouse Gas Emissions Performance Standard and PG&E's Greenhouse Gas Reduction Strategy

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

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

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

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

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

If the above criteria are true, then the facility's Carbon Dioxide ("CO_2") emissions rate for which PG&E seeks approval in this application must be less than 1,100 pounds per MWh.[12]

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

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

[11] *See* D.07-01-039. The 1,100 lbs CO_2/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.

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

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

2. Consistency With PG&E's Greenhouse Gas Reduction Strategy

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

E. Timing for Commission Approval

PG&E requests the Commission issue an order approving the GWF 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.

the GWF Transaction is approved, the greater the customer benefits as a result of the early shutdown of the GWF petroleum coke facilities and the termination of higher payments under the QF PPAs. In addition, the sooner these facilities are shutdown, the greater the GHG and criteria pollutant emission reductions. Early action and approval on this application will result in increased customer savings and an early reduction in GHG emissions from that shown above from the early shutdown of the GWF petroleum coke facilities. PG&E estimates that additional customer savings of approximately $1.1 million per month for each month before February 2012 that the Commission issues an order approve the transaction. For example, a Commission order approving the transaction by December 31, 2011 would result in an additional $1.1 million in customer savings.

F. Cost Recovery

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

PACIFIC GAS AND ELECTRIC COMPANY

APPENDIX A

STATEMENT OF QUALIFICATIONS

PACIFIC GAS AND ELECTRIC COMPANY
STATEMENT OF QUALIFICATIONS OF MARINO MONARDI

Q 1 Please state your name and business address.

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

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

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

Q 3 Please summarize your educational and professional background.

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

Q 4 What is the purpose of your testimony?

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

Q 5 Does this conclude your statement of qualifications?

A 5 Yes, it does.