**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Application of Pacific Gas and Electric Company for Approval of the Manzana Wind Project and Issuance of a Certificate of Public Convenience and Necessity. (U 39 E)	Application 09-12-002 (Filed December 3, 2009)

OPENING BRIEF OF PACIFIC GAS AND ELECTRIC COMPANY (U 39 E) IN SUPPORT OF ITS APPLICATION FOR APPROVAL OF THE MANZANA WIND PROJECT AND ISSUANCE OF A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY (CONFIDENTIAL VERSION)

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TABLE OF CONTENTS

Page

TABLE OF CONTENTS
(continued)

Page

TABLE OF CONTENTS
(continued)

Page

TABLE OF CONTENTS
(continued)

Page

TABLE OF CONTENTS
(continued)

Page

TABLE OF CONTENTS
(continued)

Page

TABLE OF AUTHORITIES

Page

CALIFORNIA PUBLIC UTILITIES COMMISSION DECISIONS AND RESOLUTIONS

TABLE OF CONTENTS
(continued)

Page

STATUTES

REGULATIONS

CPUC RULES OF PRACTICE AND PROCEDURE

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I. INTRODUCTION

Pacific Gas and Electric Company's ("PG&E") application for approval to acquire, develop and construct the Manzana Wind Project ("Project") and recover the costs of the Project in rates is reasonable and should be approved.

The Manzana Wind Project will be the first wind facility owned and operated by PG&E and will benefit California and PG&E customers in a number of ways. First, the Project is located in California's wind-rich Tehachapi region and, as an in-state renewable energy project, will contribute significantly toward meeting California's 20 percent Renewables Portfolio Standard ("RPS") goals. It will be operational as early as December 2011, and will account for up to 0.8 percent of PG&E's 2010 RPS goal under flexible compliance. There are few highly viable renewable projects of this magnitude that can be operational within this timeframe.

Second, the Project is a very competitive source of renewable power as compared to PG&E's other current alternatives and recent RPS transactions.

Finally, the Project is highly viable. It utilizes proven wind turbine technology, engages experienced wind energy developers to construct the Project, and is located in a widely-recognized wind resource region backed by nearly eight years of site-specific wind data. The Project is at an advanced stage of permitting and development. Construction can begin immediately following California Public Utilities Commission ("CPUC" or "Commission") approval of the Application and issuance of the Certificate of Public Convenience and Necessity.

In this Opening Brief, PG&E demonstrates that the Manzana Wind Project is a cost-competitive, highly viable, in-state wind resource that will significantly advance RPS goals and should be approved by the Commission.

II. FACTUAL AND PROCEDURAL BACKGROUND

The Manzana Wind Project will be located on approximately 7,000 acres in California's wind-rich Tehachapi region, on desert scrub land along ridge lines in a rural area of eastern Kern County.[1/] Although the Project has the potential to range between 189 megawatts ("MW") and 246 MW, PG&E ultimately expects that the Project will be sized at the full 246 MW.[2/] The Project's estimated annual wind net capacity factor is 31.1 percent. At this capacity factor, the Project will produce 670 gigawatt-hours ("GWh") annually, and would account for 0.8 percent of PG&E's 2010 RPS target under flexible compliance.[3/] The Project is expected to be fully operational as early as December 2011.[4/]

The Project will use General Electric 1.5 SLE wind turbines (rated at 1.5 MW), which are widely used and reliable wind turbines.[5/] The General Electric 1.5 SLE is considered the workhorse of the industry, and incorporates General Electric's latest updates and performance enhancements including voltage and power regulation, ride-through of grid disturbances, temporary boost in power for under-frequency grid events, service to optimize turbine layout for

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1/ Exhibits ("Exs.") 1-C and 2, at p. 2-1, lines 17-19 and p. 2-2, lines 3-4.
2/ Exs. 1-C and 2, at p. 2-8, lines 22-23; Exs. 9-C and 10, at p. 21, lines 16-17.
3/ Exs. 1-C and 2, at p. 2-1, lines 20-24.
4/ *Id.* at p. 2-1, lines 19-20.
5/ *Id.* at p. 2-1, lines 15-17.

a site, and tools to operate, maintain and manage a wind power plant. Over 7,750 General Electric 1.5 SLE units are installed globally, with 54,000 GWh of energy produced.[6/]

The Project will take advantage of already planned, Commission-approved transmission upgrades in the Tehachapi region. Specifically, the Project will interconnect to Southern California Edison Company's ("SCE") transmission system at the proposed Whirlwind Substation, which SCE will build as part of its Tehachapi Renewable Transmission Project ("TRTP"). The existing Midway-Vincent #3 500 kilovolt ("kV") line will be looped into the Whirlwind Substation, also as part of the TRTP, and the Project will connect to the Whirlwind Substation via a 220 kV radial generation interconnection transmission line ("Gen-tie") that PG&E will construct.[7/] The Commission approved the segments of the TRTP necessary for the Project's interconnection and granted a Certificate of Public Convenience and Necessity authorizing their construction on December 24, 2009.[8/] PG&E's completion of construction of the Gen-tie is scheduled for Redacted,[9/] and construction of the Whirlwind Substation and looping of the existing Midway-Vincent #3 500 kV line into Whirlwind are currently scheduled to be completed by Redacted[10/]

The Project was initially offered to PG&E in its 2005 RPS Request for Offers ("RFO") as a power purchase agreement and was shortlisted. During the period of time that the parties were negotiating, there were transmission issues resulting in delays and the economic downturn created difficulties for renewables projects to obtain financing. In early 2009, Iberdrola Renewables, Inc. ("Iberdrola Renewables") approached PG&E and offered to sell the Project. PG&E was receptive to the idea and the parties began to negotiate the potential sale of the

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6/ *Id.* at p. 2-3, lines 18-29.
7/ *Id.* at p. 2-13, lines 2-3, 7-10, 12-16.
8/ D.09-12-044 (certifying Final Environmental Impact Report, approving, and issuing a Certificate of Public Convenience and Necessity for Segments 4 through 11 of SCE's TRTP).
9/ Exs. 1-C and 2, at p. 5-12, Table 5-5, line 10.
10/ Exs. 9-C and 10, at p. 17, lines 12-31 and p. 18, lines 1-6.

Project.[11/]

PG&E performed due diligence on the Project beginning in June 2009, and ultimately concluded that the Project is highly viable in terms of schedule, technology, developer experience and price. In December 2009, PG&E and Iberdrola Renewables reached commercial agreement on PG&E's acquisition of the Project.[12/]

PG&E's acquisition, development and construction of the Project is implemented through two principal agreements. First, PG&E has entered into a Purchase and Sale Agreement ("PSA") with Iberdrola Renewables to acquire Iberdrola Renewables' subsidiary, Manzana Wind, LLC. Manzana Wind, LLC is a special purpose company that holds all of the Project's assets (with the exception of its turbines). These assets include real estate interests in the site reflected in lease obligations, permits, and rights for Project transmission as reflected in the California Independent System Operator ("CAISO") queue. Commission approval of PG&E's Application is a condition of closing under the PSA.[13/]

Second, if all of the conditions for closing under the PSA are satisfied, PG&E will enter into a Project Completion Agreement ("PCA") with PPM Technical Services, Inc., a wholly-owned subsidiary of Iberdrola Renewables.[14/] Iberdrola Renewables will then become responsible for completing Project development and for constructing the Project on PG&E's behalf (with the exception of the Gen-tie, for which PG&E has permitting and construction responsibility). The PCA shifts much of the risk associated with cost overruns to Iberdrola Renewables. It also includes a work scope that defines the Project features and includes Iberdrola Renewables' standard plant design and development plan, which it has successfully

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11/ Exs. 1-C and 2, at p. 2-5, lines 16-22.
12/ *Id.* at p. 2-5, lines 23-31.
13/ *Id.* at p. 2-6, lines 2-5, 12-19.
14/ For convenience, PG&E will refer to Iberdrola Renewables when discussing the duties and obligations of PPM Technical Services, Inc. under the PCA.

used to develop other projects in the United States. Finally, the PCA provides for the use of proven, reliable and efficient General Electric wind turbines, thereby minimizing technology risk, and incorporates the use of proven, experienced sub-contractors to complete the work.[15/]

One of the key provisions under the PSA pertains to the size of the Project. At the time PG&E's Application was filed in December 2009, Iberdrola Renewables had obtained key local development permits, executed land leases, and secured 126 turbines from a pre-existing turbine supply agreement with General Electric, all of which are sufficient for construction of 189 MW of the Project.[16/] Since December 2009, Iberdrola Renewables has secured the additional land leases required for a 246 MW project,[17/] and Kern County approved an Addendum to the Final Environmental Impact Report for the Project that includes the land required for the additional 57 MW to bring the Project to the full 246 MW size.[18/]

The only open issue with respect to the final project size is whether Redacted

Redacted

15/ Exs. 1-C and 2, at p. 2-6, lines 6-9, p. 2-9, lines 2-25, and p. 2-13, line 12.
16/ *Id.* at p. 2-6, lines 25-28 and p. 2-7, lines 1-3.
17/ Exs. 9-C and 10, at p. 20, lines 28-30.
18/ *Id.* at p. 20, lines 30-32 and p. 21, lines 1-2.
19/ *Id.* at p. 21, lines 5-7.
20/ *Id.* at p. 21, lines 7-9.
21/ *Id.* at p. 24, lines 14-16.

Redacted

Redacted PG&E believes it is highly likely that the Project will ultimately be built out to the full 246 MW.[22/]

As explained above, Iberdrola Renewables will complete development and construction of the Project. Iberdrola Renewables is a wholly owned subsidiary of the Spanish utility Iberdrola, S.A., which operates over 10,000 MW of wind facilities in over 40 countries. Iberdrola Renewables has a successful track record of developing wind farms in the United States. In total, Iberdrola Renewables owns, controls or operates 3,684 MW of wind resources in the United States, including 381 MW of wind generation in California. Iberdrola Renewables also owns, controls or operates 1,362 MW of General Electric wind turbines in the United States and has extensive experience with their construction, commissioning and operation. In addition, PG&E has three existing wind power purchase agreements with Iberdrola Renewables, the first of which was signed in 2005 and the most recent in 2008, one of which is located in California. Each of these projects commenced operation ahead of schedule and they are all delivering electricity in accordance with the terms of their respective contracts.[23/]

PG&E filed its Application for approval of the Project on December 3, 2009, accompanied by prepared testimony in support of its Application. The Application seeks: (1) a Certificate of Public Convenience and Necessity to authorize construction of both the wind facility and the associated Gen-tie; and (2) recovery of Project costs in rates. On January 6, 2010, the Independent Energy Producers Association filed a response to the Application, and on January 11, 2010, the Division of Ratepayer Advocates ("DRA") and the Greenlining Institute filed protests to the Application. PG&E submitted a reply to the response and protests on

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22/ *Id.* at p. 21, lines 9-17.

23/ Exs. 1-C and 2, at p. 2-3, line 29, p. 2-4, lines 1-2 and p. 2-5, lines 2-14.

January 21, 2010.

A prehearing conference was held on January 27, 2010, and a Ruling and Scoping Memorandum was issued on March 25, 2010. PG&E served revised prepared testimony on February 3, 2010 and supplemental testimony on April 2, 2010. On April 23, 2010, DRA and The Utility Reform Network ("TURN") served intervenor testimony, and PG&E served rebuttal testimony on May 7, 2010. PG&E also served errata to its revised prepared testimony on April 20, 2010.

PG&E held an all-party settlement conference on May 13, 2010 that was attended by PG&E, DRA, TURN and the Center for Biological Diversity. These parties did not settle or stipulate to any issues for this proceeding as a result of that conference. PG&E, DRA and TURN also engaged in settlement discussions outside of the May 13 conference, but were unable to reach agreement.

Evidentiary hearings were held from May 24, 2010 through May 26, 2010. Prior to evidentiary hearings and as directed by the Scoping Memorandum, PG&E, DRA and TURN submitted a Joint Case Management Statement and Settlement Conference Report ("Joint Case Management Statement") on May 21, 2010. The Joint Case Management Statement contained the following list of contested issues for this proceeding:

1. Is the Project cost-competitive as compared to other renewable projects?

   a. What are the proper benchmarks or alternatives to which the Project should be compared?

   b. What are the impacts on the Project's economics (including levelized cost of energy and net market value) if any of the following assumptions regarding the Project are modified:

      (i) Net capacity factor

      (ii) Potential for project delays

(iii) Project size

(iv) Project life

(v) Environmental risks

(vi) Risk of CAISO curtailment

(vii) Risk of missing Federal tax credit deadline

2. Are PG&E's initial capital cost estimates reasonable?

a. Whether it is reasonable for PG&E to recover a confidential component of the acquisition cost in rate base rather than as an expense.

b. Whether PG&E's proposed contingency applicable to the initial capital cost is reasonable.

3. Whether PG&E's proposal to seek adjustments to the initial capital cost via an expedited advice letter process, rather than through a non-expedited Advice Letter or Application, for operational enhancements to the Project, changes in law or other factors beyond PG&E's control, is reasonable.

4. Are elements of PG&E's Operations and Maintenance ("O&M") costs reasonable?

a. Whether the forecast for project staffing is reasonable.

b. Whether PG&E's proposed O&M contingency is reasonable.

c. Whether PG&E should use a one-way balancing account for O&M contingency.

5. Whether it is reasonable for PG&E to begin accruing decommissioning costs in the initial revenue requirement.

6. Whether PG&E's proposal to recover increased costs attributable to delays in commercial operations is reasonable, or whether an alternative ratemaking approach should be adopted.

7. What is the appropriate ratemaking treatment for the incremental 57 MW of the Project and should any conditions be adopted with respect to development of the additional 57 MW?

8. Whether it is reasonable to adopt an availability or other performance requirement for the Project.

9. Are the various proposals regarding the application of the Investment Tax Credit to the Project reasonable?

a. PG&E's proposal to adjust the initial revenue requirement if the Project is ineligible for the Investment Tax Credit or Production Tax Credit or if such credits are modified.

b. TURN's proposal to reduce PG&E's equity return.

c. DRA and TURN's proposals for CPUC pre-approval of the tax credit election.

d. TURN's proposal that PG&E seek a tax equity investor.

10. Should PG&E be pre-authorized under Public Utilities Code Section 851 to sell the Project back to Iberdrola under certain circumstances?

PG&E addresses each of these contested issues in this Opening Brief.

III. THE MANZANA WIND PROJECT IS A COST-COMPETITIVE SOURCE OF RENEWABLE POWER AS COMPARED TO OTHER RENEWABLE ALTERNATIVES

The Manzana Wind Project is a viable and cost-competitive source of renewable power as compared to other current and recent alternatives and represents a good value for PG&E's customers. PG&E compared the Project's net market value to the net market values of PG&E's long-term RPS contracts executed or amended and filed in the 12 months prior to submittal of the Application, and to long-term renewable projects that PG&E included on its shortlist for its 2009 RPS RFO. This analysis demonstrates the reasonableness and competitiveness of the Project's costs – on a net market value basis, the Project Redacted of 24 projects filed for approval and Redacted 30 projects shortlisted.

PG&E also engaged an experienced Independent Evaluator ("IE"), Sedway Consulting, to evaluate the Project. The IE conducted its own independent, parallel quantitative evaluation of the Project and concluded that it compared quite favorably to a set of recent RPS contracts executed by PG&E that the IE determined were most comparable to the Project.

The Joint Case Management Statement identified the following contested issues related to the cost-competitiveness of the Project:

1. Is the Project cost-competitive as compared to other renewable projects?

   a. What are the proper benchmarks or alternatives to which the Project should be compared?

   b. What are the impacts on the Project's economics (including levelized cost of energy and net market value) if any of the following assumptions regarding the project are modified:

      (i) Net capacity factor

      (ii) Potential for project delays

      (iii) Project size

      (iv) Project life

      (v) Environmental risks

      (vi) Risk of CAISO curtailment

      (vii) Risk of missing Federal tax credit deadline

These issues are addressed in this Section of PG&E's Opening Brief. In Section III.A. below, PG&E demonstrates the cost-competitiveness of the Project on a net market value basis as compared to current and recent alternatives for renewable power. In Sections III.B., III.C. and III.D. below, PG&E discusses the proper method for comparing the Project to other alternatives. In those sections, PG&E shows that net market value comparisons, as opposed to levelized cost of energy comparisons, are the best measure of cost-competitiveness, and that the proper benchmarks against which to compare the Project should include current and recent alternatives for all renewable power, not only for wind resources. Finally, in Section III.E. below, PG&E

demonstrates the reasonableness of the assumptions underlying its levelized cost of energy forecast for the Project.

A. The Project Is Cost-Competitive On A Net Market Value Basis As Compared To Current And Recent Alternatives For Renewable Power

In Chapter 4 of PG&E's prepared testimony (Exhibits 1-C and 2), PG&E compared the Project's net market value to the net market values of PG&E's long-term RPS contracts executed or amended and filed in the 12 months prior to submittal of the Application, and to long-term renewable projects that PG&E included on its shortlist for its 2009 RPS RFO. These comparisons demonstrate that the Project is a cost-competitive source of renewable power as compared to other current and recent alternatives.

PG&E calculated the net market value for the Project consistent with the methodology described in Section III.B. below. The market value of energy was calculated as Redacted/megawatt-hour ("MWh") and the capacity value was calculated as Redacted/MWh.[24/] The estimated levelized cost of the Project is Redacted/MWh, which includes estimated transmission costs.[25/] The Project's levelized cost was determined by dividing the net present value ("NPV") of the revenue requirement for the 30-year expected life of the Project by the NPV of the expected generation of the Project based on a 31.1 percent net capacity factor.[26/] Table 7-3 in Chapter 7 of PG&E's prepared testimony (provided below) shows the levelized cost of energy calculation, and the "Development of LCOE" Table in the workpapers supporting Chapter 7 of PG&E's prepared testimony provides detailed support for this calculation.[27/]

24/ Exs. 7-C and 8, clean replacement p. 3-3, lines 4-5.

25/ *Id.* at lines 5-8, 17-20.

26/ Exs. 1-C and 2, at p. 7-15, lines 1-2; Exs. 7-C and 8, at clean replacement p. 7-14, lines 17-19; Transcript ("Tr."), at p. 332, line 28 and p. 345, line 3 (O'Flanagan, PG&E).

27/ Exs. 7-C and 8, at clean replacement p. 7-14; Exhibit ("Ex.") 4-C, at pp. WP 7-17 to WP 7-19 (Table entitled "Development of LCOE").

TABLE 7-3
PACIFIC GAS AND ELECTRIC COMPANY
MANZANA WIND PROJECT
LEVELIZED COST OF ENERGY

Line No.		NPV of RRQ (a)	NPV of MWh (b)	LCOE (c) = (a)*1,000/(b)
1	LCOE	Redacted		

The inputs used to develop the NPV of the revenue requirement as shown in the above table are consistent with the inputs used in the initial revenue requirement for which PG&E is seeking approval in the Application, except that they exclude franchise fees, uncollectibles and working cash.[28/] Subtracting the cost of the Project from the sum of the Project's market value of energy and capacity value yields a net market value for the Project of Redacted /MWh.[29/]

PG&E compared the Project's net market value to PG&E's long-term RPS contracts that have been executed or amended and filed for approval with the Commission within the 12 months prior to submittal of the Application, which are listed in Table 1 below. This is an appropriate group of contracts against which to compare the Project because it reflects the final, fully negotiated renewable transactions most recently available to PG&E. Comparing the Project against this group of contracts is a balanced complement to the comparison against currently available renewable offers (discussed below), which ultimately may not materialize into final contracts or whose price and other terms may change during negotiations. This approach is also consistent with the manner in which the IE evaluated the reasonableness of the Project's costs, as is also discussed further below. As Table 1 demonstrates, the Project is highly competitive with PG&E's long-term RPS contracts filed for approval in the 12 months prior to filing of the Application – its net market value Redacted of 24 projects filed for approval.

28/ Exs. 1-C and 2, at p. 7-15, line 1; Exs. 7-C and 8, at clean replacement p. 7-14, lines 21-22.
29/ Exs. 7-C and 8, at clean replacement p. 3-3, lines 8-10.

TABLE 1
PACIFIC GAS AND ELECTRIC COMPANY
MANZANA WIND PROJECT
COMPARISON OF THE MANZANA WIND PROJECT TO PG&E'S LONG-TERM RPS CONTRACTS EXECUTED AND FILED WITHIN THE 12 MONTHS PRIOR TO SUBMITTAL OF THE APPLICATION[30/]

	Project Name	Location	Technology	COD	GWh	Net Market Value ($/MWh)†
1	Redacted					
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

30/ This table shows all of the contracts listed in Table 4-1 on page 4-4 of Exhibits 1-C and 2, PG&E's Revised Prepared Testimony, but presents them in a different order and eliminates several columns of information provided in Table 4-1. It also adds the Manzana Wind Project, which was not shown in Table 4-1.

Project Name	Location	Technology	COD	GWh	Net Market Value ($/MWh)†
Redacted					

† Net market values calculated based on energy values gathered in anticipation of Advice Letter filing.

PG&E also compared the Project to long-term renewable projects included on PG&E's 2009 RPS RFO shortlist, which are listed in Table 2 below. This table provides the range of net market values of RPS offers with which PG&E is considering entering into negotiations as a result of the current competitive RPS solicitation. The shortlisting process used net market value and project viability as the main criteria for further consideration.[31/]

Redacted

Redacted[32/] The 2009 RPS RFO shortlist Redacted

31/ Exs. 1-C and 2, at p. 4-2, lines 23-27.

32/ Tr., at p. 264, lines 16-17 and p. 266, lines 23-27 (Jeung, PG&E).

Redacted[33] and therefore provides appropriate cost-competitiveness benchmark information against which to compare the Project. As shown in Table 2 below, the Project is clearly cost-competitive as compared to this benchmark data. On a net market value basis Redacted 30 projects shortlisted.[34]

TABLE 2
PACIFIC GAS AND ELECTRIC COMPANY
MANZANA WIND PROJECT
COMPARISON OF THE MANZANA WIND PROJECT TO LONG-TERM OFFERS ON PG&E'S 2009 RPS RFO SHORTLIST[35]

	Project Name	Location	Technology	COD	GWhs	Net Market Value ($/MWH)
1	Redacted					
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						

33/ Tr., at p. 287, lines 25-28 and p. 286, lines 9-14 (Jeung, PG&E).
34/ Exs. 9-C and 10, at p. 8, lines 18-19.
35/ This table shows all of the offers listed in Table 4-2 on page 4-5 of Exhibits 1-C and 2, PG&E's Revised Prepared Testimony, but eliminates several columns of information provided in Table 4-2. It also adds the Manzana Wind Project, which was not shown in Table 4-2.

	Project Name	Location	Technology	COD	GWhs	Net Market Value ($/MWH)
18	Redacted					
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

Redacted

The IE also conducted its own independent, parallel quantitative evaluation of the Project.[36/] The IE "recognized that the reasonableness of the Manzana transaction would need to be evaluated and reviewed in the context of specific market data or a set of comparable RPS contracts," and concluded that it would be appropriate "to use all relevant PG&E RPS contracts that had been executed and filed with the CPUC within the last 12 months."[37/] The IE ultimately determined that there were 20 RPS contracts in that group "that provided a reasonable context for a comparative evaluation of the Manzana transaction."[38/]

The IE's analysis of the Project included calculating a net market value for the Project

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36/ Exs. 1-C and 2, Appendix 3.1, at p. 2.
37/ *Id.*
38/ *Id.*

using its proprietary bid evaluation and revenue requirements models.[39/] The results of the IE's analysis are provided in Table A-1 of the Confidential Appendix A to the IE's report, as shown below.[40/]

Redacted				
Redacted			Redacted	

Redacted

Redacted The IE concluded that the Manzana transaction "compared quite favorably to the 20 relevant RPS contracts that PG&E has recently executed," and stated that it "does not believe that there is any material issue or deficiency that would warrant the CPUC's rejection of the Manzana transaction."[42/]

DRA and TURN suggest that the reasonableness of the Project's costs should be evaluated against only other wind projects.[43/] PG&E disagrees with this approach, as is discussed in Section III.C. below. Nevertheless, the Project remains competitive even when compared only to other wind projects. As shown in Tables 3 and 4 below, the Project is cost-competitive on a net market value basis as compared to long-term wind contracts that PG&E

39/ *Id.*
40/ Ex. 1-C, Appendix 3.2-C, at p. A-2.
41/ *Id.* at p. A-1.
42/ Exs. 1-C and 2, Appendix 3.1, at pp. 6-7.
43/ Exs. 101-C and 102, at pp. 4-9 to 4-16; Exs. 213, 214-C, and 215-C, at p. 3, lines 11-17.

filed for Commission approval in the 12 months prior to submittal of the Application, and as compared to long-term wind offers on PG&E's 2009 RPS RFO shortlist. Specifically, it is Redacted Redacted of the executed and filed wind contracts, and ranks Redacted of long-term wind offers on the 2009 shortlist.[44/]

TABLE 3
PACIFIC GAS AND ELECTRIC COMPANY
MANZANA WIND PROJECT
COMPARISON OF THE MANZANA WIND PROJECT TO PG&E'S LONG-TERM RPS WIND CONTRACTS EXECUTED AND FILED WITHIN THE 12 MONTHS PRIOR TO SUBMITTAL OF THE APPLICATION[45/]

	Project Name	Location	Technology	COD	GWh	Net Market Value ($/MWh)†
1	Redacted					
2						
3						

† Net market values calculated based on energy values gathered in anticipation of Advice Letter filing.

TABLE 4
PACIFIC GAS AND ELECTRIC COMPANY
MANZANA WIND PROJECT
COMPARISON OF THE MANZANA WIND PROJECT TO LONG-TERM WIND OFFERS ON PG&E'S 2009 RPS RFO SHORTLIST[46/]

	Project Name	Location	Technology	COD	GWhs	Net Market Value ($/MWH)
1	Redacted					
2						

44/ Exs. 9-C and 10, at p. 7, lines 17-18 and p. 9, lines 1-3.

45/ This table shows all of the contracts listed in Table 4-3 on page 4-6 of Exhibits 5-C and 6, PG&E's Supplemental Testimony, but eliminates several columns of information provided in Table 4-3. It also adds the Manzana Wind Project, which was not shown in Table 4-3.

46/ This table shows all of the offers listed in Table 4-4 on page 4-7 of Exhibits 5-C and 6, PG&E's Supplemental Testimony, but eliminates several columns of information provided in Table 4-4. It also adds the Manzana Wind Project, which was not shown in Table 4-4.

3	Redacted
4	
5	
6	
7	
8	
9	
10	

Redacted

B. Net Market Value Comparisons Are The Best Measure Of Cost-Competitiveness

PG&E assessed the cost-competitiveness of the Manzana Project by comparing its net market value to the net market values of other benchmark transactions. DRA's cost-competitiveness assessment looks almost exclusively at levelized cost of energy comparisons,[47/] and Ms. Shmidt testified that DRA's recommendation is that levelized cost of energy "is a much better indicator and much more comparable indicator" of the Project's cost.[48/] Net market value comparisons are, however, a far better measure of economic competitiveness than simple price comparisons. Net market value comparisons capture the significant differences in value related to when and where energy is delivered to customers, and allow for comparison across renewable technologies. Simple price or cost comparisons do not and are therefore an inferior metric.

Net market value is the difference between the value of a project, defined as the market value of energy and capacity, and the cost of a project.[49/] The market value of energy (expressed in dollars per megawatt-hour ($/MWh)) is the value of the electricity produced by the project, which takes into account when the energy is produced (the production profile) as well as where

47/ Exs. 101-C and 102, at pp. 4-9 to 4-16.

48/ Tr., at p. 425, lines 14-16 (Shmidt, DRA).

49/ Exs. 1-C and 2, at p. 3-2, lines 2-4, 7-8 and p. 4-1, lines 14-16, 18-19.

the energy is produced (location).[50/] Capacity value is associated with having the project available to generate on behalf of system reliability, also often referred to as Resource Adequacy.[51/] Pursuant to Commission methodology, a project is assigned a capacity value based upon on how much energy the project is expected to produce during certain specified hours each month.[52/] Capacity value is commonly expressed in dollars per kilowatt-year ($/kW-yr), but can be converted to $/MWh.[53/] The cost of the project is comprised of the price (including an estimate of network upgrade costs) expressed in $/MWh.[54/] A project's net market value is derived by subtracting the project price from the market value of energy and capacity.[55/]

As explained above, the net market valuation approach takes into account when the renewable energy is produced by a project (the production profile) and where it is produced (location). Net market value comparisons thus capture the differences in value to customers between projects and are therefore a far better measure of economic competitiveness than simple price comparisons.[56/] For example, "[a] wind project may have a higher price than another wind project, but the higher priced wind project could ultimately have a better net market value depending on the project location and production profile."[57/] Because the net market valuation approach considers value and not just price, it allows for comparisons across different renewable technologies.[58/] A solar project could, for example, "have a higher price than a wind project, but from a net market value perspective, the solar project could have a better market value due to its delivery of energy during high load periods."[59/] Net market value accounts for differences in

50/ *Id.* at p. 3-2, lines 4-7 and p. 4-1, lines 16-18.
51/ *Id.* at p. 3-2, lines 8-10 and p. 4-1, lines 19-21.
52/ Tr., at p. 254, lines 1-13 (Jeung, PG&E).
53/ Exs. 1-C and 2, at p. 3-2, lines 10-12 and p. 4-1, lines 21-23.
54/ *Id.* at p. 3-2, lines 12-17, p. 3-3, lines 1-3, and p. 4-1, lines 23-29.
55/ *Id.* at p. 3-3, lines 1-3 and p. 4-1, lines 26-29.
56/ *Id.* at 4-2, lines 1-3; Exs. 9-C and 10, at p. 7, lines 2-5.
57/ Exs. 1-C and 2, at p. 4-2, lines 6-9; Exs. 9-C and 10, at p. 7, lines 6-9.
58/ Tr., at p. 144, lines 5-6 (Lewis, PG&E).
59/ Exs. 1-C and 2, at p. 4-2, lines 4-6.

value that result from different renewable technologies,[60/] and allows for selection of the opportunities that present the greatest value to customers.

Levelized cost of energy comparisons, on which DRA relies, do not consider the value associated with when and where energy is produced. Levelized cost of energy is an input into the net market value calculation and reflects only the costs associated with a particular project. It does not, however, capture a project's benefits and value to customers. While the levelized cost of energy could reflect the delivery pattern for a particular project through a time-of-day adjustment,[61/] this adjustment only shows the impact on a project's costs, not on its value. A time-of-day adjustment would, for example, reflect a higher *cost* for energy that is delivered during peak times, but it would not reflect the higher *value* associated with receiving energy at a time when it is most needed. Looking solely at levelized cost of energy could, therefore, result in the selection of a project that, while perhaps lower-priced, is less valuable to customers. Further, as DRA recognizes, levelized cost of energy calculations are not adjusted for location,[62/] and do not take into account the fact that energy delivered to certain nodes may be of greater value than energy delivered to other nodes.

As discussed in Section III.A. above, Sedway Consulting, the IE for the Project, conducted its own independent quantitative evaluation of the Project.[63/] Importantly, the IE assessed the Project's cost-competitiveness on the basis of net market value, not levelized cost or price.[64/] PG&E has also consistently used the net market value methodology for evaluating offers (both power purchase agreement and purchase and sale agreement) that are submitted into

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60/ *Id.* at p. 4-2, lines 9-10.

61/ Tr., at p. 279, lines 24-28 (Jeung, PG&E) Redacted
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62/ Tr., at p. 427, lines 10-13 (Shmidt, DRA).

63/ Exs. 1-C and 2, Appendix 3.1, at p. 2.

64/ Ex. 1-C, Appendix 3.2-C, at pp. A-1 to A-3.

its annual RPS solicitations.[65/] The net market value methodology was included in PG&E's RPS Procurement Plans for 2006, 2007, 2008 and 2009, which were approved by the Commission in Decisions 06-05-039, 07-02-011, 08-02-008 and 09-06-018, respectively, and is again included in PG&E's 2010 Draft RPS Procurement Plan that is currently pending before the Commission.[66/]

For all of these reasons, PG&E's net market valuation approach is the superior method for assessing cost-competitiveness of the Project.

C. The Project Should Be Compared To Current And Recent Alternatives For Renewable Power, Not Only To Wind Projects

PG&E has demonstrated the Project's cost-competitiveness as compared to other current and recent alternatives for renewable power, as discussed in Section III.A. above. DRA has asserted that it is more appropriate to compare the Project only to other wind resources,[67/] and TURN appears to support this approach.[68/] However, comparing the Project to other renewable energy alternatives, regardless of technology, is consistent with the intent of this proceeding's Scoping Memorandum, the RPS program and statute, and the IE's evaluation of the Project.

First, the *Assigned Commissioner's Ruling Granting Motion to Quash Subpoena* ("Quash Ruling"), issued on May 19, 2010 in this proceeding, is clear that the reasonableness and competitiveness of the Project's costs should be assessed in relation to other similar *renewable* projects, not solely other *wind* projects.[69/] DRA suggests that the Scoping Memorandum issued on March 25, 2010 requires comparison only to other wind resources.[70/] The Quash Ruling,

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65/ PG&E's 2006 RPS Solicitation Protocol, at pp. 34-35; PG&E's 2007 RPS Solicitation Protocol, at pp. 36-37 and Attachment K (pp. 4-8); PG&E's 2008 RPS Solicitation Protocol, at pp. 39-40 and Attachment K (pp. 3-6); PG&E's 2009 RPS Solicitation Protocol, at pp. 42-43 and Attachment K.
66/ PG&E's 2010 Draft RPS Solicitation Protocol, at pp. 43-44 and Attachment K (pp. 3-5).
67/ Exs. 101-C and 102, at pp. 4-9 to 4-16.
68/ Exs. 213, 214-C, and 215-C, at p. 3, lines 11-17.
69/ Quash Ruling, at pp. 2-3.
70/ Exs. 101-C and 102, at p. 4-9, lines 6-11.

however, subsequently clarified the Scoping Memorandum's intent to include all renewable resources in the cost-competitive assessment, not just wind:

> The Scoping Memo specifically states that "The Commission must determine whether Manzana's proposed capital and operating costs are reasonable and competitive with other similar renewable projects, i.e. whether the projects costs, on both a net present value and levelized cost basis, are reasonable in comparison to other relevant projects such as potential utility-owned renewable energy projects; other wind projects that are already or are expected to come online in the Tehachapi region, California, or the Western Electricity Coordinating Council area; other wind projects developed and built by Iberdrola." (Scoping Memo, at 6, emphasis added.)
>
> In the Renewable Portfolio Standards program we have substantial information in the form of the many contracts the utilities have entered into with renewable project developers, to derive a benchmark against which to compare the Manzana project and make a reasonableness determination. This type of comparison is what was expressly envisioned in my Scoping Memo. The term "cost" as it is used in the Ruling and Scoping Memo refers to the costs born by ratepayers. Because, if approved, this project would displace other projects that might otherwise be selected to meet PG&E's renewable energy goals, it is only reasonable to the extent the costs to ratepayers of this project are comparable to the costs they would bear were PG&E to pursue alternatives to this project to realize the same or similar benefits.[71/]

The Quash Ruling later emphasized that "the relevant point of comparison in order to make a reasonableness determination is to the cost ratepayers face, or are likely to face, for similar *renewable* projects."[72/]

Second, the RPS statute does not differentiate between technologies. PG&E is required to meet its RPS mandate through procurement of "eligible renewable energy resources,"[73/] which include resources that use a host of technologies.[74/] All qualifying technologies receive the same

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71/ Quash Ruling, at pp. 2-3.
72/ *Id.* at 4 (emphasis added).
73/ Pub. Utils. Code § 399.15(a), (b).
74/ Pub. Resources Code § 25741(b)(1) (a facility that "uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less,

amount of RPS compliance credit. The Commission has also stated that the RPS program and process must be equitable between technologies, and that the utilities' RPS plans, protocols and RFOs must remain "renewable resource neutral" and may not express a preference for particular renewable resource types.[75/] The reasonableness of the proposed costs of the Manzana Project is thus properly determined by comparing these costs to other comparable renewable power alternatives, not only to wind projects.

Finally, in its independent assessment of the reasonableness of the Project, the IE selected a set of RPS contracts against which to compare the Project that represented a variety of renewable technologies. The IE "determined that there were 20 RPS contracts . . . that provided a reasonable context for a comparative evaluation of the Manzana transaction."[76/] This collection of contracts included technologies other than wind, including solar photovoltaic, solar thermal, and biomass.[77/] Comparison of the Project against all renewable technologies, and not just wind, is thus consistent with what the IE, in its independent analysis, determined to be the best approach for assessing cost-competitiveness.

D. Even If It Was Appropriate To Compare The Project Only To Other Wind Projects, Which It Is Not, DRA And TURN's Cost-Competitiveness Analyses Are Flawed

Even if the cost-competitiveness determination was restricted to a wind-only comparison, which PG&E believes is not the proper approach, DRA and TURN's cost-competitiveness analyses are still flawed.

DRA includes the following comparisons in determining that the Project is not cost-competitive: (1) other wind purchase agreements between Iberdrola Renewables and PG&E; (2)

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digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and any additions or enhancements to the facility using that technology" can qualify as an eligible renewable energy resource).

75/ D.06-05-039, at pp. 39, 42, Conclusion of Law 3.d.

76/ Exs. 1-C and 2, Appendix 3.1, at p. 2.

77/ *Id.* at pp. 4-6.

other wind projects PG&E has executed or is considering; (3) wind projects in the other investor-owned utilities' portfolios; and (4) independent industry reports of wind project costs and prices.[78/] These comparisons contain outdated wind power purchase agreements that are largely not reflective of current market prices, wind power purchase agreement offers that have not yet been executed, aggregate wind power purchase agreement cost data of other utilities (that PG&E is not allowed to review) and government agency and third party broad summaries of generic wind industry cost projections (several of which are outdated).[79/] DRA's analysis is flawed by using outdated and non-reliable pricing information and generic, aggregate sources of data that cannot be properly valued as they have no specific location or production profile that can be analyzed.[80/] If any comparison of the Project against other wind projects is conducted, it should use current, specific, project data that can be appropriately valued – like the renewable power purchase agreements actually executed by PG&E in the past 12 months and active bids currently under consideration – not outdated, unreliable, aggregate, generic information. As PG&E explains in Section III.A. above, when properly compared against this benchmark data, the Project is highly competitive, even when the comparison is limited to only recent wind alternatives.

In their testimony, both DRA and TURN cite to an April 9, 2010 presentation given by PG&E to its Procurement Review Group ("PRG") to support their claims that the Project may not be not cost-competitive.[81/] It is not appropriate to use the data in this presentation to assess the reasonableness of the Project's costs, as it contains information on RPS opportunities as of April 9, 2010 that was not available at the time the decision was made to execute the Manzana

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78/ Exs. 9-C and 10, at p. 6, lines 17-22.

79/ *Id.* at pp. 7-13.

80/ *Id.* at p. 5, lines 28-29 and p. 7, lines 19-24.

81/ Exs. 101-C and 102, at pp. 4-12 and 4-13 and Exhibit WW; Exs. 213, 214-C, and 215-C, at p. 8, lines 3-9 and Confidential Attachment 4.

transaction. For example, Redacted

Redacted.[82] This information could not have informed PG&E's decision on whether to pursue the Project as it did not exist when the decision was made, and should not, therefore, be used to assess reasonableness. Further, DRA and TURN selectively focus only the levelized cost of energy data for wind projects in the presentation, when, as is explained in Sections III.B. and III.C. above, using net market value comparisons across renewable technologies is the better approach to assessing the cost-competitiveness of the Project. On a net market value basis, the Manzana Project is clearly competitive with the entire selection of projects included in the April 9 PRG document, and remains competitive even when looking at only the wind projects in the sample.

DRA also cites to contract prices for 27 wind projects listed in PG&E's March 2010 RPS Compliance Report[83] to argue that the Manzana Project is not a good deal for ratepayers.[84] However, many of these projects are not comparable to the Manzana Project because, for example, they are projects under short-term power purchase agreements or that resulted from previous RPS solicitations. Moreover, DRA focuses only on the costs associated with these projects and not their value.[85] For these reasons, this set of benchmark information on which DRA relies is flawed. Nevertheless, the Project still Redacted on a net market value basis as compared to the projects from PG&E's March 2010 Project Development Status Report that DRA cites in its testimony.[86]

Finally, DRA asserts that the Project is Redacted than the Market

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82/ Tr., at p. 291, lines 21-27 (Jeung, PG&E).
83/ DRA's data actually appears to come from PG&E's March 2010 Project Development Status Report, not from PG&E's March 2010 RPS Compliance Report.
84/ Exs. 101-C and 102, at p. 4-12, lines 3-14.
85/ *Id.*
86/ Exs. 5-C and 6, at p. 4-6, Table 4-3; Ex. 107-C.

Price Referent ("MPR").[87] The MPR is, however, a calculated value that represents the forecast price of electricity from a newly constructed non-renewable energy source.[88] The MPR does not reflect the competitive price for renewable energy. Rather, the competitive price for renewable energy is reflected in the current market benchmark data used by PG&E to demonstrate the reasonableness of the Project's costs.

E. The Assumptions Underlying PG&E's Forecast Levelized Cost Of Energy For The Manzana Wind Project Are Reasonable

PG&E developed a levelized cost of energy estimate to represent the cost of the Project to customers over its useful life. The assumptions underlying this estimate are backed by years of wind data, strong analysis, Iberdrola Renewables' extensive operating experience, the most recent developments affecting the size and online date for the Project, and careful evaluation of the potential impacts to the California condor.

DRA and TURN nevertheless challenge a number of elements of PG&E's levelized cost of energy forecast for the Project, and DRA asserts that Project costs are likely to be much higher than forecasted by PG&E in its Application. DRA refers to six factors and TURN adds a seventh that may affect Project costs or revenues: (1) the actual capacity factor could be less than 31.1 percent; (2) the commercial operations date could be delayed and costs of delay could be incurred; (3) the installed capacity could be 189 MW rather than 246 MW; (4) the useful life of the Project could be less than 30 years; (5) environmental mitigation measures could reduce project capacity through partial or complete shutdown of the Project; (6) the Project may be subject to curtailment by the California Independent System Operator ("CAISO"); and (7) the Project could fail to be operational in time to meet the existing federal renewable tax credit

87/ Exs. 101-C and 102, at p. 4-16, lines 7-15.

88/ D.04-06-015 at 7, n. 10 ("[W]e will clarify also what the MPR is not: it does not represent the cost, capacity or output profile of a specific type of renewable generation technology…. [T]he MPR is to represent the presumptive cost of electricity from a non-renewable energy source."); *see also* D.05-12-042 at 6-7 (quoting D.04-06-015).

deadline of December 31, 2012.[89/] DRA suggests that, since PG&E's ratemaking proposals cause customers to bear many of these risks, it is reasonable to review the project based upon a range of higher project costs.[90/] This section of PG&E's Opening Brief addresses each of these points and demonstrates the reasonableness of PG&E's levelized cost of energy forecast for the Project.

1. A 31.1 Net Capacity Factor Is A Reasonable Estimate Of The Project's Expected Annual Generation

PG&E's levelized cost of energy calculation for the Project used an annual net capacity factor of 31.1 percent.[91/] In its written testimony, DRA questions the validity of this figure and argues that the Project's generation could be lower than assumed, resulting in a higher levelized cost of energy for customers.[92/] The 31.1 percent value is, however, supported by extensive site-specific wind data, Iberdrola Renewables' wind resource operating expertise, and an independent mechanical loads analysis prepared by General Electric.

The Project's net capacity factor was calculated by adjusting its gross energy output for various loss factors to arrive at a net energy output.[93/] The 31.1 percent value was derived from detailed analysis of extensive site-specific wind data.[94/] The Project's wind data set is noteworthy – it was comprised of nearly 8 years of data from 25 meteorological towers (with varying wind data periods for specific towers) and 5 sodar measurement devices, as compared to the 1 to 3 years of data from 3 to 5 towers that is more typical of similarly-sized projects.[95/]

The 31.1 percent net capacity factor for the Project is substantiated by a wind report prepared by Iberdrola Renewables and an independent mechanical loads analysis prepared by

89/ Exs. 101-C and 102, at pp. 2-1 to 2-4 and pp. 4-1 to 4-9; Exs. 213, 214-C and 215-C, at pp. 17-18.
90/ Exs. 101-C and 102, at p. 4-2, lines 5-8.
91/ Exs. 1-C and 2, at p. 7-15, lines 1-2; Exs. 5-C and 6, at p. 8-1, lines 24-25.
92/ Exs. 101-C and 102, at pp. 4-3 to 4-4.
93/ Exs. 5-C and 6, at pp. 8-2 to 8-3.
94/ *Id.* at p. 8-1, lines 26-30.
95/ *Id.* at p. 8-2, lines 3-10.

General Electric. Iberdrola Renewables' wind report forecasts a 31.1 percent net capacity factor at a P 70 value.[96/] This means that the Project's net capacity factor is expected to be 31.1 percent *or better* for every 7 of 10 years of the Project life.[97/] Iberdrola Renewables' report also estimates a Redacted percent net capacity factor at the P 50 level,[98/] which would result in a levelized cost of energy for the Project of $Redacted/MWh.[99/] PG&E's meteorological expert has reviewed Iberdrola Renewables' wind report and concurs with its findings.[100/]

Subsequent to PG&E's submission of its Application for the Project, General Electric performed a mechanical loads analysis using the wind data from the site.[101/] As Mr. Lewis testified, Redacted

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Redacted[103/] The mechanical loads analysis concludes that the General Electric 1.5 SLE wind turbine on a 64.7 meter tower is suitable for the Project, which supports the turbine availability loss factor used in PG&E's net capacity factor calculation.[104/]

2. It Is Reasonable To Assume A December 31, 2011 Commercial Operation Date For the Project

PG&E's capital cost estimates and initial revenue requirement are based on a commercial operation date for the Project of December 31, 2011,[105/] and the levelized cost of energy

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96/ Ex. 9-C, Appendix C, Table 10; Exs. 9-C and 10, at p. 15, lines 3-5.
97/ Exs. 9-C and 10, at p. 15, lines 5-7.
98/ Ex. 9-C, Appendix C, Table 10; Exs. 9-C and 10, at p. 15, lines 7-8.
99/ Exs. 9-C and 10, at p. 15, lines 8-10.
100/ *Id.* at 15, lines 17-18.
101/ Exs. 5-C and 6, at p. 8-3, lines 17-19.
102/ Tr., at p. 152, lines 17-20 (Lewis, PG&E).
103/ Tr., at p. 174, lines 26-28 and p. 175, line 1.
104/ Exs. 5-C and 6, at p. 8-3, lines 19-22.
105/ Exs. 1-C and 2, at p. 5-9, lines 14-15 and p. 7-7, lines 5-7.

calculation for the Project assumes no delay beyond that date.[106/] DRA claims in its written testimony that the Project is "virtually certain" to be delayed beyond December 31, 2011 due to anticipated completion dates for SCE's TRTP, and claims that potential endangered species issues could also cause delay, thereby increasing total ratepayer costs.[107/] As explained in detail below, it is reasonable to base the Project's cost estimates and ratemaking proposals on a December 31, 2011 commercial operations date due to the Project's advanced development, Iberdrola Renewables' history with wind resource development, the transmission schedule for the Project, and the highly unlikely chance that Endangered Species Act-related issues will delay construction of the Project following CPUC approval.

First, the Project is at a very advanced stage of development. Iberdrola Renewables has secured real property rights for the entire 246 MW Project.[108/] Local permitting for the Project is complete. Kern County completed and certified a Final Environmental Impact Report for 189 MW of the power plant portion of the Project,[109/] and the Kern County Board of Supervisors approved an Addendum to the Final Environmental Impact Report on March 2, 2010 that includes the land required to bring the Project to the full 246 MW size.[110/] Construction can begin immediately following Commission approval of PG&E's Application and issuance of a Certificate of Public Convenience and Necessity.

Second, Iberdrola Renewables will complete construction of the Project under the Project Completion Agreement.[111/] Iberdrola Renewables is a seasoned developer, constructor and operator of wind generation throughout the world and has a successful track record of developing

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106/ Tr., at p. 315, lines 5-7 (O'Flanagan, PG&E).
107/ Exs. 101-C and 102, at p. 4-4, lines 13-20.
108/ Exs. 1-C and 2, at p. 2-2, lines 8-12; Exs. 9-C and 10, at p. 20, lines 28-30.
109/ Application, at p. 3.
110/ Exs. 9-C and 10, at p. 20, lines 30-32 and p. 21, lines 1-2.
111/ Exs. 1-C and 2, at p. 2-5, lines 2-3 and Appendix 2.1-C, PCA Sections 2.1(a) and 2.6(f).

wind farms in the United States.[112] It owns, controls or operates 3,684 MW of wind resources in the United States, including 381 MW of wind generation in California.[113] It also owns, controls or operates 1,362 MW of General Electric wind turbines in the United States and has extensive experience with their construction, commissioning, and operation.[114] In addition, PG&E has three existing power purchase agreements with Iberdrola Renewables for wind resources – each of these projects commenced operation ahead of schedule and they are all delivering electricity in accordance with the terms of their respective contracts.[115]

Third, the transmission needed for the Project is well along in the process and has a high probability of being completed. The Project will interconnect to SCE's proposed 500/220 kV Whirlwind Substation, which is part of SCE's TRTP, through a new Gen-tie to be constructed by PG&E.[116] The existing Midway-Vincent #3 500 kV line will be looped into the Whirlwind Substation, which will allow the Project to deliver power to the grid.[117] The looping in of the Midway-Vincent #3 line to Whirlwind Substation is part of Segment 4 of SCE's TRTP.[118] The Commission approved these upgrades and granted a Certificate of Public Convenience and Necessity for these (and other) segments of the TRTP on December 24, 2009.[119]

PG&E's completion of construction of the Gen-tie is scheduled for Redacted [120] sufficiently ahead of the December 31, 2011 date. Construction of the Whirlwind Substation and looping of the existing Midway-Vincent #3 500 kV line into the Whirlwind Substation are currently scheduled to be completed by Redacted [121] DRA suggests that interconnection

112/ Exs. 1-C and 2, at p. 2-5, lines 3-7 and p. 3-7, lines 3-8.
113/ *Id.* at p. 2-5, lines 7-9 and p. 3-7, lines 8-10.
114/ *Id.* at p. 2-3, line 29 and p. 2-4, lines 1-2.
115/ *Id.* at p. 2-5, lines 9-14 and p. 3-7, lines 10-15.
116/ *Id.* at p. 2-13, lines 7-9, 12-14.
117/ *Id.* at p. 2-13, lines 9-10.
118/ Ex. 103-C, PG&E's response to Question 1 of TURN's seventh data request.
119/ D.09-12-044.
120/ Exs. 1-C and 2, at p. 5-12, Table 5-5, line 10.
121/ Exs. 9-C and 10, at p. 17, lines 12-31 and p. 18, lines 1-6.

of Whirlwind Substation is not expected until March 2012, but this statement is based on outdated information from February of this year.[122/] Since that time, the prognosis for a Redacted completion date for Whirlwind Substation has improved significantly.

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122/ Exs. 101-C and 102, at p. 3-17, lines 10-11 and p. 3-18, lines 3-6 and n. 71 (citing a February 22, 2010 SCE response to a data request).
123/ Exs. 9-C and 10, at p. 17, lines 13-17.
124/ *Id.* at p. 17, lines 17-19.
125/ Ex. 103-C, PG&E's response to Question 1 of TURN's seventh data request and Confidential Attachments 2 and 3 to response.
126/ *Id.*
127/ *Id.*
128/ Tr., at p. 113, lines 8-11, 15-25 (Lewis, PG&E).
129/ Exs. 9-C and 10, at p. 17, lines 25-29.

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The above-described Redacted

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Redacted which are entirely aligned with PG&E's assumed December 31, 2011 commercial operations date for its cost estimates and ratemaking proposals:

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Finally, there is no evidence that any Endangered Species Act-related issue will delay

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130/ *Id.* at p. 17, lines 29-31 and p. 18, line 1.

131/ *Id.* at p. 18, lines 1-3.

132/ Ex. 103-C, Confidential Attachment 5 to PG&E's response to Question 1 of TURN's seventh data request,
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133/ Ex. 103-C, PG&E's response to Question 1 of TURN's seventh data request; Exs. 9-C and 10, at p. 18, lines 3-6.

construction of the Manzana Wind Project following CPUC approval of PG&E's Application. With the sole exception of the Certificate of Public Convenience and Necessity requested in PG&E's Application, every governmental permit or approval required to construct the Project has already been granted and is now final and effective.[134] No pre-construction approvals are required from either the USFWS or the California Department of Fish and Game for the simple reason that construction of the Project will not result in "take" of any endangered species.[135] Kern County's comprehensive, multi-year Environmental Impact Report and associated protocol-level biological surveys, together with the project's biological assessment, provide abundant support for this conclusion.[136] DRA's speculation about potential future condor collisions with operating wind turbines is not relevant to the construction phase and, for the reasons set forth in Section III.E.5. below, is unfounded in any event. Thus, assuming the Commission timely grants PG&E a Certificate of Public Convenience and Necessity, there is no reason to believe the Manzana project will not be completed on schedule.

PG&E has presented substantial evidence that December 31, 2011 is a reasonable and justified estimate of the commercial operation date of the Project on which to base its capital cost, revenue requirement, and levelized cost of energy estimates. Moreover, even if the Project were delayed, the cost of a potential delay does not significantly affect the economics of the Project. In the event the 246 MW Project were delayed until mid-August 2012, the net market value would change from Redacted/MWh to Redacted/MWh, or a decrease of Redacted/MWh. Even with this change, the Project still Redacted 30 projects shortlisted in PG&E's 2009 RPS RFO, and Redacted 24 projects PG&E filed for approval in the 12 months

134/ Exs. 9-C and 10, at p. 20, line 29 to p. 21, line 2.
135/ *See* 42 U.S.C. Section 1538, Cal. Fish and Game Code Section 2080 et seq.
136/ Kern County, Draft EIR, PdV Wind Energy Project (September 2007), at Chapter 4.4 (Biological Resources).

prior to submission of the Application.[137/]

3. 246 MW Is A Reasonable And Prudent Estimate Of The Final Project Size

PG&E's Application seeks approval to construct and recover in rates the full 246 MW Project, and its levelized cost of energy calculation assumes a full 246 MW Project.[138] DRA questions this assumption, arguing that the Project's economics are sensitive to the capacity assumptions and PG&E's ratemaking proposal does not guarantee a 246 MW project.[139/] It is reasonable and justified to assume that the Project will be built out to the full 246 MW, however, based on the status of permitting, development, and turbine supply for the Project.

As discussed in Sections II. and III.E.2. above, the Project is at an advanced stage of permitting and development for a full 246 MW project. Since the Application was filed with the CPUC in December 2009, Iberdrola Renewables has secured the additional land leases required for a 246 MW project.[140/] In addition, on March 2, 2010, the Kern County Board of Supervisors approved an Addendum to the Final Environmental Impact Report that includes the land required for the additional 57 MW to bring the Project to the full 246 MW size.[141/] Also since the filing of the Application, General Electric has completed its Mechanical Loads Analysis for the Project indicating that a full 246 MW/164 turbine layout is achievable at the existing site.[142/]

Iberdrola Renewables has already committed to provide wind turbines for the first 189 MW of the Project, which it has secured under a pre-existing turbine supply agreement with General Electric.[143/] The only open issue with respect to the final project size is whether

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137/ Exs. 9-C and 10, at p. 19, lines 10-17.
138/ Exs. 1-C and 2, at p. 2-8, lines 24-25; Ex. 4-C, at pp. WP 7-17 to WP 7-19.
139/ Exs. 101-C and 102, at p. 4-5, lines 6-11.
140/ Exs. 9-C and 10, at p. 20, lines 28-30.
141/ *Id.* at p. 20, lines 30-32 and p. 21, lines 1-2.
142/ *Id.* at p. 21, lines 2-4.
143/ Exs. 1-C and 2, at p. 2-6, lines 27-28; Exs. 9-C and 10, at p. 24, lines 8-9.

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For these reasons, PG&E's view is that it is highly likely that the Project will be built out to the full 246 MW.[150] Therefore, 246 MW is a reasonable and prudent estimate of the final project size. Moreover, even in the unlikely event that the Project is only 189 MW, it would still be cost-competitive at the smaller size. The levelized cost of energy for the Project at 189 MW would be Redacted MWh and the net market value for the Project would be Redacted /MWh. Based upon the benchmark information discussed in Section III.A. above, even at the reduced size the Project's net market value would Redacted 30 projects shortlisted in PG&E's 2009 RPS RFO, and Redacted 24 long-term projects PG&E filed for approval in the

144/ Exs. 9-C and 10, at p. 21, lines 5-7.
145/ *Id.* at p. 21, lines 7-9.
146/ *Id.* at p. 24, lines 11-14.
147/ *Id.* at p. 24, lines 14-16.
148/ *Id.* at p. 21, lines 9-13.
149/ *Id.* at p. 21, lines 13-16.
150/ *Id.* at p. 21, lines 16-17.

12 months prior to submission of the Application.[151/]

4. It Is Reasonable To Assume That The Project Will Operate For 30 Years

PG&E's levelized cost of energy calculation for the Project assumes a 30-year project life.[152/] DRA argues in its written testimony that the Project's actual life could be shorter, due to a decision to repower turbines or an inability to Redacted, and that a shorter project life increases the levelized cost of energy.[153/] DRA further asserts that PG&E's ratemaking proposal does not guarantee a 30-year life and provides no ratepayer protections.[154/] It is reasonable to assume that the Project will operate for 30 years, however, because power plants of all types have operated for 30 years and beyond, PG&E does not anticipate repowering in its reasonable and prudent 30 year operations and maintenance cost estimate for the Project, and it is likely that PG&E will be able to Redacted

Redacted Further, contrary to DRA's assertion, there is ample protection for ratepayers in the event the Project's life is less than 30 years, as any change to the Project life would have to be reviewed and approved by the Commission in a General Rate Case.

First, power plants of all types have consistently demonstrated useful lives into the 30-year range (and beyond).[155/] For example, PG&E has hydro assets in its portfolio that are over 100 years old and some fossil assets originally constructed in the 1950s, 1960s and 1970s are still operating today at asset lives of 50 years.[156/] Wind turbines have also demonstrated the ability for long lives – wind projects in the Altamont Pass have operated for approximately 30

151/ *Id.* at p. 22, lines 8-15.
152/ Tr., at p. 332, line 28 and p. 345, line 3 (O'Flanagan, PG&E).
153/ Exs. 101-C and 102, at p. 4-5 to 4-7.
154/ *Id.* at p. 4-7, lines 1-3.
155/ Exs. 9-C and 10, at p. 24, lines 28-30.
156/ Tr., at p. 243, lines 24-28 and p. 244, line 1 (Jones, PG&E).

years,[157] and a wind project at the Pacheco Pass has operated for approximately 22 years or more.[158] With prudent and reasonable maintenance of the Project assets, PG&E similarly expects that it will be able to ensure a 30-year life for the Project.[159] A 30-year asset life for the Project is also squarely within the range of asset lives assumed for various generation technologies in PG&E's portfolio for depreciation purposes.[160]

Second, PG&E does not expect that the Project will need to be repowered. The Project will use proven General Electric 1.5 SLE turbines, a product with over 7,750 units in operation worldwide, which is considered the workhorse of the industry and incorporates General Electric's latest updates and performance enhancements.[161] As discussed in Section VI.B. below, PG&E developed a reasonable and prudent 30-year forecast of operations and maintenance costs for the Project that is reflected in the Project's levelized cost of energy calculation. PG&E's operations and maintenance cost forecast was developed through reliance on multiple wind industry sources and includes a very substantial number of parts replacements over the Project's life.[162] It does not, however, include any Redacted as Mr. Jones testified that Redacted Redacted.[163]

Third, PG&E believes that it is very unlikely that Redacted Redacted Redacted As an initial matter, it is important to note that the

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157/ Exs. 9-C and 10, at p. 24, lines 30-32; Tr., at p. 59, lines 4-5 (Lewis, PG&E).
158/ Tr., at p. 245, lines 12-16 (Jones, PG&E).
159/ *Id.* at p. 244, lines 4-7 (Jones, PG&E).
160/ Tr., at p. 333, lines 7-12 (O'Flanagan, PG&E) (describing the following assumed asset lives: 40 years for nuclear plant; 50 to 70 years for hydro facilities; 30 years for new fossil units; 25 years for photovoltaic program; and 10 years for fuel cell program).
161/ Exs. 1-C and 2, at p. 3-6, lines 29-33 and p. 3-7, lines 1-2.
162/ *See* Section VI.B. of this Opening Brief.
163/ Tr., at p. 236, lines 18-21, 25 (Jones, PG&E).

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Redacted [164] – this arguably reflects a belief by the project developer that the project would operate for 30 years or more. Because many of the Redacted

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Redacted [165] PG&E's levelized cost of energy calculation prudently reflects Redacted

Redacted

Redacted [166] The Project land is remote high desert scrub brush with minimal (if any) commercial farming, cattle grazing, or residential development potential.[167] Thus, harvesting of the wind for the Project will likely be the best use of this land for *at least* the next 30 years,[168] and Redacted

Redacted [169] Moreover, in the unlikely event that one or more

Redacted

Redacted [170]

Finally, DRA's claim that there is no protection for ratepayers if the Project operates less than 30 years is simply not true. PG&E's proposed rates for the Manzana facility are based upon a 30-year project life.[171] PG&E cannot change the project life without review and approval by the Commission in a General Rate Case.[172]

164/ Exs. 7-C and 8, at clean replacement p. 2-3, lines 7-9.
165/ *Id.* at p. 2-3, lines 10-14.
166/ Ex. 101-C, Exhibit UU; Ex. 4-C, at pp. WP 7-17 to WP 7-19 (line 5 of "Development of LCOE" Table).
167/ Exs. 9-C and 10, at p. 25, lines 9-12.
168/ *Id.* at p. 25, lines 14-15.
169/ Tr., at p. 127, lines 8-11 (Lewis, PG&E).
170/ Pub. Utils. Code § 612.
171/ Tr., at p. 345, line 3 (O'Flanagan, PG&E).
172/ Tr., at p. 333, lines 17-21 (O'Flanagan, PG&E).

5. There Is No Credible Evidence To Suggest That the Manzana Project Will Be Shutdown Or Curtailed Due To Purported Impacts To California Condor, And PG&E's Proposed Revenue Requirement Does Not Include Potential Fines Or Penalties For Impacts To Protected Species

DRA asserts in its written testimony that the Project could have substantial adverse impacts on the California condor due to the Project's proximity to known condor habitat, and expresses concern that condor impacts could reduce the Project's cost-effectiveness.[173/] DRA believes that ratepayers bear a substantial risk of partial or complete Project shutdown due to these purported potential impacts, and recommends that the Commission take steps to ensure that ratepayers are protected if the Project is partially or completely shut down as a result of condor issues.[174/] DRA further recommends that PG&E's shareholders bear the burden of any potential fines or penalties incurred due to impacts on protected species from Project operations.[175/]

Unlike PG&E, DRA did not offer any qualified expert testimony on endangered species issues. Instead, DRA bases its position that there is a "substantial risk" of shutdown on: (1) the relative proximity of the Project to known condor habitat (giving no apparent consideration to the critical fact that the Manzana site itself lacks both suitable habitat and condor food sources) and (2) a comment letter from the California Department of Fish and Game ("CDFG") to Kern County explaining that *if* a condor is killed by the Project, available remedies under applicable law *may* include Project shutdown (conveniently overlooking the fact that this letter predates by nearly two years the significant Project modifications proposed by Kern County and PG&E to substantially reduce the risk of "take" of a condor should one eventually enter the Project area).[176/] In speculating, first, that a condor might someday enter the Project area and be killed through interaction with Project turbines, and, second, that CDFG might respond by seeking and

173/ Exs. 101-C and 102, at p. 2-1, lines 9-8 and p. 2-3, lines 9-11.
174/ *Id.* at p. 2-1, lines 12-14 and p. 2-3, lines 18-21.
175/ *Id.* at p. 2-1, lines 22-24.
176/ *Id.* at p. 2-1, lines 8-9 and 12-14, and p. 2-2, line 16 – page 2-3, line 2.

obtaining from a court of law injunctive relief requiring the Project to be shut down, DRA fails to provide *any* analysis or evidence as to the likelihood that either of those things might actually occur.

PG&E witness Diane Ross-Leech, by contrast, presented competent, uncontroverted testimony that, in her expert opinion, the location and design of the Manzana Project, together with known condor behavior patterns, ensure that any risk of condor mortality is remote. She further established that, even in the highly unlikely event of an unanticipated "take," the potential for shutdown or curtailment of the Project is very low.[177/] DRA's unsupported speculation to the contrary should be rejected.

a. The Evidence In This Proceeding Demonstrates That The Manzana Project Will Result In Only A Remote Risk Of Condor Mortality

(1) The Manzana Project site lacks key features necessary to attract California condors to the site.

Despite extensive research and field observation, California condors have yet to be recorded using the Manzana Project site. As noted condor expert Peter H. Blum stated in Kern County's Final Environmental Impact Report ("EIR") Responses to Comments, "[t]here is a reason for this"; condors rarely move out into valley floor habitats such as this one.[178/] Unlike the higher-elevation mountain ranges adjacent to the Project site, there is little or no nesting, roosting, or foraging habitat at the gently-sloping Manzana site.[179/] There is also a general absence of the condor's preferred food items – and PG&E-proposed mitigation measures will ensure that this remains the case for the duration of Project operation.[180/] There is, in short, little

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177/ Tr., at p. 348, lines 11-12 and p. 350, lines 2-4 and 9 (Ross-Leech, PG&E); Exs. 9-C and 10, at p. 30, line 8.

178/ Kern County, *PdV Wind Energy Project, Final Environmental Impact Report* (February 2008) ("Kern County FEIR") at pp. 7-80 and 7-81 (Responses to Comments).

179/ *Id.* at p. 7-82; Exs. 9-C and 10, at p. 25, line 28 to p. 26, line 1.

180/ Kern County FEIR at p. 7-81; Exs. 9-C and 10, p. 29, lines 18-24.

reason for condors to come to the site.[181/] As summarized below, this conclusion is supported by the expert testimony of PG&E witness Diane Ross-Leech, evidence included in Final Environmental Impact Reports prepared by both Kern County and this Commission, and the opinions of Peter H. Blum included in the County's Final EIR, among other authorities.

Prior to deciding to pursue the Manzana Project, PG&E conducted extensive due diligence, including visiting the Project site, to evaluate whether it included suitable habitat for condors. PG&E concluded that the Project site does not currently present any existing features that would serve to attract the condor given the natural habits of the species. First, there is little or no foraging potential on the project site. Condors tend to forage near their nesting habitat, but there is also little or no nesting or roosting habitat on the project site.[182/] In fact, the closest nest is more than 20 miles away, as are the closest *potential* nest cliffs or trees.[183/] Second, California condors primarily feed on carcasses of medium- to large-sized mammals, particularly ungulates, but the Manzana site "has little in the way of potential food for California condors."[184/] While there is limited grazing at the site today – PG&E witness Ross-Leech reported that she saw "very few cattle" on a recent visit – County-imposed mitigation measures require grazing to be phased out; in the meantime, PG&E has proposed an aggressive carcass removal program to ensure that any such grazing activities do not serve to increase the attractiveness of the site to condors, as discussed further below.[185/] In sharp contrast to the Manzana site, the condor feeding stations and designated critical habitat at Tejon Ranch offer a much more attractive destination for condors foraging in the general vicinity of the Manzana Project.[186/] Finally, unlike the high-elevation areas to the north of the revised Project boundary, which could present suitable flying

181/ Tr., at p. 356, lines 10-21 (Ross-Leech, PG&E).
182/ Tr., at p. 380, line 10 (Ross-Leech, PG&E).
183/ Kern County FEIR, at p. 7-81.
184/ *Id.*
185/ Tr., at p. 379, line 2 and p. 354, lines 17-20 (Ross-Leech, PG&E); Exs. 9-C and 10, at p. 29, lines 18-24.
186/ Tr., at p. 379, lines 17-21 (Ross-Leech, PG&E).

conditions such as updrafts and lifts, the Manzana site's "low elevation topography with limited relief probably also helps explain the species absence."[187]

PG&E's conclusion that the Project lacks required features to attract California condor is consistent with the Kern County EIR for the PdV Wind Energy Project (the former name for the Manzana Project) and this Commission's EIR for SCE's TRTP.[188] The County's EIR concluded, based on substantial evidence, that construction of the Project would not lead to significant impacts on the California condor after mitigation.[189] The EIR explained that the habitat assessment revealed lack of suitable habitat for the California condor and that no condors were observed within view from the Project site despite 138 days of avian site surveys.
Kern County further concluded that the condor was not expected to be present as a resident or regular migrant because the nearest nest is more than 24 miles away from in-fill project area, the project site has no nesting habitat and remote potential for foraging use, and the project site lacks critical components for condor use.[190] As a Responsible Agency for the Manzana Project under the California Environmental Quality Act, the Commission is obliged to treat Kern County's EIR as valid.[191]

The CPUC's Final EIR for TRTP, certified on December 24, 2009, likewise supports PG&E's conclusions. PG&E proposes to utilize TRTP Segment 4 North for a portion of the generation tie line for the Manzana Project, so the Commission's conclusions as to that segment are directly relevant to the potential impacts of the transmission component of the Manzana Project. Segment 4 is also in close proximity to the proposed wind farm site. The Commission's Final EIR concluded that the presence of the condor along Segment 4 was unlikely because no

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187/ Exs. 9-C and 10, at p. 26, lines 5-10; Kern County FEIR, at p. 7-81.
188/ Exs. 9-C and 10, at p. 27, lines 7-9.
189/ *Id.* at p. 26, lines 21-24 and p. 28, lines 1-4, 19-21.
190/ *Id.* at p. 28, lines 4-13.
191/ *See* 14 Cal. Code Regs. Section 15096(f).

suitable breeding habitat exists and the segment lies well outside the current known range of the species. The EIR offered the same conclusions for Segment 10, which is the next closest segment to the Manzana Project area. The Commission also concluded that TRTP in general was not expected to adversely affect condor roost sites.[192/]

In sum, the absence of any of the key features necessary to support condor activities demonstrates that condors are highly unlikely to be attracted to the Manzana site.[193/] As Ms. Ross-Leech explained on cross-examination, "condors are attracted to certain features of a site and the landscape. They are attracted to areas where they historically nest and they historically roost and areas where there's food available. So they will go into those areas [] they are attracted to, *and this project is not one of them*."[194/] DRA has presented absolutely no evidence to refute these fundamental facts.

Even if a condor were to wander onto the Manzana site, the Project has been designed and sited in such a way as to make the likelihood of collision extremely remote.

PG&E's Application includes specific measures to minimize the risks to the California condor. First, and most significantly, PG&E has elected not to develop the northernmost section of the original project area that has been re-zoned for wind energy.[195/] That section was the closest to the suitable condor roosting and nesting habitat that lies to the north of the Project area—windy, mountainous areas conducive to condor use, much unlike the Manzana site—as well as to documented condor occurrences in the general vicinity. More importantly, the tentative turbine locations in this section were on a ridgeline at an elevation of approximately

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192/ Exs. 9-C and 10, at p. 27, lines 10-29.

193/ *Id.*, at p. 25, lines 25-30 and p. 26, lines 1-4; Tr., at p. 380, line 10 (Ross-Leech, PG&E).

194/ Tr., at p. 359, line 25 to p. 360, line 2 (Ross-Leech, PG&E) (emphasis added).

195/ However, because Kern County has already approved installation of wind turbines at this location, a County-jurisdictional, non-utility developer would be free to install the four turbines PG&E elected to remove from its version of the Project should the Commission decline to timely issue the requested Certificate of Public Convenience and Necessity.

5,400 feet, where the potential risk of interaction with condors would generally be greater than at lower elevations. By eliminating these turbines from the proposed Project, PG&E has added an additional buffer of 0.5 miles between the Tehachapi Ridge and the project boundary, and significantly reduced the elevation of the Project's highest-elevation turbines. Moreover, there is now a substantial "vertical buffer" between the revised Project's highest-elevation turbines and any condors that might fly into the Project area after coming over the significantly higher adjacent ridgeline that PG&E has excluded from the proposed Project area. As PG&E's expert witness Ms. Ross-Leech explained, "[t]he turbines are at a much lower elevation now, and the condors would be flying at a much higher elevation than this project."[196/] This change means that any potential impacts to California condor will be less significant than assumed for purposes of Kern County's EIR, and further support PG&E's conclusion that the likelihood of a fatal collision is remote.[197/]

Second, PG&E included as part of the project description in its Application and Proponent's Environmental Assessment two applicant-proposed measures specifically intended to address condor-related concerns, as follows:

- Onsite management to survey and remove large animal carcasses during other routine management tasks, including weekly searches for large animal carcasses within the project boundary. In addition, daily scans (using binoculars and/or telescopes) lasting 15 minutes from a location that offers the best overall view of the entire project will be conducted to locate animal activity suggesting the presence of a carcass.

- Voluntary annual contributions for the purchase of GPS transmitters for California condors to assist in local recovery efforts.

These measures will further ensure that the Project site remains unattractive to condors and assist

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196/ Tr., at p. 365, lines 21-24 (Ross-Leech, PG&E).
197/ Exs. 9-C and 10, at p. 28, lines 31-32 and p. 29, lines 1-12.

in the broader condor recovery effort, respectively.[198]

Finally, PG&E's Proposed Project in its Application incorporates all applicable Kern County requirements and specifically envisions that such requirements will be included as conditions of the Certificate of Public Convenience and Necessity, if granted. That means that the condor-related requirements set forth in the Addendum that was approved by the Kern County Planning Commission on January 14, 2010 and by the Kern County Board of Supervisors on March 2, 2010 will likewise be incorporated into the Project as additional applicant-proposed measures.[199] These requirements include:

- Having a qualified biologist with knowledge of condor identification on site to monitor all construction activities within the project area;

- Training workers on the issue of micro trash, its effects on condors, and how to ensure that there is no micro trash;

- Having worker education information about the California condor;

- Reporting all sightings of condors that are found during construction of the project to the California Department of Fish and Game, Kern County and the U.S. Fish and Wildlife Service;

- Installing bird flight diverters on temporary Met towers and guy-wires;

- Having a full-time monitor on site during periods of grazing to remove all carcasses;

- Phasing out grazing over ten years; and

- Funding conservation measures such as radio telemetry, condor feeding programs and other measures deemed appropriate for the project.[200]

Finally, as the Commission is aware, there is presently a large number of existing wind turbines already in the area. These existing wind projects appear to be at higher elevations than

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198/ *Id.*, at p. 29, lines 14-28; *see also* Tr., at p. 371, lines 6-19 (Ross-Leech, PG&E) (PG&E would adapt onsite management to ensure that daily scans identify and remove any carcasses immediately through, e.g., multiple scans on multiple sites).

199/ Exs. 9-C and 10, at p. 29, lines 29-34 and p. 30, lines 1-2.

200/ Tr., at p. 354, lines 1-22 (Ross-Leech, PG&E).

the Manzana Project site, and would be more likely to present a threat given the natural habits of the condor. Even so, PG&E has not found any evidence of condor mortality due to interaction with any of these existing projects.[201] This, too, supports PG&E's conclusion that the likelihood that the Manzana Project would result in condor mortality is very low.

(2) No party offered competent evidence or elicited testimony on cross-examination calling into question PG&E's expert's conclusions.

DRA was the only party to prepare direct testimony on environmental issues but failed to provide any independent environmental analysis or evidence to challenge PG&E's conclusions summarized above. Instead, DRA's witness merely asserted – without support, and with no apparent training or experience in condor biology or environmental regulation – that the Project's relative proximity to known condor habitat and condor occurrences means that the Project "*could* have substantial adverse impacts . . . ."[202] On cross-examination of Ms. Ross-Leech, DRA again attempted to suggest that the fact that a condor had been observed within a mile of the Project's northernmost boundary (at unknown elevation) means that condors will someday fly over the project site.

Yet, as Ms. Ross-Leech has testified, proximity alone does not result in potential impact.[203] Indeed, while it is undisputed that the high-elevation Tehachapi Mountain range adjacent to and to the north of the Project site has long been used by condors for foraging, roosting, and transit between the Coast Ranges at one end of its historic range and the Sierra Nevada at the other end, it is also true that they have yet to be observed on this site.[204] Factors such as topography, condor behavior, the presence or absence of features to attract the condor, and, of course, project design and location are far more important to a competent assessment of

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201/ Exs. 9-C and 10, at p. 26, lines 11-16.
202/ Exs. 101-C and 102, at p. 2-1, lines 8-10 (emphasis added).
203/ Tr., at p. 378, lines 20-22 (Ross-Leech, PG&E).
204/ Kern County FEIR, at p. 7-80 – 7-81 (Responses to Comments).

potential impacts than proximity.[205/] Ms. Ross-Leech's testimony makes clear that each of these factors supports the conclusion that the Manzana Project will result in only a remote risk of condor mortality. As she explained once again under cross-examination, "the Tehachapi Mountains are . . . 2,000 feet above [the] elevation of the highest part of the northern part of our project site, and the project site has a gently sloping terrain down to the southeast of the project site. And so the condor needs a lot of lift and wind in order to fly. They are very large birds. And there's no reason for them to expend all that energy to come down to this site when there's no food; there's not roosting [habitat], there's no nesting [habitat]."[206/]

DRA likewise failed to present or elicit evidence suggesting that any condor that might venture into the Project area would be harmed by the Project facilities, given their design and location, or that it would do anything other than travel safely above the turbines to offsite areas that *do* contain suitable habitat. As Ms. Ross-Leech testified, even if a condor were to utilize the airspace of the site despite the lack of attractants or favorable wind conditions, that use would not pose a threat to the condor based on PG&E's re-design of the Project to eliminate the four highest-elevation turbines. "Because the site where the project is proposed is at a much lower elevation . . . [than] where the condor would be flying, soaring high above" as it comes up over the adjacent mountains some 2,000 feet or more above the Project site, "they would be well above" the turbines as they entered and passed over the Project area.[207/] This conclusion was echoed by noted condor expert Peter Blum in a response to comment in the Kern County Final EIR, where he explained that "California condors may use the orographic relief of the area surrounding the project site to gain elevation and pass through the area at high elevations to feeding grounds beyond. Yet, because of my experience with California condor ecology,

[205/] Tr., at p. 362, line 17 to p. 363, line 1 (Ross-Leech, PG&E).
[206/] Tr., at p. 362, line 19 to p. 363, line 1 (Ross-Leech, PG&E).
[207/] Tr., at p. 377, lines 19-26 (Ross-Leech, PG&E).

biology and behavior, I view potential collisions between California condor and wind turbines, and the infrastructure of power lines at the proposed site location as extremely remote, even as the species continues to recover in the wild."[208/]

Thus, there is no evidence in the record to establish that the Manzana Project will result in anything more than a remote risk of condor fatality; much less evidence that the Project will or even is likely to be shut down or curtailed.

b. There Is No Significant Likelihood That Even A Portion Of The Project Would Be Shut Down Due To Condor-Related Issues

Based on the Project site's characteristics, the design of the Project, and the above-described measures designed to minimize any potential risks to the condor, the potential for partial or complete shutdown or curtailment of the Project due to condor issues is low.[209/] As noted above, the site lacks critical features necessary to support condor use, making it unlikely that condors will move into the area even as their range expands. Even if a condor does enter the project area, it is highly unlikely to collide with project facilities given PG&E's proposed turbine locations. Condors are large soaring birds reliant on the existence of suitable flying conditions such as updrafts and the creation of lift. Such conditions are generally only present in upper elevations relative to the surrounding areas. As a result of PG&E's modification of the project, even the highest-elevation turbines now remaining are at low elevations relative to the surrounding area.[210/] The additional measures described in detail above further reduce the risk of partial or complete Project shutdown.

Unable to present any evidence that condor use of the site and resultant collisions are likely, DRA instead offers speculation concerning CDFG's potential actions in response to any

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[208/] Kern County FEIR at p. 7-82 (Responses to Comments).
[209/] Tr., at p. 376, lines 8-19 (Ross-Leech, PG&E); Exs. 9-C and 10, at p. 30, line 8.
[210/] *Id.*, at p. 30, lines 8-15.

hypothetical future condor collision. In support of its contention that the risk of shutdown is "substantial," DRA cites only a single, unauthenticated and unsigned letter, apparently from CDFG, that states, rather obviously, that *if* a condor is killed by the Project, the operator *may* be required to accept operational modifications that could include Project shutdown.[211/] That is an accurate characterization of the legal remedies potentially available to plaintiffs in actions to enforce the federal or state Endangered Species Acts, but it sheds little if any light as to whether such remedies will someday be applied to the Manzana project. The CDFG letter does not provide any evidence that condors are actually present on the Project site, or that they will eventually utilize the site. Instead, it says that, *"[s]hould it become apparent* that condors are utilizing the Project site, the Project proponent will need to coordinate immediately with the Department and the USFWS to determine the next steps necessary to avoid 'take' of this species."[212/] As Ms. Ross-Leech has testified, that is exactly what PG&E would do in that unlikely scenario.

It is also important to note that the CDFG letter predates by nearly two years PG&E's modification of the project to eliminate the four highest-elevation turbines, as well as the adoption by the County of numerous mitigation measures in response to this and other agency comment letters. Significantly, CDFG did not comment further following the adoption of these measures, nor has it appeared in this proceeding to express any concern about the redesigned Manzana Project's potential impact on condor.

In addition to resting its entire case that there is a "substantial risk" of shutdown on an out-of-date letter commenting on a prior version of project, DRA fails to acknowledge the historical reality that judicial orders shutting down entire wind facilities as a result of avian

[211/] Exs. 101-C and 102, at p. 2-2, line 16 – p. 2-3, line 2.
[212/] *Id.* at Ex. E, pp. 3-4 (emphasis added).

collisions are virtually unprecedented. Ms. Ross-Leech, who has extensive experience with avian protection issues, testified that she is aware of only two examples of even seasonal restrictions being placed on a limited number of turbines for a wind project (and neither project involved condors).[213] She also explained how the relevant agencies would likely respond to a hypothetical take of a condor: "It's been my experience working with the Fish and Wildlife Service and the California Department of Fish and Game, [that] they typically would do some sort of evaluation on the site specific circumstances of what happened and why it happened, and they may impose some studies or some other measures."[214] Moreover, even if the agencies and PG&E were to conclude that removal or relocation of the (hypothetical) offending turbine(s) was necessary, there is absolutely no basis, given the site layout, to assume that shut down of the entire Project, or even a significant portion of the Project, would be required. The vast majority of the proposed turbine locations are on the valley floor, some as far as six miles and thousands of feet lower than the mountainous areas utilized by the condor.[215] "So even if some sort of shutdown were required, it typically would be some smaller subset of turbines, not the entire project. Perhaps one turbine. It all depends on the site specific circumstances."[216]

The site-specific circumstances here – which DRA's testimony largely ignores – demonstrate that the likelihood of even partial shutdown of the Project is very low. DRA's speculation to the contrary is not evidence. The only competent evidence before the Commission on this issue demonstrates that the likelihood of "take" of a condor due to operation of the Manzana Project is remote, and that, even if such a take were to occur, the vast majority of the Project's turbines would remain in operation. DRA's argument that ratepayers will be left

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213/ Tr., at p. 350, lines 25-27, and p. 376, line 7 (Ross-Leech, PG&E).

214/ Tr., at p. 348, line 27 to p. 349, line 5 (Ross-Leech, PG&E).

215/ Reply of Pacific Gas and Electric Company (U 39 E) to Motion of the Center for Biological Diversity for Inclusion of Environmental Considerations Within Scope of Proceedings (February 17, 2010), at Attachment 1; Exs. 9-C and 10, at p. 26, lines 6-7.

216/ Tr., at p. 350, lines 17-20 (Ross-Leech, PG&E); *see also* Exs. 9-C and 10, at p. 30, lines 18-23.

with a "stranded asset" lacks any basis in fact and should be rejected.

c. Existing Remedies Under Public Utilities Code Section 455.5 Are Adequate To Address The Highly Unlikely Event Of A Future Shutdown, And PG&E Does Not Propose To Make Ratepayers Responsible For Fines Or Penalties

Putting aside the lack of any factual support for DRA's assertion that potential impacts to condor result in a "substantial" risk to ratepayers, there is no need for the Commission to take any action in response to DRA's concerns because Public Utilities Code Section 455.5 already provides an adequate mechanism for addressing the ratepayer impacts of any hypothetical future shut down of the Manzana Project. Section 455.5 sets forth procedures that govern prolonged outages of generation facilities. Since DRA has not proposed any specific ratepayer protection measure to address its general concern, it is not necessary for the Commission to take any further action on this issue at this time. In the highly unlikely scenario DRA has posited, the Commission can address the impact of a prolonged outage under Section 455.5.[217/]

With respect to DRA's recommendation that PG&E's shareholders bear the burden of any potential fines or penalties incurred due to impacts on protected species from Project operations, PG&E's proposed revenue requirement does not include the costs of any potential fines or penalties.[218/] The absence of fines or penalties from the proposed revenue requirement should adequately address DRA's concern.

6. There Is a Low Risk Of CAISO Curtailment Based On Negative Prices, And Curtailment Of The Project In Response To Negative Prices Would Benefit Customers By Reducing CAISO-Imposed Charges

TURN suggests that the Project's generation may be subject to curtailment during over-generation periods when the CAISO is charging "negative prices," and that PG&E's estimated levelized cost of energy for the Project may increase if PG&E curtails the facility during such

217/ *Id.* at p. 31, lines 17-24.
218/ *Id.* at p. 30, lines 28-29.

over-generation periods.[219] PG&E believes that the risk of curtailment due to negative prices is small. If negative prices do occur, TURN is viewing the potential impact of curtailment on customers too narrowly – while the levelized cost of energy for the Project could increase due to curtailment, curtailment may in fact result in the lowest overall costs to customers because it will reduce CAISO-imposed negative charges. TURN also understates the likely benefit to customers from the Project being a utility-owned facility as opposed to an Independent Power Producer project under a power purchase agreement. Ownership will allow PG&E to make curtailment decisions that are in the best economic interests of its customers in order to minimize costs, an option that may not be available to PG&E under a power purchase agreement.

As an initial matter, PG&E believes that the risk of zero or negative prices is small, based upon recent CAISO data.[220] The SP-15 market had only 17 hours of zero or negative prices in the period of April 1, 2009 through April 27, 2010, representing 0.18 percent of the hours.[221] Furthermore, 16 of the 17 hours occurred during the week of May 25, 2009 through June 2, 2009.[222]

TURN is correct that PG&E may elect to curtail the Project's generation during a period of "negative prices," when the CAISO would effectively impose charges on PG&E if the Project generated.[223] PG&E uses least-cost dispatch and, if the "negative price" charges imposed by the CAISO are expected to be greater than the value of the energy to be provided by the Manzana Wind Project for a given period of time, PG&E's customers would benefit by curtailing the facility to reduce CAISO-imposed negative charges.[224]

TURN downplays, however, the fact that in this situation, PG&E's customers would

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219/ Exs. 213, 214-C and 215-C, at p. 17, lines 24-28 and p. 18, lines 1-10.
220/ Exs. 9-C and 10, at p. 36, lines 13-17.
221/ *Id.*
222/ *Id.*
223/ *Id.* at p. 36, lines 21-23.
224/ *Id.* at p. 36, lines 24-28.

likely benefit from the Project being a utility-owned facility, as compared to an Independent Power Producer wind project under a power purchase agreement. In a footnote, TURN notes that Independent Power Producer wind projects "may also impose additional costs on PG&E customers during negative pricing conditions...."[225/] This has become a significant issue in the Commission's ongoing RPS proceeding (i.e., R.08-08-009). In that proceeding, the Large-Scale Solar Association and the California Wind Energy Association ("LSA-CalWEA") have argued that the Commission should adopt curtailment provisions that effectively prohibit the utilities from curtailing as a result of CAISO negative prices or require the utilities to pay the full contract price if an economic curtailment occurs.[226/]

If economic curtailment is not permitted under a power purchase agreement, PG&E would likely be required to pay for the delivered energy *and* the negative CAISO charges.[227/] Depending on the amount of the CAISO charges, this could significantly increase the effective power purchase agreement price for energy during the period of negative prices.[228/] If economic curtailment is permitted under a power purchase agreement, under the LSA-CalWEA proposal PG&E would still be required to pay the developer for energy even though no energy is delivered from the project as a result of a curtailment.[229/] This would mitigate the CAISO negative charges, but PG&E's customers would effectively be paying for energy that is never delivered or used.[230/]

Since the Manzana Wind Project would be utility-owned, PG&E can make curtailment

225/ Exs. 213, 214-C and 215-C, at p. 18, n. 23.

226/ *See* e.g., Response of the California Wind Energy Association and the Large-Scale Solar Association to Pacific Gas and Electric Company's Motion for Updates to its 2010 Renewable Energy Procurement Plan, filed March 4, 2010 in R.08-08-009.

227/ Exs. 9-C and 10, at p. 37, lines 13-15.

228/ *Id.* at p. 37, lines 15-17.

229/ *Id.* at p. 37, lines 18-21.

230/ *Id.* at p. 37, lines 21-23.

decisions that are in the best economic interests of its customers in order to minimize costs.[231/] Depending on the terms of a specific RPS power purchase agreement and the outcome of the RPS proceeding on the economic curtailment issue, PG&E may not be able to minimize its customers' costs under a power purchase agreement and may, in fact, be required to incur additional CAISO charges or pay for energy that is never delivered.[232/]

7. It Is Highly Unlikely That The Project Will Be Ineligible For The Federal Renewable Tax Credits

DRA discusses the potential for the Project to miss the December 31, 2012 deadline for the federal Investment Tax Credit ("ITC") and Production Tax Credit ("PTC") as a risk that, if it were to materialize, would increase the Project's levelized cost of energy.[233/] DRA asserts that delays beyond December 31, 2012 are possible given concerns about threats to endangered species.[234/] PG&E believes that there is very little risk that the Manzana Wind Project will not be completed prior to December 31, 2012. As explained in Section III.E.2. above, PG&E's assumption of a December 31, 2011 commercial operation date for its capital cost estimates, initial revenue requirement and levelized cost of energy calculation is highly reasonable and justified. The key issue is the completion date for the Whirlwind Substation and PG&E has explained in detail above the very positive developments concerning its timeframe for completion. Further, as discussed in Sections III.E.2. and III.E.5 above, it is highly unlikely that there will be any Endangered Species Act-related issues that will delay construction of the Manzana Wind Project following CPUC approval of PG&E's Application. In any event, it appears likely that the ITC and PTC will be extended based upon recent history and the strong

231/ *Id.* at p. 37, lines 24-26.
232/ *Id.* at p. 37, lines 26-18 and p. 38, lines 1-2.
233/ Exs. 101-C and 102, at pp. 4-7 to 4-8.
234/ *Id.* at 4-7, lines 17-22.

political support for renewable resource development.[235/] For these reasons, PG&E believes that there is a very low likelihood that the cost of the Project to customers will increase due to the Project's ineligibility for the federal renewable tax credits.

IV. THERE ARE ADDITIONAL CUSTOMER BENEFITS OF UTILITY OWNERSHIP OF THE MANZANA WIND PROJECT

In the recently-issued decision adopting the PG&E Photovoltaic ("PV") program, the Commission stated:

> Another factor that weighs in favor of adopting the PV Program is our interest in renewable UOG. We have previously addressed the benefits of renewable resources and have emphasized our support for renewable UOG. In D.08-02-008, the Commission stated, "First there may be a unique and important role for utility-owned RPS generation. UOG from renewable energy resources, for example, can put downward pressure on what are otherwise increasing renewable energy prices." Furthermore, given the current economic environment, it is clear that the utilities, like PG&E, can bring additional financial resources to bear on a market that has faced an increasingly challenging financial climate. Despite our encouragement for California utilities to pursue renewable generation, very few UOG projects have come forward.[236/]

The Manzana Wind Project advances the policy goals established by the Commission for utility-owned generation. PG&E ownership of the Project will provide stability and certainty around project financing, allowing the Project to proceed. PG&E has sufficient access to the capital markets as well as the ability to take advantage of federal tax incentives itself.[237/]

Ownership of the Manzana Wind Project on a cost of service basis allows costs savings to be passed through to customers rather than be retained as profit under a power purchase agreement. In addition, the Project will be subject to continuing Commission oversight of project operations and customers will benefit from a renewable generation resource dedicated to

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235/ Exs. 9-C and 10, at p. 34, lines 18-22.
236/ D.10-04-052, at p. 18.
237/ Exs. 1-C and 2, at p. 1-7, lines 3-11.

them over the life of the Project. In approving SCE's Solar Photovoltaic Program ("SPVP"), the Commission recognized the "particular benefit of Utility-Owned Generation" in that it is "dedicated to the ratepayers throughout the useful life of the facility."[238/] The Commission went on in that decision to state that "[g]iven the importance and urgency California has placed on developing renewable resources, allowing both utility and [independent power producers] to participate in the development of [Edison's SPVP] is a balanced approach at this time."[239/]

Utility ownership of the Project is also consistent with PG&E's renewable procurement strategy to diversify the mix of projects in its renewables resource portfolio. PG&E seeks to diversify technologies, the size of projects, financial exposure to counterparties and project locations (both in and out of California)—it makes sense to mix also utility ownership and power purchase agreements in the portfolio. For several years the Commission has actively encouraged utility ownership of renewable resources.[240/] More specifically, the Commission emphasized the importance of an aggressive renewables strategy, part of which would involve utility ownership of new renewable resources, in its most recent decisions approving PG&E's 2006, 2007, 2008 and 2009 RPS Procurement Plans.[241/]

V. PG&E'S ESTIMATE OF INITIAL CAPITAL COSTS IS REASONABLE

The estimated initial capital cost of the Manzana Wind Project is $911 million.[242/] The estimated total capital cost of the Project consists of the following six components: (1) payments

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238/ D.09-06-049, at p. 16.

239/ *Id.* at p. 17-18.

240/ *See, e.g.*, D.07-02-011, at p. 25 (explaining that utilities should "actively assess the feasibility of utility ownership [of renewable resources], and pursue such ownership when and where it makes sense"); D.08-02-008, at pp. 32-34 (explaining that there is a "unique and important role for utility-owned RPS generation").

241/ D.06-05-039, at p. 34; D.07-02-011, at p. 24; D.08-02-008, at p. 32; D.09-06-018, at pp. 48-52. PG&E's ownership interest in the Project is also consistent with Commission policy regarding utility-owned generation and competitive procurement. In D.07-12-052, the Commission explained that certain general utility-owned generation requirements in that decision do not apply to renewable and other loading order or non-conventional resources. D.07-12-052, at p. 197, n. 233.

242/ Exs. 1-C and 2, at p. 5-1, line 31.

PG&E will make to Iberdrola Renewables and PPM Technical Services under the PSA/PCA to acquire and construct the Project; (2) costs PG&E will incur to construct the Gen-tie to interconnect the Project to SCE's transmission system at Whirlwind Substation; (3) costs PG&E will incur to manage and oversee construction and to commission the Project; (4) project contingency costs to account for forecast uncertainties and changes in project scope; (5) administrative and general costs; and (6) allowance for funds used during construction ("AFUDC").

The Joint Case Management Statement identified the following contested issues related to the capital cost estimate:

> 2. Are PG&E's initial capital cost estimates reasonable?
>
> a. Whether it is reasonable for PG&E to recover a confidential component of the acquisition cost in rate base rather than as an expense.
>
> b. Whether PG&E's proposed contingency applicable to the initial capital cost is reasonable.

The reasonableness of PG&E's forecast of each of the six costs components is discussed in Section V.A. below and the two contested issues from the Joint Case Management Statement are addressed in Section V.B. below.

A. PG&E's Initial Capital Cost Estimate Is Reasonable And Reliable Since It Is Primarily Derived From The Redacted Under The PSA/PCA

The components of the estimated initial capital cost of the Project are summarized in Table 5-1.[243/]

243/ Exs. 1-C and 1-A-C, p. 5-2.

TABLE 5-1
PACIFIC GAS AND ELECTRIC COMPANY
MANZANA WIND PROJECT CAPITAL COST ESTIMATE
(NOMINAL THOUSAND DOLLARS)

Line No.	Description	Estimated Cost
1	PSA and PCA Costs	Redacted
2	Transmission Interconnection	
3	PG&E Costs	
4	Contingency	
5	Subtotal	
6	Administrative & General	
7	Allowance for Funds Used During Construction	
8	Total Manzana Capital Expenditures	$911,000

1. PSA and PCA Costs

PG&E's payments to Iberdrola Renewables and PPM Technical Services under the PSA and the PCA are Redacted. The PSA/PCA progress payments for the 246 MW Project are summarized in Table 2-1.[244/]

TABLE 2-1
PACIFIC GAS AND ELECTRIC COMPANY
MANZANA WIND PROJECT
PSA AND PCA PROGRESS PAYMENTS

Redacted

244/ Exs. 1-C and 2, at p. 2-10.

PG&E is highly confident that its forecast of PSA/PCA costs is accurate and unlikely to change. As a Redacted Iberdrola Renewables will assume the majority of the cost overrun and construction delay risks, thus minimizing the potential for unanticipated price increases.[245/] The pricing for the entire Project is based on a Redacted Redacted; so the installed capacity of the wind turbines delivered to PG&E by Iberdrola Renewables is Redacted [246/] Under the PSA/PCA, Iberdrola Renewables is responsible for permitting and development, acquisition of land rights, acquisition of turbines, and completion of all associated infrastructure, such as 35 miles of roads, a parts warehouse, and an operations building.[247/] Iberdrola Renewables is also responsible for Redacted [248/] If Iberdrola Renewables is substantially delayed in bringing the Project on-line Redacted Redacted [249/]

The PCA contains an agreed upon scope of work that defines the Project features and design. This will minimize the potential for disputes about what is a change to the scope of the Project and the associated cost responsibility.[250/] In addition, the PCA provides for the use of proven, reliable and efficient General Electric wind turbines, thus significantly reducing the technology risk associated with renewable resource development.[251/] The PCA also employs a highly experienced developer and constructor of wind generation facilities with a proven track record of success. The PCA incorporates Iberdrola Renewables' standard plant design and development plan that has successfully been used to develop several other projects in the

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245/ Exs. 1-C and 2, at p. 2-9, l. 7-10.
246/ Tr., at p. 193 (Lewis, PG&E).
247/ The key exception is that PG&E is responsible for the Gen-tie.
248/ Exs. 1-C and 2, at p. 2-10, lines 7-8.
249/ Exs. 1-C and 2, at p. 2-9, line 10.
250/ Ex. 1-C, Appendix 2.1-C, PCA Section 2.1(a) and Exhibit A; Exs. 1-C and 2, at p. 2-9, lines 12-15.
251/ Ex. 1-C, Appendix 2.1-C, PCA Section 2.2(c) and Exhibit A, Section 1.0.

United States, including incorporation of standard design, standard equipment, and use of proven, experienced sub-contractors to complete the work.[252/]

While the cost of the Manzana Wind Project to PG&E under the PSA/PCA is Redacted Redacted,[253/] PG&E is potentially responsible for supplemental costs in five areas: (1) Redacted (2) Redacted Redacted; (3) cost increases in the Gen-tie; (4) costs that result from a delay in SCE's Whirlwind Substation; and (5) Redacted Redacted.[254/] Other than the costs of a delay in Whirlwind Substation, which are discussed in Section VIII. of this Opening Brief and could result in an increase in the initial capital cost, PG&E proposes to manage and absorb the risk associated with these remaining items using the Project's capital contingency already included in the initial capital cost estimate of $911 million.[255/] The forecast of Project capital contingency is discussed in Section V.B.2. below.

2. Transmission Interconnection Facilities

PG&E is responsible for the development and construction of the interconnection transmission facilities necessary to connect the Project to SCE's Whirlwind Substation. Table 5-2 below summarizes PG&E's transmission interconnection facilities costs.

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252/ Exs. 1-C and 2, at p. 2-9, lines 16-25.
253/ Tr., at p. 193 (Lewis, PG&E).
254/ Exs. 1-C and 2, at p. 2-10, lines 9-21 and p. 2-11, lines 1-7.
255/ Tr., at pp. 103-105 (Allen, PG&E).

TABLE 5-2
PACIFIC GAS AND ELECTRIC COMPANY
MANZANA WIND PROJECT TRANSMISSION INTERCONNECTION FACILITIES COST SUMMARY
(NOMINAL THOUSAND DOLLARS)

Line No.	Description	Cost to Complete
1	Generation Interconnection Transmission Line	Redacted
2	Generation Interconnection Permitting, Land Acquisition and Environmental Mitigation	
3	Whirlwind Substation Interconnection	
4	Total Transmission Interconnection Facilities	

The Gen-tie will consist of approximately 6 miles of a single circuit, 220 kV tower line with protection designed to meet SCE's interconnection requirements. PG&E's forecast provides for the acquisition of permanent easements for the single circuit 220 kV Gen-tie and includes activities for land surveys, mapping and easement document preparation, land appraisal, negotiations and easement payment. SCE will be responsible for designing and installing the equipment necessary to connect the Project Gen-tie to the proposed SCE Whirlwind Substation.[256/] PG&E's workpapers contain the detailed cost estimates for the Gen-tie.[257/]

3. PG&E Costs

PG&E will incur costs to oversee the development, engineering, procurement and construction of the Project. PG&E will also provide some equipment, and provide operating and maintenance personnel to the Project during the start-up and performance testing phase. These personnel become the operations staff of the facility after commercial operations. Table 5-3 below summarizes PG&E's costs.

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256/ Exs. 1-C and 2, at p. 5-3, lines 1-23.
257/ Ex 4-C, at p. 5-3.

TABLE 5-3
PACIFIC GAS AND ELECTRIC COMPANY
MANZANA WIND PROJECT PG&E COST SUMMARY
(NOMINAL THOUSAND DOLLARS)

Line No.	Description	Cost to Complete
1	Project and Construction Management	Redacted
2	Pre-Commercial Operations Commissioning Costs	
3	Total PG&E Costs	

a. Project and Construction Management

PG&E's Construction Management Team will oversee the development, construction and commissioning of the Project.[258/] The Construction Management Team will include a project manager, a project engineer, a construction superintendent, environmental and permitting specialists, field inspectors, operations support, and permitting and regulatory support. Resources will be PG&E internal staff with staff augmentation by third party contractors in some areas. The team will include several home office personnel[259/] who will support the Project part-time, on an as-needed basis, and a full-time field staff located at the site. The field staff will be on the site prior to the mobilization of the PCA contractor until after commercial operations, when PG&E operations staff will take full care, custody and control of the facility.[260/]

To develop the cost estimate for the Construction Management Team, staffing levels were based on experience from other projects of similar size and complexity. The monthly staffing plan is included in workpapers.[261/] In the case of home office personnel, the resources responsible for construction management were shared over the anticipated workload of all the Company's new generation projects. Only the costs of the PG&E team members who are not

258/ Exs. 1-C and 2, at p. 5-4, lines 21-25.
259/ Home office support includes mid level management, budgeting, accounting, environmental, and other internal resources that contribute directly to the project, on a part-time basis.
260/ Exs. 1-C and 2, at pp. 5-4 - 5-5.
261/ Ex. 4-C, at p. 5-6.

already covered under the General Rate Case are included in the PG&E cost estimate.[262/]

Other costs are related to facilities and supplies that are required to support the Construction Management Team in execution of the Project, and include: (1) Construction site trailers and facilities including furniture, supplies, office equipment, safety equipment, internal network connections, and other incidentals; (2) Utilities for site facilities including telephone, water, sanitary services, and other monthly fees; and (3) Business travel for equipment shop inspections, trips to engineer and contractor offices, permitting agency meetings, public meetings and other business-related travel and living.

b. Pre-Commercial Operations Commissioning Costs

Pre-commercial operations commissioning costs refers to PG&E's O&M staffing requirements for starting and operating the facility prior to commercial operations, and the implementation of PG&E's operating and maintenance processes and procedures and the necessary systems to implement those processes and procedures. Since these costs are incurred prior to commercial operations of the Project, they are booked as capital costs and incorporated in the estimate of initial capital costs.[263/]

The total pre-commercial operations staffing levels were derived by benchmarking with wind industry manufacturers and wind farm operators. The pre-commercial operations staffing plan provides trained personnel in time to develop procedures and to begin commissioning of the wind turbines as they become available in the construction timeline, ultimately resulting in the commissioning of the entire facility. Staffing is added to the facility over time such that employees receive their mandatory safety, environmental, and technical training sufficiently in advance of when they need to apply those skills for the commissioning of the Project.

262/ Exs. 1-C and 2, at p. 5-5, lines 6-14.
263/ Exs. 1-C and 2, at p. 5-6, lines 12-20.

Approximately nine months in advance of commercial operation, the operations supervisor is hired. The wind technicians for operations and maintenance activities are hired over the next three months. Approximately three months prior to commercial operation, the power plant assistant and the warehouse person are hired.

PG&E will provide new tools, maintenance equipment, vehicles, and furnishings for the new facility. These items will include administrative workstations, computers, conference room furnishings, shop equipment, and tool sets. Additionally, PG&E will require and will provide an initial inventory of spare parts and consumables to quickly make non-routine repairs and replacements, which support maintaining a high level of facility availability.[264]

4. Administrative and General Costs and AFUDC

As shown on lines 6 and 7 of Table 5-1 above, PG&E's proposed initial capital cost also includes an allocation of Administrative and General ("A&G") costs and an AFUDC.

A&G costs include the payment and expenses of general office and administrative and general expenses applicable to construction work as well as property taxes. PG&E's standard A&G rate applied to PG&E labor costs is 14.3 percent. Applying this percentage to PG&E labor costs results in an A&G Allocation of Redacted.[265]

AFUDC is applied to the progress payments and other capital costs incurred by PG&E prior to operation of the Project to compensate PG&E for the carrying costs on the capital expenditures. The AFUDC amount is developed by multiplying PG&E's authorized weighted average cost of capital rate of 8.79 percent by the applicable average asset under construction. The AFUDC included in the cost estimate assumes the Project assets go into rate base on December 31, 2011. The resultant AFUDC estimate is Redacted [266] As is discussed in

264/ Exs. 1-C and 2, at p. 5-6, lines 20-25 and pp. 6-3 to 6-4; Ex. 4-C, at p. 5-7.
265/ Exs. 1-C and 2, at p. 5-8, lines 24-28.
266/ Exs. 1-C and 2, at p. 5-8, line 29 to 5-9, line 1.

Section VIII. of this brief, the amount of AFUDC for the Project may increase if the Whirlwind Substation is delayed.

B. PG&E's Initial Capital Cost Estimate Should Not Be Adjusted By Requiring PG&E To Expense A Capital Cost Item Or To Reduce Project Contingency

The Joint Case Management Statement identifies two contested issues with respect to PG&E's estimate of initial capital costs: (1) whether it is reasonable for PG&E to recover a confidential component of the acquisition cost in rate base rather than as an expense; and (2) whether PG&E's proposed contingency applicable to the initial capital cost is reasonable. These issues are addressed below.

1. There Is No Basis For Requiring PG&E To Expense A Portion Of The Acquisition Cost Of The Project Which Is Properly Capitalized

DRA recommends that Redacted for Redacted Redacted be treated as an expense and amortized over three years rather than included in the initial capital cost of the Project.[267/] PG&E opposes this recommendation. The payment in question is part of the acquisition cost of the Project to compensate the developer for costs incurred in developing and permitting the project. This is a legitimate capital cost under the accounting rules and there is no basis for requiring this portion of the acquisition cost to be expensed.

Redacted

Redacted

267/ Exs. 101-C and 102, at p. 3-8, lines 10-13.
268/ Exs. 9-C and 10, at p. 40.

Redacted

Redacted

The Redacted payment Redacted Redacted This payment, regardless of when paid, is no different than any other acquisition cost, and should receive the same ratemaking treatment as all of the other costs for the acquisition of this Project. Under the accounting rules, the payment is a capital cost and is properly reflected in the capital cost of the Project.[271/]

DRA asserts that under the original form of Redacted Redacted would have been paid over time, rather than in a lump sum.[272/] DRA thus concludes that, under the original form of the Redacted these payments would have been expensed and PG&E's decision to monetize the obligation as a lump sum payment and include it in the initial capital cost increases the capital cost of the project.[273/] There are a number of flaws with this argument.

269/ *Id.*
270/ *Id.*
271/ *Id.*
272/ Tr., at p. 407, lines 22-28 (Shmidt, DRA).
273/ Exs. 101-C and 102, at p. 3-8; Tr., at p. 407, lines 22-28 (Shmidt, DRA).

First, the Commission must evaluate the Project as presented to it in the Application. PG&E decided to Redacted and that payment is a fixed component of the transaction. The Commission must evaluate whether the Redacted payment, <u>as structured in the transaction under Commission review</u>, should be a capital item or an expense item. The evidence clearly supports that it is a capital item. Mr. O'Flanagan, PG&E's expert on ratemaking and capital accounting issues and former director of the Capital Accounting Department at PG&E, testified that the Redacted payment is properly classified as a capital cost and in this regard should be treated no differently than any other Project acquisition cost.[274/] When asked if she had any basis for disagreeing with this conclusion, DRA's witness stated "I understand it is within the Commission's purview to decide what goes into rate base and what does not."[275/] The DRA witness was not able to offer any testimony to contradict the expert testimony of PG&E's witness. She admitted that the extent of her training and expertise on ratemaking issues was a one week seminar.[276/] Simply asserting that the Commission can do whatever it wants to do is not a reasonable basis for expensing a capital item.

Second, the DRA witness simply assumes that under the original structure of the Redacted that making payments to Redacted over time (rather than in a single lump sum) would be less expensive to customers.[277/] DRA presents no analysis to support its conclusion that the Redacted costs customers more. PG&E believes that Redacted results in net customers benefits, by (1) making an uncertain payment stream certain and discounting it to the present and (2) Redacted Redacted under certain circumstances. In addition, DRA assumes, without analysis, that payments over time would have been expensed. In PG&E's view, payments to

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274/ Exs. 9-C and 10, at pp. 40–41.
275/ Tr., at p. 409, lines 12-14 (Shmidt, DRA).
276/ Tr., at p. 406, lines 2-3 (Shmidt, DRA).
277/ Exs. 101-C and 102, at p. 3-8.

Redacted, whether made in a lump sum or spread out over time, are properly characterized as capital costs.

2. PG&E's Overall Project Contingency of Redacted Appropriately Reflects The Relative Risk Sharing Under The PSA/PCA And The Cost Uncertainty For The Project Elements PG&E Is Managing

PG&E has included in its estimate of the Project's initial capital cost a Project contingency of Redacted, equal to about Redacted of the total Project costs.[278/] The purpose of including a contingency is to reflect the uncertainty and risk associated with the scope and schedule of the Project. Contingency allows for the reasonable probability that events may occur during the course of a project that will increase the estimated costs. It is common practice to include contingency for risk and uncertainties in capital cost estimates. Per traditional cost-of-service ratemaking, PG&E's customers will only pay the actual cost incurred for the Project. Thus, if a portion of the capital contingency is not required, customers will not be charged for it. As discussed below, PG&E's proposed capital contingency of approximately Red acte Redacte d is consistent with – in fact it is <u>lower</u> than – capital contingencies recently adopted by the Commission for other PG&E utility owned generation projects.

DRA asserts that PG&E's proposed Project capital contingency is too high and recommends that it be reduced to Redacted or approximately Redacted.[279/] In support of this reduction, DRA asserts the following: (1) it is unclear whether PG&E's proposed contingency is duplicative of costs already included by Iberdrola Renewables in the PSA/PCA costs;[280/] (2) the contingency should only be applied to a subset of PSA/PCA costs for which PG&E may face additional cost responsibility;[281/] and (3) the contingency amount on PG&E's

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278/ Exs. 1-C and 2, at p. 5-6, lines 27-28.
279/ Exs. 101-C and 102, at p. 3-6, lines 2-4.
280/ *Id.* at p. 3-4, lines 4-9.
281/ *Id.* at pp. 3-4 to 3-5.

owner's costs of Redacted should be eliminated as duplicative.[282]

In the following sections, PG&E explains the rationale for its proposed capital contingency and responds to each of DRA's arguments.

a. PG&E's Proposed Capital Contingency Is Consistent With CPUC Approved Contingency Factors For Other Utility Owned Generation

PG&E's proposed contingency is approximately Redacted of the $911 million initial capital cost of the Manzana Wind Project. This was developed by applying a Redacted project contingency in three categories where PG&E faces potential supplemental cost responsibility: (1) PSA/PCA supplemental costs; (2) transmission interconnection costs; and (3) PG&E costs (e.g., project management and oversight costs). The risk that PG&E faces in each of the categories is discussed in detail in Chapter 5 of PG&E's prepared testimony.[283] The overall Project contingency of Redacted is less than Redacted because PG&E did not apply the Redacted Redacted factor to its A&G and AFUDC costs.

This contingency amount is very comparable to capital project contingency factors adopted by the CPUC for other PG&E utility owned generation projects. In the Humboldt Bay Generating Station decision, the Commission reduced PG&E's request and adopted a 5 percent capital contingency factor for the project.[284] In the Humboldt decision, the Commission relied primarily on the precedent established in its Mountainview Power Project, which adopted a 5 percent capital contingency for the utility-owned generation project.[285] For PG&E's Gateway Generating Station, the Commission adopted a settlement which included PG&E's proposed 4.3 percent capital contingency factor.[286] In the decision adopting PG&E's PV program, the

282/ *Id.* at p. 3-6, lines 11-26.
283/ Exs. 1-C and 2, at pp. 5-6 to 5-8.
284/ D.06-11-048, at pp. 21-22.
285/ *Id.* at p. 22; D.03-12-059.
286/ *Id.* at p. 22, fn. 12; D.06-06-035.

Commission adopted a 10 percent capital contingency factor.[287/] In the decision adopting the Fuel Cell program, the Commission reduced PG&E's request and adopted a confidential capital contingency factor equal to Redacted [288/] In the Colusa decision, the Commission adopted PG&E's requested 2 percent project capital contingency factor applicable to a Purchase and Sale Agreement.[289/]

Of all these comparable projects, the 5 percent contingency factor adopted for the Humboldt Bay Generating Station is the most analogous to the Manzana Wind Project because in both Humboldt and Manzana the cost of the underlying power plant was subject to a fixed price Engineering, Procurement and Construction ("EPC") contract. In the Humboldt decision, as PG&E proposes here for Manzana, the 5 percent contingency factor is applied to the entire cost of the project, including the EPC contract plus PG&E owner's costs.

The PV and Fuel Cell projects have Redacted capital contingency factors than the contingency factor PG&E has requested for the Manzana Wind Project and are also analogous to the Project as they entail non-conventional renewable technologies for which PG&E has no development experience.

Finally, the Colusa project's 2 percent capital contingency factor is the least comparable of the projects to the Manzana Wind Project because Colusa was approved as a fixed price Purchase and Sale Agreement wherein PG&E had limited residual financial risk and made no payments prior to delivery of the finished project at commercial operations. It should be pointed out that the Colusa 2 percent capital contingency was proposed by PG&E in the application, reflecting the highly reduced risk associated with the project. In summary, given these recent benchmarks, PG&E's proposed Redacted contingency factor for the Manzana Wind Project is

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287/ D.10-04-052, at p. 2.
288/ D.10-04-028, at p. 3, fn. 2, 18-19.
289/ D.06-11-048, at p. 20.

reasonable and ranks at the low end of capital contingency factors adopted by the Commission for comparable utility-owned projects.

b. It Is More Reasonable To Apply A Single Contingency Factor To The Entire Capital Project Rather Than To Attempt To Assign Multiple Factors To Different Functions

It is industry practice to manage contingency at the project level.[290/] In this case, PG&E has proposed to apply a Redacted Project contingency to all the direct costs for the Project (excluding AFUDC and A&G) without differentiating between high risk and low risk activities. DRA would appear to support a function by function, contract term by contract term evaluation of potential risks where PG&E could face increased costs.[291/] Under such an approach, PG&E would be required to apply varying risk factors to each of the activities at every phase of the project. Some activities, such as design, siting and construction of the 220-kV interconnection line, owner's oversight, Redacted and changes due to issues that arise during construction, have a significantly higher chance of exceeding current forecasts and would therefore require much higher contingences than other activities such as providing the wind turbines.[292/]

Under this approach, the Gen-tie interconnection project (for which PG&E is entirely responsible) might require a 50 percent contingency, geotechnical could require a 30 percent contingency and providing the wind turbines could require a 2 percent contingency. It is not clear how this approach would result in a Redacted contingency for the Project as DRA recommends and there is no record evidence to support this substantially reduced amount.

An example of why higher contingencies would be needed for certain higher risk categories is the Redacted

290/ Exs. 9-C and 10, at p. 42, lines 3-9.

291/ While PG&E has attempted such a refinement in its contingency for O&M costs where there are three discreet functions, it makes little sense to attempt such an approach for such a large-scale capital project.

292/ Exs. 9-C and 10, at p. 42, lines 9-24.

Redacted

As a second example, at this stage of the Project, the 220 kV Gen-tie is a line on a drawing showing the proposed route. Until the route is surveyed, profiled, and the route easements obtained, PG&E cannot determine the exact costs of easements, number of poles, feet of wire, etc.[294/]

These are just a few examples of high-risk activities where, considered in isolation, a Redacted contingency would be unreasonably low. Given the broad scope of the Project and the many high-risk, low-risk and medium-risk activities and contract terms under the PSA/PCA, Gen-tie, and PG&E costs categories where the need for contingency could arise, it is reasonable to adhere to industry practice and adopt a single Redacted contingency applicable to all project capital costs.

c. Whatever Contingency Factor Iberdrola Renewables Assumed Is Irrelevant To PG&E's Potential Cost Responsibility

DRA asserts that because it is unable to examine Iberdrola Renewables' costs and returns under the PSA/PCA, some of PG&E's proposed contingency for the Project could already be accounted for in Iberdrola Renewables' contingency for the project.[295/] PG&E notes that the Commission found the issue of Iberdrola Renewables' costs and returns to be outside the scope

293/ *Id.* at p. 42, lines 25-33.
294/ *Id.* at p. 43, lines 3-9.
295/ Exs. 101-C and 102, at p. 3-4, lines 4-10.

of the proceeding.[296] In any event, DRA's argument does not make sense. PG&E's contingency is based upon potential additional cost responsibility that PG&E faces in three categories: (1) PSA/PCA supplemental costs; (2) transmission interconnection costs; and (3) PG&E costs (e.g., project management and oversight costs). By definition, PG&E is responsible for increases in these costs and activities, not Iberdrola Renewables, so it is irrelevant how much contingency Iberdrola Renewables included in its forecasts for activities and costs for which it is responsible.

d. There Is No Double Counting In PG&E's Proposed Capital Contingency

DRA asserts that capital contingency for PG&E costs is duplicative of PG&E's requested O&M Labor contingency.[297] There is no duplication of contingency amounts in these two items. The O&M Labor contingency applies to post-commercial operations O&M activities and the PG&E costs category applies to pre-commissioning work. These two items apply to different periods of time—prior to commercial operations and after commercial operations. The associated contingency amounts, therefore, do not overlap.

VI. PG&E'S THREE-YEAR FORECAST OF OPERATIONS AND MAINTENANCE EXPENSE FOR THE MANZANA WIND PROJECT IS REASONABLE AND SHOULD BE APPROVED

PG&E's Application for approval of the Manzana Wind Project includes a forecast of O&M costs. PG&E requests that the Commission adopt PG&E's O&M forecast for only the first three years of the Project following the Manzana Wind Project's commercial operations.[298] These O&M costs are included in PG&E's initial revenue requirement for the Manzana Wind Project.[299] The reasonableness of PG&E's O&M forecast for the Manzana Wind Project will be revisited in the first General Rate Case following Project commercial operations and will be

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296/ Quash Ruling at p. 2.
297/ Exs. 101-C and 102, at p. 3-6, lines 18-26.
298/ Exs. 1-C and 2, at p. 6-1, lines 29-30.
299/ *Id.* at p. 7-10, lines 1-4.

subject to on-going Commission oversight, review and revision on a prospective basis, as is typical of all utility assets under cost-of service ratemaking.[300/]

DRA raised three issues in its prepared testimony regarding PG&E's three-year O&M forecast which, as summarized in the Joint Case Management Statement, are as follows:

4. Are elements of PG&E's O&M costs reasonable?
   a. Whether the forecast for project staffing is reasonable.
   b. Whether PG&E's proposed O&M contingency is reasonable.
   c. Whether PG&E should use a one-way balancing account for O&M contingency.

In section VI.A. below, PG&E addresses each of these issues and demonstrates why its three-year O&M forecast is reasonable. As shown below, DRA's proposed adjustments to the O&M forecast would result in a very small adjustment to the cost of service for the Manzana Wind Project, are unnecessary and unreasonable.

In addition, in the Application and prepared testimony, PG&E has also presented a forecast of the O&M costs expected over the 30 year life of the Manzana Wind Project. While PG&E has not requested that the Commission adopt this 30 year forecast, the 30 year forecast of operating costs was used, in combination with the initial capital costs of the Project, in order to estimate the overall cost of the Manzana Wind Project to customers over its useful life. During the course of the evidentiary hearing, parties raised the issue of whether PG&E had adequately forecast the cost of repairs and replacements over the 30 year life of the Manzana Project.[301/] PG&E addresses the reasonableness of its 30 year O&M forecast in section VI.B. below.

A. PG&E's Three Year O&M Forecast Is Reasonable

Chapter 6 of PG&E's prepared testimony describes the various O&M cost streams that

300/ *Id.* at p. 7-2, lines 1-3.
301/ Tr., at pp. 213-229.

support the ongoing safe, compliant, reliable, efficient and competitive operation of the Manzana Wind Project. O&M expenses for the first three years following commercial operations are used in the development of the initial revenue requirement.[302/] The three year forecast for post-commercial operations is shown on Table 6-2:

TABLE 6-2
PACIFIC GAS AND ELECTRIC COMPANY
POST-COMMERCIAL OPERATIONS O&M COSTS
(NOMINAL THOUSAND DOLLARS)

Line No.	Year of Operation	First	Second	Third
1	Total Post-Commercial Operations O&M Costs	Redacted		

O&M costs are separated into five categories, as shown on Table 6-4:

TABLE 6-4
PACIFIC GAS AND ELECTRIC COMPANY
POST-COMMERCIAL OPERATIONS O&M COST SUMMARY
(NOMINAL THOUSAND DOLLARS)

Line No.	Year of Operation	First	Second	Third
1	Labor	Redacted		
2	Consumables			
3	Service Agreement			
4	Balance of Plant Maintenance			
5	Contingency			
6	Total O&M			

PG&E addresses each of the five categories in the following sections.

1. Labor: PG&E's Labor Staffing Forecast Is Reasonable And Backed By Extensive Industry Benchmark Data

PG&E's forecast assumes that the Manzana Wind Project will be staffed by Re da PG&E employees (R wind technicians, Red act operations supervisor, Red act power plant assistant and Red acte warehouse person) consisting of management and bargaining unit employees. These employees

302/ Exs. 1-C and 2, at p. 6-1, lines 29-30.

will be responsible for routine maintenance and operating activities, spare parts warehousing and on-site environmental and regulatory compliance management.[303/] PG&E's proposal to hire Re dac wind technicians to service 164 wind turbines was developed using wind industry benchmarking data which demonstrated a range of one wind technician for every Redacted wind turbines. PG&E obtained benchmark staffing data from three leading wind turbine manufacturers and developers and three other wind farm owners.[304/] PG&E's staffing forecast is at the low end of this range with a ratio of one technician for every Re da turbines, which results in leaner staffing and a lower cost.[305/] PG&E concluded from its review of benchmark data and an assessment of the actual work activities that Re da wind technicians are needed on-site.[306/] DRA, which recommended a reduction of one wind technician, simply used the lowest benchmarking number without regard to the plant design and work scope required at the Project site.[307/] A reduction of one wind technician would reduce the first year revenue requirement for the project by Red acte percent or $Redacte d. PG&E's expert testimony is that reducing staffing, particularly in the first year of operations, increases the risk that the Project will not perform as well as it could have and that it would be imprudent to attempt to operate the Project without adequate staffing.[308/]

2. Consumables

Parts and supplies that are required for routine scheduled maintenance, as opposed to repairs, are considered consumables. This category includes lubricants, filters and cooling fluids. The cost has been estimated to be Redact ed per turbine per year (in 2009 dollars).[309/] No party has expressed concerns with PG&E's forecast of these costs.

303/ Exs. 1-C and 2, at p. 6-5, lines 2-8.
304/ Exs. 9-C and 10, at p. 45, lines 1-17.
305/ *Id.* at p. 44, lines 27-28.
306/ *Id.* at p. 45, lines 8-17.
307/ Exs. 101-C and 102, at p. 3-10; Exs. 9-C and 10, at p. 45, lines 15-17.
308/ Exs. 9-C and 10, at p. 45, lines 18-29.
309/ Exs. 1-C and 2, at p. 6-5, lines 10-18.

3. Service Agreement

PG&E expects to enter into a contract service agreement with General Electric to provide relevant technical expertise and supplement the maintenance activities performed by the PG&E labor on-site. Table 6-5 below summarizes the O&M cost estimates for the service agreement:

TABLE 6-5
PACIFIC GAS AND ELECTRIC COMPANY
SERVICE AGREEMENT O&M COSTS
(NOMINAL THOUSAND DOLLARS)

Line No.	Year of Operation	First	Second	Third
		Redacted		
1	Parts Replacement			
2	Wind Supervisory Control and Data Acquisition			
3	Tech Supervisor			
4	Total Service Agreement			

These elements reflect the cost of services to be provided by GE under the service agreement and are described in the Testimony of Michael L. Jones.[310/] PG&E has not yet executed the service agreement with General Electric but the negotiations are advanced and PG&E expects to execute the agreement before the end of the year.[311/]

4. Balance of Plant Maintenance

O&M activities not directly related to the turbines fall under the balance of plant category. Table 6-7 below provides a summary of the activities and associated costs.

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310/ Exs. 1-C and 2, at pp. 6-5 to 6-7.
311/ Tr., at p. 241, lines 3-4 (Jones, PG&E).

TABLE 6-7
PACIFIC GAS AND ELECTRIC COMPANY
BALANCE OF PLANT MAINTENANCE COSTS
(NOMINAL THOUSAND DOLLARS)

Line No.	Year of Operation	First	Second	Third
1	Road Maintenance	Redacted		
2	Security			
3	Vehicle Expenses			
4	Meteorological Towers			
5	Lease Management			
6	Oil Sampling and Analysis			
7	Regulatory/Permit Compliance			
8	Total Balance of Plant Maintenance			

- **Road Maintenance:**

The Project site will include approximately 35 miles of dirt roads that will require annual maintenance. The ongoing cost for maintaining these roads is estimated to be Redacted per year (in 2009 dollars).[312/]

- **Security:**

PG&E will enact security measures at the plant site and will monitor and evaluate those controls on an ongoing basis. An estimate of the cost of these activities is Redacted per year (in 2009 dollars).[313/]

- **Vehicle Expenses:**

PG&E assumes that the warehouse will require one forklift and each of the Re da wind technicians will drive one vehicle at the Project site. Based on internal estimates, the ongoing cost of maintaining a fleet of Re da vehicles and one forklift is Redacted per year (in 2009 dollars).[314/]

312/ Exs. 1-C and 2, at p. 6-8, lines 4-7.
313/ *Id.* at p. 6-8, lines 9-15.
314/ *Id.* at p. 6-8, lines 16-20.

- **Meteorological Towers:**

The Project will have two meteorological towers. The ongoing cost to maintain and gather data from the towers is estimated to be Redacted per year (in 2009 dollars).[315/]

- **Lease Management:**

Lease management activities include maintaining and administering Re da land leases covering approximately Redac ted acres of land and conducting periodic review of PG&E's operations to ensure compliance with the lease terms and conditions. The ongoing cost to manage the land leases for the Project is estimated to be Redacted per year (in 2009 dollars).[316/]

- **Oil Sample and Analysis:**

Oil sampling and analysis is a predictive maintenance tool used at the Project for early detection of deteriorating conditions to avoid substantial consequential damage.

For rotating equipment, oil analysis can assess the oil for contaminants like water and dirt as well as identify failing bearings prior to catastrophic failure, thereby minimizing repair costs. Based on operating experience with similar components at other facilities, PG&E has estimated an ongoing O&M cost of Re dac per analysis to be conducted annually for pad transformers and bi-annually for gearboxes.[317/]

- **Regulatory/Permit Compliance:**

The Project will require specific mitigation plans to be developed and implemented throughout the life of the Project. Specific plans that are expected to be developed, trained and implemented include: Avian and Bat Monitoring and Protection, Avian Breeding Monitoring, Restoration Plan, Riparian Habitat Restoration, Desert Native Grasslands, Soil Erosion Plan, Fire

315/ *Id.* at p. 6-9, lines 1-4.
316/ *Id.* at p. 2-2, lines 8-12, p. 2-3, lines 2-3, and p. 6-9, lines 5-12.
317/ *Id.* at pp. 6-9, lines 13-29.

Safety Plan and GO 167 Compliance.[318/]

5. O&M Contingency

PG&E's forecast of O&M expenses following commercial operations applies the following contingency factors to account for the uncertainties identified in the ongoing operation of the Project:

1. Redacted for Labor.
2. Redacted for Balance of Plant Maintenance.
3. Redacted for Service Agreements.

As shown in Table 6-4 above, the first year O&M contingency proposed for the Manzana Wind Project is Redacted or Redacted of the total O&M revenue requirement of Redacted million.[319/] Thus, the three factors above result in an overall O&M contingency of Redacted In its prepared testimony, DRA recommends that the contingency factor for Balance of Plant be reduced from Redacted to Redacted and the contingency factor for Service Agreement be reduced from Redacted to Redacted. DRA's position would result in an overall O&M contingency of Redacted The only reason offered by DRA to support this proposed reduction is an assertion that PG&E does not provide convincing evidence to support higher contingency factors for these items.[320/]

a. The Manzana Wind Project O&M Contingency Proposed By PG&E Is Significantly Lower Than The O&M Contingency Factors Approved By The Commission For Other Utility-Owned Generation

PG&E's proposed Redacted overall O&M contingency is a significantly lower O&M contingency than the Commission adopted for recent other utility-owned generation projects.

318/ *Id*. at pp. 6-9 to 6-10.

319/ The overall O&M contingency proposed for years two and three are approximately Redacte d and Red Redact respectively.

320/ Exs. 101-C and 102, at p. 3-12, lines 1-15.

For the Gateway Project, the Commission approved a 15 percent O&M contingency.[321/] For Colusa and Humboldt Bay Generating Stations, the Commission adopted a 15 percent O&M contingency and the Commission adopted a one-way balancing account for the contingency amount.[322/] For the PV Program the Commission adopted a 10 percent O&M contingency.[323/] DRA would reduce PG&E's O&M contingency to Redacted overall and adopt a one-way balancing account. This is clearly unwarranted given the Commission precedent on this issue. PG&E's proposed O&M contingency for the Manzana Wind Project is substantially lower than that adopted for other projects and thus does not warrant one-way balancing account treatment.

b. The O&M Contingency Rates Are Reasonable Given PG&E's Conservative Mid-Range Forecast Of O&M Costs

Based on PG&E's professional experience, the proposed O&M contingency is reasonable. Mr. Jones testified that in developing its estimates of contingency, it is important to remember that:

> PG&E sought to provide a reasonable and conservative estimate of the commissioning and O&M costs for the Project. PG&E chose not to use estimates at the high end of the range for each commodity, material, service, wage rate or inflation factor when preparing its estimate and instead used a reasonable mid-range value. PG&E assumed a mid-range value for the components and developed an overall contingency for the three drivers of O&M costs (Labor, Balance of Plant and Service Agreement), recognizing that it is likely that some portion of the cost components will exceed mid-range and some may be below mid-range. This approach to developing O&M contingency reflects prudent utility practice and results in a reasonable cost estimate for customers.[324/]

PG&E proposed a Redacted contingency for balance of plant maintenance costs because its estimate, drawn from a variety of industry sources, is not project site specific. There may be

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321/ D.06-06-035, Appendix A. The Gateway Project ratemaking was part of an all-party settlement that is non-precedential for the settling parties under the Commission's rules of practice and procedure.
322/ D.06-11-048, at p. 29
323/ D.10-04-052, at p. 35
324/ Exs. 9-C and 10, at pp. 47 – 48.

site-specific circumstances (like weather, soil quality, pests) that drive balance of plant maintenance to be higher than estimated.[325]

PG&E proposed a Redacted contingency for the service agreement because PG&E has not executed a service agreement with General Electric and the cost PG&E will incur under such an arrangement is uncertain. General Electric provides varying levels of service under its flexible wind service solutions package and there are different costs associated with different levels of service. The exact cost will not be known until after PG&E and General Electric negotiate a final agreement that is tailored to the specific needs of the Project.

PG&E has provided substantial evidence to support its O&M contingency estimates. For a brand new wind generation facility (with which PG&E has no direct operating experience) it is reasonable to include contingency in PG&E's O&M forecast.

c. It Is Not Necessary To Adopt A One-Way Balancing Account For O&M Contingency Since The First Three Years Of Costs Are Small And Will Be Superseded In The First General Rate Case Following Project Operations

DRA also proposes in its prepared testimony that PG&E's O&M contingency amounts should be placed in a one-way balancing account. DRA suggests that since the Manzana Wind Project will be the first large wind project operated by PG&E that its forecast is just as likely to result in an overestimation than an underestimation of O&M costs.[326] DRA therefore concludes that a one-way balancing account is appropriate given the potential for forecasting error. While the Commission adopted a one-way balancing account for O&M contingency for the Humboldt Power Plant, it did so out of concern that the 15 percent contingency factor adopted there was too high. PG&E's Manzana Wind Project O&M contingency of Redacted is significantly lower and is only Redacted in year one. For a $911 million project with an annual revenue requirement

325/ *Id.* at p. 47, lines 13-21.
326/ Exs. 101-C and 102, at p. 3-11, lines 3-9.

of $131.8 million, the O&M contingency amount is not significant enough to warrant the exceptional treatment of adoption of a one-way balancing account.

B. PG&E's Forecast Of Operating Costs Over The 30 Year Life Of The Manzana Wind Project Is Reasonable And Properly Accounts For Replacement Of Parts

PG&E developed a 30 year forecast of operations and maintenance costs for the Manzana Wind Project in order to support the calculation of a levelized cost of electricity for the Project set forth in Table 7-3 of PG&E's Direct Testimony.[327/] The 30 year O&M forecast is set forth on line 3 of the "Development of LCOE" Table in the Workpapers for Chapter 7.[328/] As shown on the table, the annual forecast of O&M for the Manzana Project escalates sharply from Redacted million in year 1 to Redacted million in year 30.

1. PG&E Relied On Multiple Wind Industry Sources To Develop Its 30 Year Forecast

To develop this 30 year estimate, PG&E relied on a variety of sources. PG&E conducted direct benchmarking discussions with the major wind turbine manufacturers – General Electric, Siemens, Vestas – and wind farm operators, such as Iberdrola Renewables and others.[329/] PG&E also relied on certain publicly available information to develop its 30 year O&M forecast.[330/] Significantly, Mr. Jones testified that he didn't rely on Exhibit 204-C, the GEC consultant report, to develop his O&M cost projections, although he stated that there was some common third party reference materials cited in the consultant report that Mr. Jones also used to develop his 30 year O&M forecast.[331/] Because there was not a lot of data on the costs of operating wind facilities beyond 20 years, Mr. Jones stated that he calculated an escalation factor for years 21 to 30 based upon trends in the data sets and operational experience of other wind farm operators and

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327/ Exs. 7-C and 8, at clean replacement p. 7-14, lines 20-21.
328/ Ex. 4-C, at pp. WP 7-17 to WP 7- 19; Tr., at p. 232-33 (Jones, PG&E).
329/ Tr., at p. 219, lines 1-5 (Jones, PG&E).
330/ Tr., at p. 219, lines 6-9 (Jones, PG&E).
331/ Tr., at p. 230, lines 8-14 (Jones, PG&E).

manufacturers.[332/]

2. PG&E's 30 Year Forecast Assumption Regarding The Need For Equipment Replacements Was Conservative And Reasonable

Mr. Jones testified that he evaluated the need for equipment replacements and repairs over the 30 year life of the asset.[333/] Table 6-6 of PG&E's prepared testimony, contains the assumed equipment failures incorporated in PG&E's forecast.

TABLE 6-6
PACIFIC GAS AND ELECTRIC COMPANY
PARTS FAILURE RATE ASSUMPTION
(PERCENT/TURBINE/YEAR)

Line No.	Year of Operation	0	3	6	11	16	21	26	30
1	Failure Rate/Turbine/Year	Redacted							

These assumed failure/replacement rates included all of the replacement parts for the wind turbines, including the gearboxes, yaw systems, pitch systems, generators and rotor blades.[334/] The failure/replacement rates in Table 6-6 are stated in terms of percentages of turbines per year that will require replacements. Gearbox assembly replacement cost is estimated to be Redacted per replacement (in 2009 dollars). Other parts are estimated to be Redacted per replacement (in 2009 dollars). The costs to mobilize a crane for a replacement job are estimated to be Redacted per trip for gearbox assembly and Redacted per trip for other parts (in 2009 dollars).[335/] Thus, by applying the percentages for each year in Table 6-6 to the 164 turbines in the Manzana Wind Project, one can calculate that PG&E has forecast that there will

332/ Tr., at p. 234, lines 1-12 (Jones, PG&E).
333/ Tr., at p. 220, lines 24-27 (Jones, PG&E).
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334/ Exs. 1-C and 2, at p. 6-6, lines 3-21.
335/ *Id.* at p. 6-7, lines 1 – 5.

be Red acte gearbox and other parts replacements over the 30 year life of the project.[336/] More specifically, PG&E assumed that there would be Redacted in years 1 and 2 (Redacted Redacted[337/]), Red replacements in the first 10 years, Re dac replacements by year 15, Re replacements by year 20 and Red replacements by year 25. PG&E's 30 year forecast conservatively assumes a very substantial number of replacements over the life of the Project, including an assumption that Re dac of the 164 turbines would require Red acte gearbox and other replacements over their 30 year life.

3. PG&E's Assumption That O&M Funding Would Be Needed For Red acte Replacements Over The Life Of The Project Adequately Addresses The Risk Of Gearbox Failures

In hearings, counsel for DRA asked Mr. Jones if PG&E considered the potential for a serial failure of gearboxes in its 30 year O&M estimate. Redacted Redacted.[338/] Mr. Jones replied that the he did consider estimated failures of gearboxes throughout the life of the Project in his 30 year O&M forecast as reflected in Table 6-6.[339/] In addition, it should be pointed out that the Redacted Redacted Redacted.[340/] Mr. Jones also pointed out that any serial failure of components that occurred Redacted Redacted

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336/ The Red replacements were calculated by multiplying 164 times the percentage factors in Table 6-6 for each year, 1 through 30, rounding to the nearest whole number and summing the annual totals.
337/ Tr., at p. 240 (Jones, PG&E).
338/ Ex. 204-C; Tr., at p. 220.
339/ Tr., at p. 213 (Jones, PG&E).
340/ Tr., at p. 220, lines 9-16; Ex. 204-C, at p. 24.
341/ Tr., at pp. 223, 240 (Jones, PG&E).

Redacted

4. The Issue of Whether Parts Replacements Would Be Expense Or Capital Items Is Insignificant

TURN and DRA raised the issue of whether any of the equipment replacements would be considered capital projects.[343/] Mr. Jones stated that for purposes of his 30 year O&M forecast, he calculated the expenditures required to complete the Red acte replacements and developed "cost streams" to reflect this in his forecast. Mr. Jones stated that PG&E has not adopted a capitalization policy for wind projects yet which would establish whether the replacements would be capital or expense.[344/] Mr. O'Flanagan testified that the issue of whether the replacements would be capital or expense would be "insignificant" for purposes of the levelized cost of electricity analysis and "would make no difference" given how far out many of the replacements would occur.[345/] Thus, for purposes of developing the levelized cost of electricity estimate for the Project – which is the only purpose of the 30 Year O&M forecast – it is irrelevant whether these potential future replacements will be capital or expense because the cost impact to customers is insignificant.

VII. PG&E'S RATEMAKING PROPOSAL REASONABLY IMPLEMENTS TRADITIONAL COST OF SERVICE RATEMAKING PRINCIPLES FOR UTILITY OWNED GENERATION

In the Manzana Wind Project Application, PG&E proposes a simple traditional cost-of-service ratemaking approach for the Project. PG&E has presented an estimated initial

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342/ Tr., at p. 221 (Jones, PG&E).
343/ Tr., at p. 213, 318.
344/ Tr., at p. 213 (Jones, PG&E).
345/ Tr., at p. 318, lines 1-15 (O'Flanagan, PG&E).

capital cost for the Project equal to $911 million. If the actual Project capital costs are equal to or less than the target amount of $911 million, then the actual recorded cost of the Project will be placed in rate base and recovered in generation rates without the need for an after-the-fact reasonableness review. If PG&E exceeds the target initial capital cost of $911 million, it will be at risk for recovery of the excess costs and will need to demonstrate that such excess costs are reasonable in a subsequent CPUC application. This is the same approach that has been employed for other recent PG&E utility owned generation projects.[346/] Adoption of PG&E's ratemaking proposal will assure timely recovery of the reasonable costs of owning and operating the Project as of the date of commercial operation, and will, under most circumstances, eliminate the need for an after-the-fact reasonableness review of initial capital costs.

In this section of the Opening Brief, PG&E addresses the (1) calculation of the initial revenue requirement for the Project; (2) the implementation details of PG&E's ratemaking proposal; and (3) PG&E's proposal for recovery of decommissioning costs for the Project. PG&E's proposal for recovery of costs associated with the delay of the Whirlwind Substation is separately discussed in Section VIII. of the Opening Brief.

There are two contested issues that were raised in the Joint Case Management Statement that relate to PG&E's ratemaking proposal:

> 3. Whether PG&E's proposal to seek adjustments to the initial capital cost via an expedited advice letter process, rather than through a non-expedited Advice Letter or Application, for operational enhancements to the Project, changes in law or other factors beyond PG&E's control, is reasonable.
>
> 5. Whether it is reasonable for PG&E to begin accruing decommissioning costs in the initial revenue requirement.

Issue number 3 is addressed in Section VII.B. below and issue number 5 is addressed in

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346/ See, Humboldt Bay Generating Station, D.06-11-048, at p. 15; Gateway Generating Station, D.06-06-035, Appendix A, at p. 5; PV Program, D.10-04-052, at p. 25; Fuel Cell, D.10-04-028, at p. 38, Conclusion of Law 15.

Section VII.C.

A. PG&E's Initial Revenue Requirement Is Reasonable

In the Manzana Wind Project Application, PG&E requests that the Commission adopt an estimated initial annual revenue requirement of $131.8 million for the Project. This revenue requirement will begin to accrue in the Utility Generation Balancing Account ("UGBA") as of the date of commercial operation of the Project and will be included in rates on January 1 of the following year.[347/] This initial revenue requirement will stay in effect for the first year following commercial operation. Revenues for the Project will be collected in generation rates, which will be designed based upon the then-current adopted methods for setting electric rates for generation revenue requirement changes. The revenue requirements will stay in effect until superseded by the revenues to be established in PG&E's next General Rate Case following commercial operation.

The Project's initial revenue requirement is shown in Table 7-1, as shown below. The development and calculation of the initial revenue requirement is discussed in Chapter 7 of PG&E's prepared testimony and associated workpapers.[348/] PG&E is unaware of any contested issues relating to the development and calculation of the proposed revenue requirement.

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347/ PG&E proposes that this rate change be consolidated with other changes to the UGBA in the Annual Electric True-Up proceeding.

348/ Exs. 1-C and 2, at pp. 7-9 to 7-14; Ex. 4-C, at pp. WP 7-1 to WP 7-16; Exs. 7-C and 8, at clean replacement page 7-9.

TABLE 7-1
PACIFIC GAS AND ELECTRIC COMPANY
MANZANA WIND PROJECT
COMPONENTS OF INITIAL ANNUAL REVENUE REQUIREMENT
(THOUSANDS OF NOMINAL DOLLARS)

Line No.		Year 1	Year 2	Year 3
1	Operating Revenue	131,754	109,185	106,041
2	Operating Expense	Redacted		
3	Operations and Maintenance			
4	Lease Payments			
5	Insurance			
6	Uncollectibles			
7	Franchise Requirements			
8	Subtotal Operating Expenses			
9	Taxes	Redacted		
10	Property			
11	State Corporation Franchise			
12	Federal Income			
13	Subtotal Taxes			
14	Depreciation			
15	Decommissioning Accrual			
16	Total Operating Expenses			
17	Net For Return			
18	Weighted Average Rate Base			
19	Rate of Return			
20	On Rate Base	8.79%	8.79%	8.79%
21	On Equity	11.35%	11.35%	11.35%

B. PG&E's Ratemaking Proposal Implements Cost Of Service Ratemaking, Eliminates The Need For An After-The-Fact Reasonableness Review And Provides For Flexible Review On Non-Controversial Modifications To The Revenue Requirement

Discussion of PG&E's ratemaking proposal is separated into three categories. First, PG&E addresses the recovery mechanism of the initial capital cost estimate of $911 million without the need for an after the fact reasonableness review. No party has contested this approach. Second, PG&E addresses certain proposed adjustments and true-ups to the revenue requirement that are non-contested issues. Third, PG&E addresses its proposed expedited

Advice Letter process for approval of operational enhancements and costs associated with change in law. DRA proposes that PG&E be required to file an application rather than an Advice Letter for this third category.

In addition, PG&E notes that there are three other proposed rate adjustment mechanisms that are addressed in separate sections of this brief. These three topics are: (1) change in renewable tax credits (Section XI. of the Opening Brief); (2) revisions due to delay in commercial operation (Section VIII. of the Opening Brief); and (3) revisions due to change in Project capacity (Section IX. of the Opening Brief).

1. Recovery In Rates Of The Initial Capital Cost Estimate

PG&E requests that the Commission adopt $911.0 million as a reasonable and prudent estimate of the initial capital cost of the Project. PG&E further requests that if the actual cost of the Project is below $911.0 million, PG&E be entitled to include up to that amount in rate base and recover in rates the actual costs of the Project without the need for an after-the-fact reasonableness review.[349/]

PG&E proposes to establish a Manzana Wind Project memorandum account to track the difference between the initial revenue requirement adopted in this proceeding, and the revenue requirement based on the actual capital cost. If the actual capital cost is equal to or below the initial capital cost adopted in this proceeding, the amount in the memorandum account will be transferred to UGBA for recovery in PG&E's Annual Electric True-Up ("AET"). If the actual capital cost is above the adopted amount, PG&E would need to file an application seeking CPUC authorization to recover any amounts in excess of $911.0 million.[350/]

2. Adjustments To Revenue Requirement – Non-Contested Issues

PG&E requests that it be allowed to revise the initial revenue requirement adopted in this

349/ Exs. 1-C and 2, at p. 7-2.
350/ *Id.*

proceeding under certain circumstances, as follows. These adjustments would either be (1) reflected directly in the Manzana Wind Project memorandum account without the need for Commission approval; or (2) submitted to the CPUC for pre-approval under an expedited advice letter process. In this section, PG&E identifies those proposed adjustment mechanisms that are uncontested.

a. Updated Revenue Requirements Factors

Before commercial operation, PG&E proposes to file an expedited advice letter to update the initial revenue requirement to reflect the then current Commission-authorized cost of capital, franchise and uncollectibles factors, and property tax factors. Subsequent to commercial operation, PG&E proposes to update the initial revenue requirement should Commission decisions on these factors be adopted prior to PG&E's next General Rate Case following commercial operation.[351/] DRA is in agreement with this proposed adjustment.[352/]

b. Transmission Upgrades

Under general Federal Energy Regulatory Commission ("FERC") precedent, the costs of transmission upgrades required as a result of a new generator interconnection are paid for by the developer up-front and the developer is reimbursed these costs plus interest at the FERC interest rate by the Transmission Owner over five years. In the event that PG&E is required to finance network transmission upgrades, it requests that it be allowed to adjust the initial revenue requirement to allow PG&E to collect any difference between the interest rate used to reimburse PG&E and its finance costs at its then-authorized weighted average cost of capital on a pre-tax basis. PG&E would reflect this adjustment in the Manzana Wind Project memorandum account.[353/] DRA is in agreement with this proposed adjustment.[354/]

351/ *Id.* at p. 7-3, lines 24–31.
352/ Exs. 101-C and 102, at p. 3-15.
353/ Exs. 1-C and 2, at p. 7-4, lines 6-21.

c. Commercial Operation Date

PG&E proposes to begin accruing the $131.8 million initial revenue requirement in UGBA when the Project's first wind turbine begins delivering energy to the grid. This is expected to occur as soon as October 2011. However, for simplification, the initial revenue requirement was calculated based upon an assumed commercial operation date of December 31, 2011 for the entire 246 MW Project. Since some units are expected to become operational as early as October 2011 and other units as late as March 2012, the initial revenue requirement will be trued-up to reflect the actual operation dates of each of the wind turbines. PG&E will use the Manzana Wind Project memorandum account to adjust the revenues to reflect the actual pattern of deployment of the wind turbines in the AET following commercial operation.[355/] This adjustment was not contested by any party.

d. Non-Bypassable Charge

The Commission has authorized PG&E to recover stranded costs associated with new resources through a non-bypassable charge.[356/] PG&E is entitled to recover any stranded costs associated with utility-owned generation over a 10 year period. PG&E will implement the non-bypassable charge cost recovery for the Project consistent with the Commission's direction in Decisions 04-12-048 and 08-09-012. In addition, PG&E notes that Senate Bill 695 ("SB 695") (Kehoe, 2009), which provides for the recovery of non-bypassable charges for certain power purchase agreements and utility-owned generation was recently enacted by the Legislature and approved by the Governor. Because SB 695 has not yet been implemented by the Commission, PG&E requests that it be entitled, without prejudice, to seek application of

354/ Exs. 101-C and 102, at p. 3-15.
355/ Exs. 1-C and 2, at p. 7-7, lines 1-12.
356/ D.04-12-048, at Conclusion of Law 16, pp. 229-230; D.08-09-012, at pp. 51-54.

SB 695 to the Project in this application once SB 695 is implemented.[357/] This rate proposal was not contested by any party.

e. Allocation Of Administrative And General Expense And Common Plant

PG&E proposes that the allocation of A&G expense and common plant to the Project occur in the next General Rate Case following commercial operations; the proceeding where updating of these common cost allocations normally occurs.[358/] This rate proposal was not contested by any party.

3. Adjustments To Revenue Requirement For Operational Enhancements And Change In Law – Expedited Advice Letter Or Application

PG&E has proposed an expedited advice letter process be adopted for Commission review of certain adjustments to the initial revenue requirement for: (1) operational enhancements to the Project; and (2) revisions due to changes in law or factors beyond PG&E's control. DRA does not oppose PG&E's ability to request Commission approval of changes in this area but it takes the position that any changes should be requested by application, not expedited advice letter. This issue is listed in the Joint Case Management Statement, as follows:

> 3. Whether PG&E's proposal to seek adjustments to the initial capital cost via an expedited advice letter process, rather than through a non-expedited Advice Letter or Application, for operational enhancements to the Project, changes in law or other factors beyond PG&E's control, is reasonable.

a. Revisions Due To Operational Enhancements

PG&E may request scope changes to the Project for operational enhancements that may increase the efficiency of operations of the facility. To the extent these result in an increase in the initial capital cost, PG&E requests the ability to seek an increase in the capital cost by

357/ Exs. 1-C and 2, at p. 7-7, lines 13-26.
358/ Exs. 1-C and 2, at p. 7-8, lines 1-25.

demonstrating the economic benefits of the enhancements. PG&E would seek Commission pre-approval to change the initial capital cost for operational enhancements by expedited advice letter. If the advice letter is approved by the Commission, these increases will be reflected in the Manzana Wind Project memorandum account.

DRA states that while it does not generally oppose the Commission authorizing PG&E to revise the Manzana Wind Project's initial capital cost based on operational enhancements, it recommends that any revision to the initial capital cost of the Project due to operational enhancements should be done through the application process.[359/] In the Humboldt Bay Generating Station decision, the Commission decided that operational enhancements should be evaluated in an application, rather than an advice letter. The Commission reasoned in the Humboldt decision that the advice letter procedure is appropriately used where the requested utility action has been previously approved by Commission decision, and that there is no record to determine that additional capital costs associated with an operational enhancement are necessarily reasonable.[360/]

The important distinction here is that PG&E is seeking to use the expedited advice letter process solely for non-contested enhancements that have a short fuse. In order to implement operational enhancements during the construction period, decisions must be made quickly as to whether to go ahead with a particular enhancement. Requiring an application for approval will simply take too much time. PG&E does not seek to recover costs for operational enhancements in this proceeding, but only requests a procedural mechanism for expedited review of a request. If the advice letter is uncontested because the operational enhancement is unopposed, this mechanism will provide an expeditious process to allow noncontroversial adjustments to be

359/ Exs. 101-C and 102, at p. 3-16, lines 8-9 and p. 3-17, lines 1-3.
360/ D.06-11-048, at p. 24-25.

implemented. On the other hand, if a party opposes the request, the Commission may deny the request and require that an application be filed.[361/]

b. Revisions Due To Changes In Law Or Factors Beyond PG&E's Control

PG&E requests that it be given an opportunity to seek Commission approval via an expedited advice letter filing to revise the capital cost estimate to the extent new or modified regulatory requirements, such as permit conditions, changes in law or regulation or changes in the building code, or other external events, such as a force majeure event, cause the costs of the Project to exceed the $911.0 million cost estimate.[362/]

DRA opposes the use of the advice letter process for revising the capital cost estimate due to changes in law or other external factors beyond PG&E's control, and recommends that the Commission grant authority for such revisions through only the application process.[363/] DRA does not dispute that revisions due to changes in law or other external factors may be necessary,[364/] it only challenges the use of an advice letter process. DRA expresses concern that no record exists to determine the reasonableness of additional capital costs associated with changes in law or other external factors and that the level of costs is too uncertain to review under the lower level of scrutiny required by the advice letter process.[365/] However, as with operational enhancements, PG&E only requests a procedural mechanism for expedited review of a request. Moreover, as indicated above, the advice letter will provide an expeditious process to allow noncontroversial adjustments to be implemented. If a party opposes the request, the Commission may deny the request or seek additional information.[366/]

361/ Exs. 9-C and 10, at p. 32, lines 30-31 and p. 33, lines 1-10.
362/ Exs. 1-C and 2, at p. 7-6, lines 28-33.
363/ Exs. 101-C and 102, at p. 3-23, lines 11-13, 18-19.
364/ *Id.* at p. 3-23, lines 11-12.
365/ *Id* at p. 3-23, lines 13-17.
366/ Exs. 9-C and 10, at p. 33, lines 22-28.

The Commission previously approved a mechanism similar to this for the Gateway project (then referred to as Contra Costa 8), which resulted in the conversion of the project from wet cooling to dry cooling.[367/] This project improvement was a regulatory permit requirement which was uniformly supported by the local community, environmental organizations, and resource agencies. The advice letter process allowed this improvement to proceed on an expedited basis and avoided delays in the project that would have occurred had an application been required. Needing to seek approval of increases in the initial capital cost for changes in law or other external factors by application could result in long delays in the construction of the Manzana Project, and would result in considerable uncertainty.[368/]

C. It Is Appropriate To Recover Decommissioning Costs Over The Full Useful Life Of The Project

As shown on line 15 of Table 7-1, PG&E proposes to include an annual decommissioning accrual of Redacted in the initial revenue requirement.[369/] In Confidential Appendix D of PG&E's Rebuttal Testimony (Ex. 9-C), PG&E provided a schedule of decommissioning costs which included the cost of: mobilization/demobilization equipment for decommissioning the Project; labor and equipment for removing foundations; labor and equipment for removing turbines; labor and equipment for removing collector substations; and labor and equipment for removing roads and the O&M building and site. This information establishes the basis for and the reasonableness of the decommissioning cost estimates used in the initial revenue requirement.

DRA recommends that the decommissioning cost accrual be disallowed from PG&E's initial revenue requirement until additional information is available on both the reasonable estimated costs for decommissioning and the likelihood that the Project will need to be

367/ Resolution E-4054, at p. 15.
368/ Exs. 9-C and 10, at p. 33, lines 29-30 and p. 34, lines 1-10.
369/ Exs. 1-C and 2, at p. 7-9.

decommissioned and the site restored.[370/] The Commission has included decommissioning accruals in generation revenues for other plants despite uncertainty about the timing of decommissioning. It has been the historical practice for non-nuclear units to use the expected end on the plant service life as the expected decommissioning date. The Commission should not exclude decommissioning accruals from the revenue requirement because "it is at least possible" that the plant operations will be extended. Non-nuclear decommissioning estimates are updated in every General Rate Case. If and when it becomes known that the plant life will be extended, the decommissioning accrual can be adjusted at that time.[371/]

DRA states that PG&E has not provided any reason why decommissioning costs should begin accruing from year one of Project operations, and that there is no reason for PG&E to begin accruing decommissioning costs immediately when decommissioning will not occur until 30 years after the plant is operational[372/] Decommissioning costs should begin accruing from year one of Project operations under the concept of intergeneration equity, which is inherent in the Commission's ratemaking policies for capital items. Intergenerational equity requires that the customers that benefit from a service should pay for their fair share of the cost of the service. This concept supports the Commission's use of straight line depreciation for ratemaking purposes, and should also be applied to decommissioning costs. Customers who benefit from the plant's generation in the early years of the plant life should bear their fair share of the cost of decommissioning the plant at the end of its life.[373/]

VIII. IT IS REASONABLE TO ALLOW PG&E TO RECOVER AFUDC COSTS CAUSED BY A DELAY IN WHIRLWIND SUBSTATION

In the Manzana Wind Project Application, PG&E has proposed that the $911 million

370/ Exs. 101-C and 102, at p. 3-13, lines 19-23.
371/ Exs. 9-C and 10, at p. 49, lines 12-21.
372/ Exs. 101-C and 102, at p. 3-13, line 26; p. 3-14, lines 6-8.
373/ Exs. 9-C and 10, at p. 50, lines 14-22.

initial capital cost target price of the Project be increased by a fixed monthly amount in the event of a delay in construction to compensate for the mounting interest costs on Project expenditures. The primary risk addressed by this proposal is the potential delay of completion of the Whirlwind Substation by SCE, which is necessary to complete the interconnection of the Manzana Wind Project to the electric grid. Redacted

Redacted ,[374/] the risk of Whirlwind Substation delay could cause the Manzana Wind Project to fail to meet its projected operations date of December, 2011.[375/] As discussed below, even if the Project is delayed, it remains cost-competitive as compared to other renewable power alternatives.

The cost of Whirlwind Substation delay is driven primarily by the monthly carrying costs applicable to the progress payments that PG&E will make to Iberdrola Renewables under the PSA/PCA. Since the progress payments cannot be placed in rate base and recovered in rates until the Manzana Wind Project becomes operational, the carrying costs will increase for each month of delay. These monthly carrying costs are referred to as AFUDC.

The Joint Case Management Statement identifies PG&E's proposal to recover AFUDC costs resulting from construction delays as a contested issue:

> 6. Whether PG&E's proposal to recover increased costs attributable to delays in commercial operations is reasonable, or whether an alternative ratemaking approach should be adopted.

In this section of the Opening Brief, PG&E describes the ratemaking proposal to recover AFUDC, explains how PG&E calculated the monthly delay cost amount, compares the proposal to other CPUC decisions for utility-owned generation, addresses DRA's proposal to allow PG&E to recover a small portion of the delay costs, and clarifies that PG&E does not propose to use the

374/ Tr., at p. 39 (Lewis, PG&E).
375/ Tr., at pp. 7-8 (Malnight, PG&E).

ratemaking mechanism to recover PCA costs that may be incurred as a result of a delay in construction.

PG&E notes that it is far from certain that the construction costs delay ratemaking mechanism will be required. As described in Section III.E.2. of this Opening Brief, the prognosis for a Redacted completion date for Whirlwind Substation has improved significantly.[376/]

A. The Fixed Monthly Adjustment To The Initial Capital Cost Estimate Reasonably Compensates For AFUDC Resulting From Whirlwind Substation Delay

PG&E's initial capital cost estimate assumes a commercial operation date for the Project of December 31, 2011. Should commercial operation be delayed, there will be increases in the capital costs primarily due to increased costs of AFUDC. In the event of a delay in the Project's commercial operations, PG&E requests that it be allowed to increase its initial capital cost estimate by Redacted for each month of delay in commercial operation.[377/] This results in an increase in the initial revenue requirement of Redacted per month.[378/] PG&E proposes that the monthly increase be reflected in the Manzana Wind Project memorandum account and will be trued-up to reflect actual capital costs.

PG&E has calculated the potential Redacted per month increase in revenue requirement using the worst case assumption that Iberdrola Renewables, by December 31, 2011, has completed installation of the turbines, achieved applicable milestones in the PCA, and received all scheduled progress payments but the Manzana Wind Project cannot be energized due to a delay in completion of Whirlwind Substation. This is the maximum AFUDC projection;

376/ *See also*, Exs. 9-C and 10, at pp. 17-18; Tr., at p. 39, lines 15-25 (Lewis, PG&E).

377/ Exs. 1-C and 2, at p. 5-9, line 14 to p. 5-10, line 1 and p. 6-12, lines 3-10. Of this monthly delay amount, approximately Redacted is attributable to PG&E pre-commissioning labor costs for staff overseeing construction of the Project. The rest of this amount is attributable to AFUDC.

378/ *Id.* at p. 7-5, lines 21-31.

it is quite possible that PG&E may be able to mitigate the potential cost of Whirlwind Substation delay by reducing PG&E costs at the site and negotiating with Iberdrola Renewables to delay construction and modify milestone dates. In the event the delay costs are less than projected, customers will only be charged the actual monthly AFUDC costs, not the worst case estimate of Redacted per month.

B. The Commission Approved A Similar Delay Adjustment For The Gateway Generating Station

The Commission approved a similar mechanism for delays in construction for the Gateway Generating Station.[379/] The Gateway mechanism, which was adopted by the Commission as part of a settlement, provided for a monthly increase in the estimated capital cost of the project to the extent there were delays in obtaining certain governmental approvals. This is the same mechanism that is proposed for the Manzana Wind Project and was adopted to address a similar circumstance: delays to the construction schedule (and mounting AFUDC costs) caused by external events that were outside of PG&E's control. While a settlement is not a binding precedent for future proceedings pursuant to Rule 12.5 of the Commission's Rules of Practice and Procedure, this does not mean the Commission cannot consider the precedent.

In other decisions on utility-owned generation, the Commission authorized PG&E to file an application to recover reasonable additional capital costs caused by project delays as an alternative to the adjustment mechanism proposed here. In the Humboldt Bay Generating Station Decision, the Commission authorized PG&E to recover additional costs incurred as a result of a delay in the closing date or any other reasonable capital costs that it may incur pursuant to a separate application.[380/]

379/ D.06-06-035, Appendix A, p. 5.
380/ D.06-11-048, at p. 24, p. 46, Conclusion of Law 8.

C. A Whirlwind Substation Delay Does Not Significantly Affect The Cost Competitiveness Of The Project

The cost of a potential delay does not significantly affect the economics of the Manzana Wind Project. In the event the 246 MW Project were delayed until mid-August 2012, the net market value would change from Redacted /MWh to Redacted /MWh, or a decrease of Redacted /MWh. Even with this change, the Project still Redacted 30 projects shortlisted in PG&E's 2009 RPS RFO, and Redacted 24 projects PG&E filed for approval in the 12 months prior to submission of the Application.[381/]

DRA recommends that the Commission not allow PG&E to recover its AFUDC costs due to a delay in commercial operations attributable to transmission interconnection delays at its authorized cost of capital rate of 8.79 percent. Instead, DRA recommends that the AFUDC amount for such delays should be calculated based on the 90-day commercial paper rate.[382/] There are a number of problems with DRA's position. First, PG&E cannot finance the cost of the delay with commercial paper. All of the short-term financing available to PG&E is needed to support balancing account balances and other short-term cash needs.[383/]

Second, DRA's proposal would result in an equivalent disallowance of Redacted if the 246 MW Project is delayed until mid-August 2012. This results in PG&E's shareholders being responsible for almost 84 percent of the possible cost of the delay. Given the fact that the economics of the Project are reasonable even in the event of a delay, PG&E shareholders should not bear any of the reasonably incurred AFUDC.[384/]

Finally, it is not reasonable to deviate from traditional cost of service ratemaking principles and require PG&E's shareholders to absorb AFUDC costs since it has no control over

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381/ Exs. 9-C and 10, at p. 19, lines 13-20.
382/ Exs. 101-C and 102, at p. 3-21, line 7 to p. 3-22, line 2.
383/ Exs. 9-C and 10, at p. 20, lines 3-5.
384/ *Id.* at p. 20, lines 6-11.

delay in completion of the Whirlwind Substation and the remainder of the TRTP upgrades. There is no unreasonable action by PG&E attributable to Whirlwind Substation delay that would provide a valid basis for a substantial disallowance of costs. DRA asserts that its proposal will provide an incentive for PG&E to avoid transmission delays but that is a faulty premise since SCE controls the construction of Whirlwind Substation. It is ironic that under DRA's proposal, PG&E's shareholders would be at risk for SCE's construction delays but SCE—the utility managing the project—would be fully authorized to recover its own AFUDC costs associated with transmission construction delays under CPUC and FERC ratemaking principles.[385/]

D. PG&E Does Not Propose To Recover Increased PCA Costs Under The Delay Mechanism

The monthly amounts associated with the delay do not include any costs under the PCA owed to Iberdrola Renewables for remobilization of Iberdrola Renewables' construction crew if Whirlwind Substation is delayed. In such an event, PG&E requests the opportunity to seek additional changes in the initial capital cost via an expedited advice letter. Thus, PG&E is not requesting approval to recover such increased PCA costs without CPUC review; it is merely requesting the opportunity to ask for recovery of such costs, if they occur, under an advice letter process.[386/]

IX. THE MANZANA WIND PROJECT IS REASONABLE EVEN IF THE FINAL PROJECT SIZE IS LESS THAN 246 MW

As discussed in Sections II., III.E.2. and III.E.3. above, Iberdrola Renewables has obtained key local development permits and executed land leases for the full 246 MW Project and has secured turbines sufficient for 189 MW of the Project. There is only one remaining open issue with respect to the final project size, and PG&E believes that it is highly likely that the Project will be built out to the full 246 MW.

385/ *Id.* at p. 20, lines 12-23.
386/ *Id.* at p. 18, lines 21-28.

The Joint Case Management Statement contains the following contested issue on this topic:

> 7. What is the appropriate ratemaking treatment for the incremental 57 MW of the Project and should any conditions be adopted with respect to development of the additional 57 MW?

In this section of the Opening Brief, PG&E discusses its ratemaking proposal to adjust the revenue requirement in the event the Project size is less than 246 MW. PG&E also addresses several proposals raised by DRA and TURN regarding the completion of the incremental 57 MW.

A. Revisions Due To Change In Project Capacity

PG&E expects the installation of 246 MW of capacity. However, it is possible that the Project will be smaller than 246 MW. In that case, PG&E proposes to lower the initial capital cost estimate target price by Redacted per MW if the actual installed capacity is less than 246 MW. This results in a decrease in the initial revenue requirement of Redacted per MW. These decreases will be reflected in the Manzana Wind Project memorandum account.[387/] Of course, PG&E will only charge customers for the actual costs of the reduced size of the Project if actual costs are less than the revised initial capital cost estimate target price.

B. The Manzana Wind Project Is Cost Competitive Even At 189 MW

DRA opposes Commission approval of the Project if the Project is not built out to the full 246 MW and asserts that the Project is not cost effective at the lower capacity.[388/] However, the Project is cost competitive at the 189 MW size. The levelized cost of energy for the Project at 189 MW would be Redacted /MWh and the net market value for the Project would be Redacted /MWh. Based upon the benchmark information discussed in Section III.A. above, even at the reduced size the Project's net market value would Redacted 30 projects

387/ Exs. 1-C and 2, at pp. 7-6, lines 20-26.
388/ Exs. 101-C and 102, at p. 3-26, lines 8-9.

shortlisted in PG&E's 2009 RPS RFO, and Redacted 24 long-term projects PG&E filed for approval in the 12 months prior to the filing of the Application.[389/]

C. PG&E Will Redacted Redacted

As discussed in Sections II. and III.E.3. above, if Redacted

Redacted

Redacted DRA objects to PG&E's Redacted

Redacted

Redacted As described above, if Redacted

Redacted

D. DRA's Proposed Adjustments To Rates For A Smaller Project Are Unreasonable

DRA asserts that if the Commission approves the Project and authorizes PG&E to decrease its size, the pre-commercial operation costs for the Project should be reduced on a pro-

389/ Exs. 9-C and 10, at p. 22, lines 8-15.
390/ *Id.* at p. 22, lines 22-30.

rata basis.[391/] The Project's capacity is expected to be 246 MW. PG&E does not expect to have certainty regarding any reduction in the size of the Project prior to the time necessary to begin staffing and preparing for operations. Since the operating personnel need to be trained as a team in time for preparation of startup and operation (in order to build a team environment, evenly divide work tasks, and to reduce the cost of training), it is prudent to hire the personnel and prepare to operate the expected 246 MW Project. Should the Project be less than 246 MW, the staffing could be modified during the first year of operation. This ensures the Project has sufficient personnel for commissioning so the Project can be completed on schedule. It would not be prudent to hire only the personnel needed to operate a 189 MW project, then increase staffing to operate the 246 MW project when it is determined that 246 MW will be the final size. This approach creates a greater operational risk that insufficient resources are available for commissioning the Project leading to commissioning delays. It would be imprudent to expose the Project to this risk for the benefit of having Red acte less wind technician on staff during commissioning.[392/]

E. TURN's Recommendation To Change The PSA To Require Redacted Redacted Is Unworkable

TURN recommends that the Commission condition approval of the Project on Redacted

Redacted

Redacted [393/] PG&E opposes TURN's proposal. Iberdrola has an existing turbine supply agreement with General Electric which Redacted Redacted and Iberdrola Renewables has already committed to provide wind turbines for the first 189 MW of the Project. Redacted

391/ Exs. 101-C and 102, at p. 3-28, lines 5-20.
392/ Exs. 9-C and 10, at p. 23, lines 12-28.
393/ Exs. 213, 214-C and 215-C, at p. 26, lines 16-19.

Redacted

Redacted Adoption of TURN's proposal could lead to termination of the Project by Iberdrola Renewables.[394]

X. IT IS NOT NECESSARY TO ADOPT AN AVAILABILITY INCENTIVE FOR THE PROJECT GIVEN THE RPS INCENTIVES ALREADY IN PLACE

The Joint Case Management Statement list of contested issues contains the following issue:

> 8. Whether it is reasonable to adopt an availability or other performance requirement for the Project.

TURN recommends that the Commission adopt "availability incentives" to mitigate certain Project risks.[395] An availability incentive is not necessary, however, given the RPS incentives already in place. PG&E has a strong incentive to complete the Project and get it fully operational as soon as possible in order to obtain renewable power to meet its RPS requirements and avoid potential penalties. In addition, once the Project is operational, PG&E is fully incented to operate the facility to maximize the output of renewable power to meet on-going RPS compliance requirements.[396]

394/ Exs. 9-C and 10, at p. 24, lines 3-22.
395/ Exs. 213, 214-C and 215-C, at p. 4, lines 10-13.
396/ Exs. 9-C and 10, at p. 51, lines 15-22.

While TURN has suggested the need for availability incentives, it has not proposed anything specific to which PG&E can respond. TURN's issues are speculative and concern risks that may or may not occur and in most instances are beyond PG&E's control. Under traditional cost of service ratemaking, the Commission has historically reviewed project operations in the context of setting future rates for the next General Rate Case period. Thus, to the extent that TURN is concerned that PG&E may not operate the Project reasonably, this issue can be reviewed in the next General Rate Case following Project operations. The next General Rate Case will take effect in January 2014, which is approximately two years after the Manzana Wind Project is expected to commence operations. This would give TURN and other parties recorded operating data to evaluate PG&E's operations of the Project and the opportunity to raise any issues on a prospective basis.[397/]

XI. PG&E WILL MAKE RENEWABLE TAX CREDIT ELECTIONS TO MAXIMIZE CUSTOMER BENEFITS.

The Joint Case Management Statement lists the following contested issues:

> 9. Are the various proposals regarding the application of the Investment Tax Credit to the Project reasonable?
>
> > a. PG&E's proposal to adjust the initial revenue requirement if the Project is ineligible for the Investment Tax Credit or Production Tax Credit or if such credits are modified.
> >
> > b. TURN's proposal to reduce PG&E's equity return.
> >
> > c. DRA and TURN's proposals for CPUC pre-approval of the tax credit election.
> >
> > d. TURN's proposal that PG&E seek a tax equity investor.

PG&E addresses each of these contested issues in this section of the Opening Brief.

397/ *Id.* at p. 51, lines 20-32.

A. PG&E Should Have The Flexibility To Make Renewable Tax Credit Elections To Maximize Customer Benefits

In developing the initial revenue requirement, PG&E assumed that the majority of the initial capital cost qualifies for a 30 percent ITC under Section 48(a) of the Internal Revenue Code. The Project is eligible for either the ITC or the PTC.[398/] PG&E has proposed in the Application that it will make the election of ITC versus PTC based on an analysis of what results in the highest benefits to customers. Based upon the forecast of Project costs included in the Application, electing ITC results in a slightly lower levelized cost of energy and net market value than PTC. Under ITC, the levelized cost of energy is Redacted/MWh, while under PTC the levelized cost of energy is Redacted/MWh. Because the outcomes are so close and the final election could change based upon the final cost of the Project, the best course of action is to make the decision to elect ITC versus PTC based on the best available information at the time the decision needs to be made, and to choose the election that results in the highest benefits to customers.[399/] In addition, it may be necessary to adjust the initial revenue requirement in the event the ITC or PTC is modified. PG&E therefore requests that it be authorized to make the election between ITC and PTC at the time the Project is placed in service based upon the best information available at the time.[400/]

In the event of a change in the election between ITC and PTC, changes in the renewable tax credits, changes in the amounts that qualify for tax credits, or expiration of the tax credits, PG&E asks that it be allowed to revise its initial revenue requirement to reflect the latest tax information available after commercial operation. PG&E would reflect this adjustment in the Manzana Wind Project memorandum account.[401/]

398/ Exs. 1-C and 2, at p. 7-4, lines 23-25.
399/ Exs. 9-C and 10, at p. 56, lines 21-29 and p. 57, lines 1-2.
400/ Exs. 1-C and 2, at p. 7-4, lines 31-34 and p. 7-5, line 1.
401/ *Id.* at p. 7-5, lines 5-11.

B. PG&E Should Be Authorized To Proceed With The Project Even If The ITC Or PTC Is Allowed To Expire

If the Manzana Wind Project is delayed beyond December 31, 2012 (the current operations deadline for the ITC and PTC for wind projects) and the ITC or PTC is not extended, PG&E requests authorization to proceed with the Project without application of the ITC or PTC.[402/]

As a threshold matter, PG&E believes there is very little risk that that Manzana Wind Project will not be completed prior to December 31, 2012, as is discussed in Section III.E.7. above. The key issue is the completion date for the Whirlwind Substation. PG&E discusses above the very positive developments concerning its timeframe for completion in Section III.E.2. of this Opening Brief. Even if there is a delay in the completion of Whirlwind Substation, it is highly unlikely this would cause the Manzana Project to be delayed beyond the end of 2012. Second, it seems likely that the ITC and PTC will be extended based upon recent past history and the strong political support for renewable resource development.[403/]

However, if the ITC or the PTC is not extended, it will have a ripple effect across the entire renewable energy sector and will not just affect the economics of the Manzana Wind Project. In fact, it may make the best sense for ratepayers to retain the Project even without the ITC/PTC benefits as other opportunities at that time may be less competitive. Furthermore, additional regulatory decisions or legislation, such as the recent Tradable Renewable Energy Credits decision, may place an even greater premium on in-state generation. This would increase the value of the Project. DRA's recommended blanket rejection of the Project may preclude customers from capturing the significant environmental and economic benefit of this highly

402/ Ex. 1-C, p. 7-5, lines 5-11.
403/ Exs. 9-C and 10, at p. 34, lines 20-22.

competitive, viable Project even in a non-ITC or PTC world.[404]

C. Requiring PG&E To File An Advice Letter For CPUC Pre-Approval Of The Renewable Tax Credit Is Unnecessary Micromanagement And Could Lead To A Suboptimal Result For Customers

DRA and TURN recommend that the Commission require PG&E to file an advice letter seeking CPUC pre-approval of the election between the ITC and PTC. PG&E does not believe an advice letter is necessary seeking CPUC pre-approval of the election of ITC versus PTC for the Manzana Wind Project. Given the fact that the levelized cost of energy under either option is so close, PG&E believes the decision should be made once the final Project costs are known.[405]

Under Internal Revenue Service ("IRS") regulations, PG&E must make the one time ITC/PTC election in its Federal income tax return for the year in which the Project is placed in service. PG&E will begin discussions with the IRS on the ITC/PTC election under the real time audit program as soon as the Project becomes operational in 2011, although the election will not be made until PG&E submits its 2011 Federal tax return in 2012.[406] Requiring PG&E to file an advice letter and wait for the outcome before making the election could require PG&E to make the ITC/PTC election prior to knowing the final costs of the Project and having to guess could result in PG&E making a less efficient election resulting in a lost opportunity for customer savings.

While PG&E does not think the ITC/PTC election should be taken lightly, it believes that DRA overstates the importance of the decision to customers. At a 34.5 percent net capacity factor, which is substantially higher than the estimated 31.1 percent net capacity factor for the Project, PTC results in an levelized cost of energy that is Redacted /MWh more favorable than ITC. PG&E does not believe that an advice letter is necessary regarding the election and

404/ Exs. 9-C and 10, at p. 34, lines 16-27.
405/ *Id.* at p. 56-57.
406/ *Id.* at p. 57, lines 10-15.

requiring PG&E to a make a proposal before the final Project costs are known could result in the wrong election.[407/]

Finally, PG&E believes that it is unreasonable and unnecessary for the Commission to micro-manage PG&E's tax elections for the Project. PG&E is not aware of any other Commission order which requires it to obtain pre-approval on a tax election before filing its Federal Tax Return with the IRS. DRA and TURN fail to allege adequate grounds for imposing such a requirement in this case. First, PG&E has clearly stated that maximizing customer benefits will be the guiding principle that it will use to make the renewable tax credit election for the Project and the reasonableness of PG&E's election can be reviewed in future General Rate Cases. Second, the potential value of the ITC versus PTC credit to customers for the Manzana Project is virtually equal. Thus, the minimal risk to customers of making the wrong choice does not warrant an unprecedented level of CPUC micro-management as recommended by TURN and DRA.

In the PV Decision, the Commission dealt with the issue of maximizing renewable tax credits for solar projects in a simple and straightforward manner. The Commission ordered PG&E to "maximize the use of tax benefits available to support solar development, including the Investment Tax Credit and the Modified Accelerated Cost recovery System. These benefits should accrue to ratepayers to the extent practicable."[408/] The Commission should take the same approach here.

D. TURN's Proposal To Require PG&E To Seek A Third Party Tax Equity Investor Is Unworkable For The Manzana Wind Project

TURN proposes that the Commission require PG&E to seek out a tax equity investor for

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407/ *Id.* at p. 57, lines 19-27.
408/ D.10-04-052, at p. 80, Ordering Paragraph 6.

the Project as a means of potentially monetizing ITC for a greater benefit to ratepayers.[409/] TURN's proposal is not workable for the Project given the project schedule, complexity of the potential investment concept, and timing associated with the need to implement the idea and to obtain Commission approval. A tax equity investment as proposed by TURN would require PG&E to effectively sell the Project to a third party and lease it back so that the third-party investor would own the tax equity in the project and be able to claim the ITC in its tax returns. PG&E is not aware of this concept being used before for a utility-owned plant so there is no established "cookie cutter" approach to the deal. PG&E expects that it would take six months to a year to examine the feasibility of such an approach and to negotiate the financial terms and conditions, assuming there was a willing partner. Given that ownership of the Project would have to be transferred to the tax equity investor, a second, separate CPUC application would be required to obtain approval of the transaction and disposition of the asset under Public Utilities Code Section 851. The application would also have to establish new, unprecedented ratemaking for the Project, as there would be no owned asset to put in rate base. The timing and uncertainty associated with negotiation, implementation and regulatory approval of the transaction could cause substantial uncertainties in project development and potentially threaten the ability of the Project to meet the ITC project operations deadline of December 31, 2012. The risk of failing to meet the deadline to qualify for ITC is large enough to prevent any potential tax equity investor from investing the substantial time and money it takes to negotiate these complex tax equity transactions.[410/]

Furthermore, it is unclear whether there are sufficient tax equity investors in the market with the appetite to take on such a large project and associated risks. It is further uncertain what

409/ Exs. 211 and 212-C, at p. 3.
410/ Exs. 9-C and 10, at p. 52, line 16 to p. 53, line 8.

type of market return the tax equity investors would require (and associated terms and conditions) under current unfavorable market conditions further calling into question the benefit to customers associated with the approach. While there could be potential benefits associated with the approach for future renewable power investments by the utility, there is not time to explore the concept for the Project or sufficient evidence to suggest the approach is feasible and worthwhile for customers. If the Commission were to adopt TURN's proposal as a condition of approval of this Application, all of the above constraints and uncertainties would likely cause PG&E to consider this an unacceptable ratemaking condition and terminate the Project.[411/]

E. TURN's Proposal To Reduce PG&E's Equity Return Would Result In A Normalization Violation Under IRS Regulations

TURN also proposes to require that the Manzana Wind Project equity rate of return be reduced by 100 basis points.[412/] As described in detail in PG&E's Rebuttal Testimony, providing a reduced equity rate of return for the Manzana investment based on TURN's argument that the ITC normalization requirements would result in an overall increased rate of return for shareholders would constitute a normalization violation and cause forfeiture of PG&E's ITC.[413/]

To be able to claim ITC, a public utility must "normalize" such credits. Normalization is an accounting and ratemaking methodology whereby the current cash benefit of the credits must be retained by a utility (i.e., may not be immediately flowed through to ratepayers), and the longer-term benefits of the credits may only be passed through to ratepayers following specific rules.[414/] PG&E is a taxpayer subject to normalization under former Internal Revenue Code Section 46(f)(1).[415/]

Violation of the normalization rules would result in forfeiture of all of PG&E's ITC

411/ *Id.* at p. 53, lines 9-21.
412/ Exs. 211 and 212-C, at p. 4.
413/ Exs. 9-C and 10, at pp. 53-56.
414/ *Id.* at p. 53, lines 29-34.
415/ *Id.* at p. 54, lines 1-2.

claimed in any year open for adjustment under the statute of limitations or, if greater, PG&E's entire amount of unamortized deferred ITC (whether or not arising in open years). TURN's proposal to reduce the authorized equity rate of return for the Manzana investment by 100 basis points would result in a normalization violation. Although Treasury Regulation Section 1.46-6(c)(1) allows a rate base reduction for unamortized ITC (as PG&E proposes in its ratemaking proposal in the application), it clearly does not permit any additional benefits of the credit to be passed through to ratepayers, either through cost of service reductions or through rate base reductions.[416/]

Furthermore, the Treasury Regulations prohibit any *indirect* pass through of benefits related to ITC to ratepayers. Treasury Regulation Section 1.46-6(b)(4) states:

> (i) Cost of service or rate base is also considered to have been reduced by reason of all or a portion of a credit if such reduction is made in an indirect manner.
>
> (ii) One type of such indirect reduction is any ratemaking decision in which the credit is treated as operating income (subject to ratemaking regulation) *or is treated less favorably than the capital that would have been provided if the credit were unavailable*…. (emphasis added)
>
> (iii) A second type of indirect reduction is any ratemaking decision intended to achieve an effect similar to a direct reduction to cost of service or rate base…. (emphasis added)

TURN's proposal to grant a reduced equity rate of return of 10.35 percent for the Manzana investment would violate the restrictions on indirect reductions to cost of service or rate base provided in clauses (ii) and (iii). Granting a reduced equity rate of return due to the normalization benefits to shareholders would constitute treating the entire capital requirement for Manzana "less favorably than the capital that would have been provided if the credit were

416/ *Id.* at p. 54, lines 20-30 and p. 55, lines 1-3.

unavailable."[417/]

XII. PG&E SHOULD BE AUTHORIZED TO PROCEED WITH THE SALE-BACK OPTION UNDER LIMITED CIRCUMSTANCES

PG&E has negotiated the option to require Iberdrola Renewables to purchase the Project back under certain circumstances.[418/] If PG&E decides to exercise the repurchase option, PG&E would be reconveying the Project to Iberdrola Renewables. In this unlikely situation, CPUC authorization under Public Utilities Code Section 851 may be required to sell the Project back to Iberdrola Renewables. PG&E therefore seeks that authorization at this time.[419/]

The Joint Case Management Statement sets forth the following issue on this topic:

> 10. Should PG&E be pre-authorized under Public Utilities Code Section 851 to sell the Project back to Iberdrola under certain circumstances?

TURN recommends that PG&E return to the Commission for approval of the decision to "sell back" the Project to Iberdrola Renewables.[420/] PG&E is opposed to this recommendation on the grounds that there simply isn't time to obtain CPUC pre-approval under the timeframes for exercise of the sale back option in the PCA. Accordingly, adopting TURN's recommendations would effectively eliminate PG&E's ability to manage risk under this option.

Redacted

Redacted PG&E has the option under Section 7.9(d) of the PCA to sell the Project back to Iberdrola Renewables if Redacted Redacted Under these circumstances,

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417/ *Id.* at p. 55, lines 4-25.
418/ Exs. 1-C and 2, at p. 2-12, lines 4-12; Exs. 9-C and 10, at p. 35, lines 15-29.
419/ Exs. 1-C and 2, at p. 2-12, lines 20-25.
420/ Exs. 213, 214-C and 215-C, at p. 22, lines 7-22.
421/ Exs. 1-C and 2, at p. 2-12, lines 5-10.

PG&E has Redacted to exercise the sale-back option, and there is no mechanism in the PSA for additional approvals at that time.[422] Redacted

Redacted

Redacted

PG&E also has the option under Section 8.4(c) of the PCA to sell the Project back to Iberdrola Renewables if Redacted Under these circumstances, PG&E has Redacted to exercise the sale-back option, and there is no mechanism in the PSA for additional approvals at that time.[424]

Finally, PG&E also has an election under Section 13.3(a) of the PCA to sell the Project back if Redacted Redacted. PG&E may exercise this option within Redacted Redacted and again, there is no mechanism for additional approvals at that time. Redacted Redacted while the Commission reviews what action PG&E should take.[425]

These measures were negotiated by PG&E to protect customers from being exposed to higher costs or reduced benefits from the Manzana Wind Project. Significant value would be destroyed by the delay. A requirement to obtain an additional approval would require renegotiation of the PSA, and it is not realistic to expect Iberdrola Renewables to agree to absorb this loss in value. Moreover, the time it would take to renegotiate the PSA would likely make it

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422/ Exs. 9-C and 10, at p. 35, lines 15-23.
423/ Exs. 1-C and 2, at p. 2-12, lines 14-16.
424/ Exs. 9-C and 10, at p. 35, lines 15-23.
425/ *Id.* at p. 35, lines 23-32.

impossible to close the acquisition within the timeframe provided by the PSA.[426/]

XIII. CONCLUSION

In summary, PG&E requests that the Commission issue an order:

1. Granting a Certificate of Public Convenience and Necessity authorizing PG&E to construct the Project, including a 246 MW wind facility and an approximately six mile Gen-tie;
2. Determining, pursuant to Public Utilities Code section 1005.5(a), that the maximum reasonable and prudent cost for the Project is $911.0 million;
3. Approving a prudent initial capital cost estimate of $911.0 million for the Project;[427/]
4. Adopting an estimated annual revenue requirement for the Project's first year of operations equal to $131.8 million;[428/]
5. Authorizing PG&E to recover in rates the actual costs of the Project up to the CPUC-adopted prudent initial capital cost estimate without the need for an after-the-fact reasonableness review and, if actual costs exceed the prudent initial capital cost estimate, allowing recovery of the excess costs above the estimate only following submission of a separate application and upon a Commission finding of reasonableness;[429/]
6. Adopting the initial three year forecast of O&M expense for the Project;[430/]
7. Authorizing PG&E to update the Project's initial capital cost and initial O&M estimate for (1) cost increases associated with monthly delays in commercial

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426/ *Id.* at p. 35, line 32 and p. 36, lines 1-9.
427/ *See* Section V. of this Opening Brief.
428/ *See* Section VII. of this Opening Brief.
429/ *See* Section VII.B.1. of this Opening Brief.
430/ *See* Section VI. of this Opening Brief.

operations beyond December 31, 2011 or increased PCA costs resulting from transmission delays;[431] (2) operational enhancements pre-approved by the Commission via an expedited advice letter process;[432] (3) reductions in the revenue requirement if the final Project size is less than 246 MW;[433] and (4) revisions due to new or modified regulatory requirements, change in law or force majeure events to the extent pre-approved by the Commission via an expedited advice letter process;[434]

8. Authorizing revisions to the initial revenue requirement for (1) updated revenue requirement factors to reflect the then-current cost of capital, franchise and uncollectibles, and property tax factors;[435] (2) finance costs for transmission upgrades, if required;[436] and (3) changes in or expiration of renewable tax credits, including if the Project is delayed beyond the December 31, 2012 operations deadline for federal tax credits;[437]

9. Establishing a Manzana Wind Project memorandum account to track the difference in the initial revenue requirement adopted in the proceeding and the actual revenue requirement based on the actual capital cost and authorizing transfer of the Manzana Wind Project memorandum account balance to the UGBA for recovery in the next AET following commercial operation;[438]

431/ *See* Section VIII. of this Opening Brief.
432/ *See* Section VII.B.3.a. of this Opening Brief.
433/ *See* Section IX. of this Opening Brief.
434/ *See* Section VII.B.3.b. of this Opening Brief.
435/ *See* Section VII.B.2.a. of this Opening Brief.
436/ *See* Section VII.B.2.b. of this Opening Brief.
437/ *See* Section XI.A., B. and C. of this Opening Brief.
438/ *See* Section VII.B.1. of this Opening Brief.

10. Adopting a non-bypassable charge to recover stranded costs over a 10-year period or, alternatively, for the period adopted by the Commission for utility-owned generation following implementation of SB 695 (Kehoe, 2009);[439/]

11. Authorizing PG&E pursuant to Public Utilities Code Section 851 to sell the Project back to Iberdrola Renewables under certain circumstances;[440/] and

12. Granting such other relief as is necessary to effectuate the Application and issuance of a Certificate of Public Convenience and Necessity.

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439/ *See* Section VII.B.2.d. of this Opening Brief.
440/ *See* Section XII. of this Opening Brief.