

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1829, UM 1830, UM 1831, UM 1832, UM 1833

BLUE MARMOT V LLC (UM 1829))
BLUE MARMOT VI LLC (UM 1830))
BLUE MARMOT VII LLC (UM 1831))
BLUE MARMOT VIII LLC (UM 1832))
BLUE MARMOT IX LLC (UM 1833))
 Complainants)
 vs.)
PORTLAND GENERAL ELECTRIC)
COMPANY)
 Defendant)
Pursuant to ORS 756.500.)
_____)

DIRECT TESTIMONY OF

WILLIAM TALBOTT

ON BEHALF OF THE

BLUE MARMOT V, VI, VII, VIII, AND IX

February 25, 2020

1 **I. INTRODUCTION**

2 **Q. Mr. Talbot, please state your name and business address.**

3 **A.** My name is William Talbot. I am employed as a Development Project Manager
4 with EDP Renewables North America (“EDPR NA”). My business address is 53
5 SW Yamhill Street, Portland, Oregon 97204.

6 **Q. Please describe your background and experience.**

7 **A.** I lead development of solar projects for EDPR NA in the West Region, which
8 includes market analysis and identification of commercial opportunities, site
9 identification, site acquisition, interconnection, permitting and supporting power
10 marketing and power purchase agreement negotiations. I have worked in this role
11 since 2015. Prior to joining EDPR NA I worked as a management consultant
12 with McKinsey & Company. I received a Bachelor of Arts in Economics from
13 Pomona College, a Master of Business Administration from the MIT Sloan
14 School of Management and a Master of Public Administration from the Harvard
15 Kennedy School.

16 **Q. On whose behalf are you appearing in this proceeding?**

17 **A.** This testimony is submitted on behalf of Blue Marmot V, Blue Marmot VI, Blue
18 Marmot VII, Blue Marmot VIII, Blue Marmot IX (jointly, “Blue Marmots”). The
19 Blue Marmots own each of the individual projects (jointly, “Blue Marmot
20 Projects”). EDPR NA is the parent company of the Blue Marmots.

21 **Q. Please summarize your testimony.**

22 **A.** The objective of this testimony is to explain the position of the Blue Marmots on
23 the commercial operations date (“COD”) that is achievable for each project. In
24 Order Number 19-322 in UM 1829 et al., the Oregon Public Utility Commission

1 (“Commission”) found that with respect to the Blue Marmots’ request that
2 Portland General Electric Company (“PGE”) adjust the CODs in the PPAs
3 partially executed by the Blue Marmots, there was “insufficient evidence on the
4 record to demonstrate that achievement of the Blue Marmots’ stated CODs is not
5 possible due to litigation...”¹ The Commission provided that the “Blue Marmots
6 may assert such a claim following this order, and PGE will be entitled, as it
7 requests in its reply brief, to a full evidentiary proceeding with discovery as we
8 consider this question.”²

9 PGE and the Blue Marmots have agreed that there are two issues to
10 address on the question of appropriate COD relief, which are:

- 11 • Whether litigation caused commercially reasonable delays in the Blue
12 Marmots’ scheduled commercial operation dates listed in their partially
13 executed PPAs?
- 14 • Should the Blue Marmots’ scheduled commercial operation dates be
15 extended and if so, what new dates should be included in the final
16 executable PPAs that PGE must offer consistent with the final resolution
17 of all issues in Phase II of UM 1829 or other subsequent proceedings?³

18 **Q. Please summarize the remaining sections of your testimony.**

19 **A.** Section 2 of this testimony will provide an overview of the Blue Marmots’
20 position regarding appropriate COD relief for these projects. Section 3 will

¹ *Blue Marmot V LLC et al. v. PGE*, Docket No. UM 1829 et al., Order No. 19-322 at 20 (Sept. 30, 2019).

² *Id.*

³ *Blue Marmot V LLC et al. v. PGE*, Docket No. UM 1829 et al., PGE and Blue Marmots Joint Issues List at 1 (Jan. 2, 2020).

1 describe the original execution plan in place for the projects at the time the Blue
2 Marmots executed the Schedule 201 power purchase agreements (“PPAs”)
3 provided by PGE. Section 4 will explain how development of the projects has
4 advanced and evolved during the UM 1829 et al. proceeding. Finally, Section 5
5 will describe development work and the associated timelines that remain to bring
6 these projects online.

7 **Q. How have the Blue Marmots interpreted the Commission’s order allowing**
8 **the Blue Marmots to demonstrate what CODs they are entitled to?**

9 **A.** We view the Commission’s order as being sympathetic and supportive of the Blue
10 Marmots’ request for new CODs, but understand that the Commission wants to
11 set reasonable dates and provide PGE an opportunity to present evidence and
12 argument on this issue. We do not believe that the Commission would have
13 issued an order granting four of the five projects their requested relief without
14 intending to allow the projects a reasonable opportunity to actually be
15 constructed, which cannot happen give the current CODs in their PPAs. We also
16 believe that the Commission understands that litigation takes time, and that it
17 wants to ensure that parties are provided complete relief and not penalized simply
18 because of the normal adjudicatory process.

19 **II. OVERVIEW**

20 **Q. What are the specific CODs that the Blue Marmots are requesting?**

21 **A.** The CODs that would provide appropriate relief to the Blue Marmots are as
22 follows:

23 Blue Marmot V: September 27, 2023

24 Blue Marmot VI: October 13, 2023

1 Blue Marmot VII: November 2, 2023

2 Blue Marmot VIII: November 23, 2023

3 Blue Marmot IX: December 7, 2023

4 It should be noted that these dates assume that an order in the Phase II
5 proceeding of UM 1829 et al. will be received by roughly September 2020. It's
6 clear that the dates requested above are significantly later than the CODs
7 originally contemplated in the PPAs that the Blue Marmots partially executed.
8 The CODs for Blue Marmot V and Blue Marmot VI were November 30, 2019
9 and for Blue Marmot VII, Blue Marmot VIII and Blue Marmot IX were March
10 31, 2020. At the time the Blue Marmots executed PPAs that included these
11 CODs, the projects had plans in place that supported reaching commercial
12 operations on timelines compatible with these dates.

13 However, the refusal of PGE to countersign the PPAs and the ensuing
14 proceeding before the Commission has created existential uncertainty and risk for
15 these projects. As a result, EDPR NA has slowed their development. Proceeding
16 with the original execution plans in place for the projects and spending more than
17 \$90 million to complete their development and construction with no assurance
18 that the projects would ultimately secure viable PPAs with PGE would represent a
19 highly speculative gamble. Like most other independent power producers, EDPR
20 NA's business model is based on building projects that have secured long-term
21 revenue contracts. To build these projects without that visibility into revenue
22 contracts would be unacceptably risky. Moreover, prudent risk management in
23 project development also calls for pacing spending in areas of development far

1 less capital-intensive than procurement and construction, such as permitting and
2 interconnection, commensurate with commercial traction; in other words,
3 developers that manage risk effectively delay more than just procurement and
4 construction until they have clear visibility into commercial arrangements for
5 projects.

6 **Q. Are the Blue Marmots able to achieve their current CODs?**

7 **A.** No. It should be clear that meeting the CODs in the originally executed PPAs is
8 out of the question. Two of the five projects (Blue Marmot V and VI) have CODs
9 in their PPAs that already passed two months ago. The remaining three projects
10 (Blue Marmot VII, VIII and IX) have CODs in their PPAs that are approximately
11 two months from now. To reach those CODs those three projects would need to
12 be in late stage construction right now. As explained above, to start construction
13 without any visibility into revenue contracts for the projects and simply hope for a
14 favorable resolution to this proceeding has always been out of the question.

15 **Q. Are the Blue Marmots moving forward with all investments in the projects?**

16 **A.** No. The Blue Marmot projects presently find themselves in the difficult position
17 of needing to justify their development timelines and explain why they have not
18 accelerated development to enable earlier CODs. The Blue Marmot projects are
19 still not moving forward decisively because the existential question over whether
20 or not the projects will secure viable PPAs from PGE continues to persist and
21 creates an environment of uncertainty and risk for investing further in the
22 projects. If the Commission does not provide reasonable extension of the CODs,
23 then the PPAs will be of no value to the Blue Marmots because they would be
24 terminated before the projects could be constructed.

1 **Q. Did the Blue Marmots expect that the Commission would grant new CODs in**
2 **the earlier litigation?**

3 **A.** Yes. The Blue Marmots were surprised that they did not receive certainty
4 regarding whether they will be provided viable PPAs given that the Commission
5 concluded that, for four of the five Blue Marmot projects, PGE must accept
6 delivery at the PACW.PGE POD, which was the core issue disputed in Order No.
7 19-322. It should not be the case that after securing a largely favorable decision
8 on the fundamental commercial disagreement regarding delivery at PACW.PGE,
9 the Blue Marmots might be rewarded for their prudent risk management during
10 the course of this proceeding to date, with insufficient COD relief to actually
11 build the projects. This would render the Commission's agreement with the Blue
12 Marmots on PACW.PGE delivery as largely illusory, with no ability for those
13 delivery rights to actually be realized, which strikes the Blue Marmots as
14 inconsistent with the Commission's presumed intent.

15 **Q. Have the Blue Marmots stopped all development work pending a final order**
16 **on the appropriate CODs.**

17 **A.** No, the Blue Marmots are investing some money in hope that the Commission
18 will require PGE to provide PPAs with reasonable CODs. If the Commission
19 declines to provide adequate COD relief in this Phase II proceeding, that will
20 effectively end development of these projects, as they were originated to address
21 the Schedule 201 opportunity with PGE that existed at the time of their
22 conception. Therefore, any investments in development during this proceeding
23 continue to be "at risk", with no assurance that they will be recouped in the form
24 of operating projects. However, EDPR NA continues to work on the Blue
25 Marmot projects and to seek to identify opportunities to advance their

1 development in cost-effective ways and make good faith efforts to avoid
2 unnecessary delays in the project CODs. EDPR NA remains confident that given
3 Order No. 19-322, the position of these projects is meritorious and that they will
4 ultimately secure the COD relief warranted to effectuate the intent of Order No.
5 19-322. That said, there is only a limited amount of cost and risk that EDPR NA
6 will incur prior to obtaining a final order with new CODs.

7 **Q. Can the Blue Marmots complete construction prior to the fourth quarter of**
8 **2023?**

9 **A.** Yes; however, an order providing COD relief would need to come prior to the
10 expected resolution of this proceeding. If it were possible to resolve this matter in
11 the next several months, by late April 2020, it would still be possible to achieve
12 CODs at the end of 2022. This timing is based on schedule dependencies relating
13 to environmental study seasonal considerations, permitting timelines and weather-
14 related construction windows. The Blue Marmots are willing to work with PGE
15 to execute PPAs prior to the end of April 2020 which would allow for achieving
16 CODs by December 2022. Absent any compromise or agreement with PGE in the
17 near future, the 2022 CODs will become unachievable and the Blue Marmots will
18 need CODs in September to December 2023.

19 **III. DEVELOPMENT PLAN FOR PROJECTS AT TIME OF PPA**
20 **EXECUTION**

21 **Q. Prior to PGE refusing to countersign the PPAs, were the Blue Marmots**
22 **planning on reaching the CODs in those PPAs?**

23 **A.** Yes. At the time the Blue Marmots executed the PPA's in March 2017 they had
24 plans in place to complete development and reach commercial operations for all
25 five projects by the CODs listed in those PPAs. Given the staggered CODs the

1 projects are currently requesting, it may be helpful to explain the rationale behind
2 the CODs that the projects originally selected, which were November 30, 2019 for
3 Blue Marmot V and VI and March 30, 2020 for the remaining 3 projects. For the
4 Schedule 201 standard rate PPA contracting process that was in place at the time
5 these projects were originally requesting PPAs from PGE, these projects had to
6 indicate requested CODs early in the initial stages of providing project
7 information. Ultimately a project could select a COD as far out as 3 years from
8 the effective date of the contract. However, early in the Schedule 201 contracting
9 process, particularly for Blue Marmot V and VI, which were the first two Blue
10 Marmot projects to move through the contracting process, it was unknown how
11 long it would take to receive executable PPAs and establish contract effective
12 dates. Early in the contracting process for Blue Marmots V and VI it seemed
13 achievable to execute PPAs by November 2016, so the projects selected
14 November 2019 for CODs to leave as much time as possible to complete
15 development given that they were early stage projects at that time. Later it
16 became clear that the projects were unlikely to execute PPAs by November 2016.
17 However, the understanding of the projects was that PGE would interpret
18 requesting new CODs as material changes that would further delay contract
19 execution and the projects did not want to delay obtaining executable PPAs in
20 order to obtain later CODs. In light of this understanding the projects chose to
21 leave the November 2019 CODs despite the fact that with contract execution in
22 March 2017, they could have selected CODs for as late as March 2020 under the
23 terms of those contracts. The subsequent 3 Blue Marmot projects, which were

1 able to benefit from the learning experience of the first 2 Blue Marmot projects
2 regarding Schedule 201 contracting process and timeline, selected March 2020
3 CODs that aligned better with the anticipated contract execution date. See
4 attached Exhibit Nos. Blue Marmot/901 to Blue Marmot/905 for the PPAs for all
5 5 projects as executed by the Blue Marmots.

6 **Q. Without litigation, the Blue Marmots had reasonable plans in place to meet**
7 **their scheduled CODs in their partially executed PPAs, correct?**

8 **A.** Yes. Based on the development work completed to date when the Blue Marmots
9 executed their PPAs in March 2017, they had plans in place to reach commercial
10 operations by the dates in those PPAs. I will describe the basis for these plans
11 across the interconnection and transmission scopes and then permitting and
12 construction.

13 **Interconnection and transmission**

14 **Q. What were the Blue Marmots' interconnection and transmission plans prior**
15 **to and at the time the Blue Marmots executed the PPAs?**

16 **A.** At the time the Blue Marmots executed their PPAs on March 29, 2017, they had
17 just received Feasibility Study results originally dated March 15, 2017 for the
18 interconnection requests they had submitted to PacifiCorp.⁴ See Exhibit Blue
19 Marmot/906 for these Feasibility Study results. Note that PacifiCorp studied the
20 projects collectively, so that even though the study process culminated in

⁴ The interconnection process typically involves three increasingly detailed studies, each completed successively after the last study was completed and after the interconnection customer and the utility execute an agreement to perform the study. The studies include the Feasibility Study, System Impact Study, and Facilities Study, but sometimes the Feasibility Study is skipped. Each study agreement typically requires the interconnection customer to submit a deposit to cover the full cost to perform each study. Once those are complete the utility will provide an interconnection agreement.

1 interconnection agreements for each project, at each stage of the interconnection
2 process a single study covered all the projects.

3 **Q. Did the Blue Marmots attempt to align the interconnection process with the**
4 **scheduled CODs in the PPAs?**

5 **A.** Yes. The interconnection requests for the projects had asked for CODs of
6 November 30, 2019, meaning that the projects had asked PacifiCorp to evaluate
7 the feasibility of completing work necessary to safely place the projects in service
8 and achieve commercial operations by that date. Given that the projects would
9 share certain interconnection facilities, it made sense to request that PacifiCorp
10 complete required interconnection work in time to meet the earliest Blue Marmot
11 COD of November 30, 2019. In the Feasibility Study results PacifiCorp
12 concluded that “the time required to perform the scope of work identified in this
13 Report appears to result in a timeframe that may support the Interconnection
14 Customer’s requested commercial operation date of November 30, 2019.” It is
15 common that as projects move through subsequent stages of the interconnection
16 process after the Feasibility Study, which is the initial step, estimated
17 interconnection schedules become more precise. For example, by the time the
18 Blue Marmot projects received their Facilities Study results dated December 5,
19 2017, PacifiCorp provided a milestone schedule for interconnection of the
20 projects that supported a November 30, 2019 COD. See Exhibit Blue
21 Marmot/907 for Facilities Study results. Section 4 will explain in greater detail
22 how the interconnection plan for the projects evolved during the course of this
23 proceeding before the Commission following Blue Marmot PPA execution.

24

1 **Q. Please provide additional information regarding the Feasibility Study as it**
2 **relates to the COD schedule and timing.**

3 **A.** Although they do not bear directly on interconnection schedules and COD timing,
4 there are several points in the Feasibility Study results that may be helpful to
5 briefly explain at this point. The first is the fact that the study results reference
6 six Blue Marmot entities, including Blue Marmot XI, which is not a party to the
7 present proceeding. At the time of submitting interconnection requests, EDPR
8 NA anticipated that it might be possible to successfully develop a sixth Blue
9 Marmot project (Blue Marmot XI) that was later deemed not to be viable.
10 Second, and related, is the fact that the studies were for 63 megawatts (“MW”)
11 across these 6 entities, including 13 MW for Blue Marmot VIII.⁵ Sixty three MW
12 was the total amount of injection capacity that the Blue Marmots understood to
13 exist on the 115kv transmission network in this part of PacifiCorp’s system based
14 on transmission study results received prior to submitting interconnection
15 requests. The Blue Marmots submitted interconnection requests for 63 MW to
16 make full use of this available transmission capacity on PacifiCorp’s network,
17 with the capacity in excess of 10 MW for Blue Marmot VIII to later be reduced to
18 that amount. These interconnection requests were originally submitted in
19 November and were deemed complete by PacifiCorp later that month, with the
20 Feasibility Study results being the first study results received by the projects from
21 PacifiCorp.

22

⁵ The project’s nameplate capacity would not exceed 10 MW. PacifiCorp would not allow for reducing the officially studied amount of interconnection capacity but would allow for building project capacity less than the studied amount.

1 **Q. Please summarize the process to obtain transmission on PacifiCorp's system.**

2 **A.** As indicated above, work to understand transmission capacity available for the
3 projects and to pursue transmission service agreements for the projects preceded
4 the submittal of interconnection requests to PacifiCorp. EDPR NA began
5 assessing transmission capacity in this area via transmission service requests to
6 PacifiCorp starting in Q3 2016. At the time of PPA execution on March 29, 2017,
7 EDPR NA had just executed transmission service agreements for 20 MW on
8 March 28, 2017, in the form of 2 separate transmission service agreements
9 (“TSAs”) for 10 MW. See Exhibits Blue Marmot/908-912 for executed
10 transmission service agreements. Those two TSAs contemplated start of service
11 on June 1, 2019. EDPR NA selected this date, which was prior to the earliest
12 requested Blue Marmot COD of November 30, 2019 to provide buffer in case
13 some amount of Blue Marmot capacity was prepared to come online earlier than
14 November 30, 2019. In addition to the 20 MW of executed TSA capacity at the
15 time of PPA signing, EDPR NA also had line of sight to securing transmission
16 arrangements for the remaining Blue Marmot capacity. Because of the manner in
17 which EDPR NA had submitted a series of transmission service requests,
18 PacifiCorp had already communicated the total amount of transmission capacity
19 available in this area. Because no other entities had submitted intervening and
20 competing transmission service requests, as of March 29, 2017, EDPR NA
21 anticipated being offered TSAs for the remaining Blue Marmot capacity in early
22 May. Indeed, EDPR NA was tendered those TSAs as anticipated and signed them
23 on March 15, 2017. Exhibits Blue Marmot/908-912 referenced above contains
24 TSAs for the full 50 MW of Blue Marmot capacity. All the TSAs have the same

1 start of service date of June 1, 2019. Additionally, it is perhaps worth noting that
2 the TSAs do not reference any network upgrades required to be completed to
3 enable the service, i.e. delivery of 50 MW from PACW to PACW.PGE. The
4 facilities and network upgrades described in the interconnection agreements for
5 the Blue Marmot projects to facilitate their interconnection therefore represent the
6 full extent of work required to deliver their output to PACW.PGE with no
7 incremental work required to achieve the latter.

8 **Q. Please summarize the interconnection and transmission status at the time of**
9 **PPA execution.**

10 **A.** At the time the Blue Marmots signed their PPAs in March 2017, they had clear
11 interconnection and transmission plans in place that were compatible with
12 achieving commercial operations by the earliest COD in the Blue Marmot PPAs,
13 i.e. November 30, 2019.

14 **Permitting**

15 **Q. What were the Blue Marmots' permitting plans prior to and at the time the**
16 **Blue Marmots executed the PPAs?**

17 **A.** Similar to the situation for interconnection and transmission, in the area of
18 permitting, at the time the Blue Marmots signed their PPAs in March 2017, they
19 had plans for reaching commercial operations by the CODs in the PPAs. EDPR
20 NA had begun speaking with Lake County about permitting the projects by
21 October 2016. Discussions with the Lake County Planning Department
22 contemplated permitting the projects via a conditional use permit ("CUP")
23 process through the County. Based on discussions with the County, the Blue
24 Marmots believed that the total time required to secure CUPs for the projects
25 would be no more than 8 months, with that likely being on the conservative side.

1 As shown in Exhibit Blue Marmot/913, which shows communications with Lake
2 County's Planning Director in April 2017 regarding plans to submit CUP
3 applications for the projects, this was the intention of the Blue Marmots when
4 signing PPAs in March 2017. Specifically, the projects were planning to submit
5 CUP applications in approximately June 2017. An 8-month schedule for
6 permitting would have implied receipt of CUPs by January 2019.

7 **Construction**

8 **Q. What were the Blue Marmots' construction plans prior to and at the time the**
9 **Blue Marmots executed the PPAs?**

10 **A.** The primary remaining schedule driver in the original plans for the projects was
11 construction. With permitting expected to conclude in Q1 2019, the projects
12 intended to wait several months to start construction in Spring of 2019. The
13 projects intended to wait until the end of winter to start construction because
14 many construction activities would be technically challenging and therefore
15 significantly more expensive during winter conditions with temperatures
16 frequently below freezing causing frozen soil conditions. Examples of the more
17 expensive and difficult work to complete during the winter include driving piles
18 to install racking equipment and panels, trenching for installing underground
19 cabling, and erecting poles overhead cables. All 5 projects targeted reaching
20 commercial operations before the end of 2019. In the case of Blue Marmot V and
21 VI this would mean either meeting their PPA CODs of November 30, 2019 or
22 potentially using a month of the 12 months of cure period allowed under the
23 PPAs. In the case of Blue Marmot VII, VIII and IX the projects targeted coming
24 online several months ahead of the March 30, 2020 CODs in their PPAs. The

1 Blue Marmots have interpreted the PPAs provided by PGE as allowing them to
2 start delivering net output any time after the effective date of the PPA. This
3 understanding has been reinforced by PGE's position that the 15-year term of
4 fixed prices begins at the effective date of the contract form that was in existence
5 in April 2017. We understand that the Commission has directed PGE to provide
6 the Blue Marmots with the current contract form, which provides that the 15-year
7 fixed price term begins at the scheduled COD. This provides greater incentive to
8 a QF developer to accurately set its scheduled COD, in part because the QF is
9 paid a lower price (the off-peak price) if it comes online earlier than the scheduled
10 COD. This is one factor to support providing the Blue Marmots with as accurate
11 as possible CODs, based on the Blue Marmots' current and reasonable plans for
12 construction of the projects.

13 **Q. Please summarize the Blue Marmots' permitting and construction plans at**
14 **the time of PPA execution.**

15 **A.** When the Blue Marmots signed their PPAs in March 2017, they had permitting
16 and construction plans in place that were compatible with achieving commercial
17 operations by no more than 1 month into the 12 month cure period allowed under
18 the PPAs and, in the case of several projects, several months ahead of the CODs
19 in their PPAs.

20 **IV. DEVELOPMENT OF BLUE MARMOT SCHEDULE DRIVERS**
21 **SUBSEQUENT TO PPA SIGNING**

22 **Q. Please summarize this section of your testimony.**

23 **A.** This portion of my testimony will describe how development of the Blue Marmot
24 projects evolved during the course of this proceeding before the Commission,
25 with a particular focus on areas with significant implications for project schedules

1 and achievable CODs and following a similar structure and sequence across
2 interconnection, transmission, permitting and construction topics as Section 3
3 above. This section of testimony explains how litigation caused commercially
4 reasonable delays in the scheduled commercial operation dates listed in the Blue
5 Marmots' partially executed PPAs.

6 **Interconnection and transmission**

7 **Q. What happened next in the interconnection process after PGE refused to**
8 **counter sign the PPAs?**

9 **A.** In the area of interconnection, after receipt of the Facilities Study results
10 mentioned in Section 3, the next step in the interconnection process was receipt of
11 small generator interconnection agreements ("SGIA") tendered to the Blue
12 Marmots by PacifiCorp dated January 29, 2018. These SGIAs as tendered by
13 PacifiCorp are shown in Exhibits Blue Marmot/914-918. Due to schedule
14 slippage in the time elapsed between the Facilities Study results and the tendered
15 SGIAs, the latter show a COD of December 31, 2019 in order to accommodate
16 the engineering, procurement and construction work required by PacifiCorp to
17 interconnect the Blue Marmot projects. However, to achieve this timing, the
18 projects would have had to post financial securities with PacifiCorp starting
19 March 12, 2018 to begin funding design, engineering and procurement of the
20 facilities and upgrades required to interconnect the projects. Given that at this
21 point in time the Blue Marmots did not see an imminent resolution of UM 1829 et
22 al. as likely, the projects began indicating to PacifiCorp that they would likely
23 seek to revise the COD contemplated in their SGIAs to a later date. As explained
24 in the Introduction, funding millions of dollars of interconnection work "at risk"

1 without visibility into offtake agreements would not be an acceptable risk for
2 EDPR NA to take. However, the Blue Marmots also continued to advance
3 negotiations with PacifiCorp in the months after being tendered their draft SGIA's
4 to pursue resolution on several technical points where EDPR NA sought
5 clarifications or adjustments to certain provisions of the SGIA's.

6 **Q.** [REDACTED]

7 **A.** [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED] at the end of June 2018

13 EDPR NA decided to ask PacifiCorp to formally conduct any re-studies necessary
14 to accommodate changing the interconnection plan of service to accommodate 50
15 MW of generation co-located at a single site, rather than each 10 MW of
16 generation separated by at least 5 miles, as contemplated by the original SGIA's.

17 See attached Exhibit Blue Marmot/919 for the communication to PacifiCorp

18 making this request. [REDACTED]

19 [REDACTED]

20 **Q. What happened next?**

21 **A.** After receiving updated study results from PacifiCorp dated September 25, 2018
22 and January 7, 2019 the Blue Marmots were tendered revised SGIA's by
23 PacifiCorp reflecting this revised configuration for 50 MW of co-located

1 generation dated July 31, 2019.⁶ See Exhibits Blue Marmot/920-924 for these
2 revised draft SGIAs. EDPR NA worked through several months of negotiating
3 revisions to these SGIAs with PacifiCorp and ultimately signed the SGIAs on
4 September 27, 2019. See Exhibits Blue Marmot/925-929 for these executed
5 SGIAs. The milestone schedule in the executed SGIAs supports project CODs of
6 June 30, 2022; however, Section 5 will explain why these SGIAs do not actually
7 support a June 2022 COD for the original 5 x 10 MW configuration. The timing
8 of earliest achievable CODs under the SGIAs is driven primarily by the timing for
9 the start of engineering work. The rationale for the Blue Marmots' decision to
10 negotiate with PacifiCorp to delay the start of engineering until May 2020 despite
11 the execution of the SGIAs in September 2019 bears further explanation.

12 **Q. Please explain.**

13 **A.** Total estimated costs for interconnection facilities and network upgrades to be
14 completed to achieve interconnection of the Blue Marmots per the scope of work
15 identified in the SGIAs totals approximately \$6.4 million. Approximately \$5.3
16 million of this would be reimbursable to the projects, but only in the form of
17 credits against charges for transmission service that the projects would otherwise
18 pay for delivery of their net output over the PacifiCorp transmission system to
19 PACW.PGE. However, these reimbursements would only be realized if the
20 projects were built. This is reflected in PacifiCorp's Open Access Transmission
21 Tariff in 5.2.1 of Appendix 9 of Attachment O, the Small Generator
22 Interconnection Agreement, effective May 15, 2018. As described above, the

⁶ This interconnection plan of service essentially moves the 5 x 10 MW projects to all be adjacent to one another, which is why it remains a collection of SGIAs.

1 Blue Marmot projects would never be built without viable PPAs in place to
2 generate a predictable stream of revenue. So deciding to fund interconnection
3 facilities and network upgrades prior to securing viable PPAs would mean
4 spending approximately \$6.4 million on the hope that favorable PPAs could be
5 obtained. This would not be a commercially reasonable decision for the Blue
6 Marmots to make. Given this magnitude of costs, the Blue Marmots sought to
7 delay the point at which they would have to start funding this work to defer any
8 material outlay until after commercial resolution for the projects was achieved.
9 Because the Commission had not released Order No. 19-322 at the time that the
10 Blue Marmots were negotiating the SGIAAs with PacifiCorp in July and August
11 2018, the projects had to select a date to start incurring these costs without
12 knowledge of the likely timing or content of any Commission order in this
13 proceeding.

14 PacifiCorp's small generator interconnection practices only allow for very
15 limited flexibility in adjusting milestone schedules following the execution of
16 SGIAAs. Unlike LGIAAs, PacifiCorp does not allow for suspension of executed
17 SGIAAs to allow the deferral of engineering and procurement work and associated
18 significant costs. Additionally, they only allow for a single revision to the
19 milestone schedule in an executed SGIA, in the direction of delaying milestones
20 rather than accelerating them. Since the Blue Marmots would only have one
21 chance to revise milestone schedules, they selected May 2020 for the start of
22 engineering spend to leave a reasonable amount of time to conclude all UM 1829
23 proceedings, since it would be difficult for the projects to use their one revision

1 and permanently lock in their milestone schedule before knowing the outcome of
2 UM 1829. The Blue Marmots expected that by May 2020 the Commission would
3 have issued an Order granting COD relief and the projects could then, prior to the
4 May 2020 date, provide updated milestone schedules to PacifiCorp aligning with
5 the new CODs. For these reasons, it was commercially prudent for the Blue
6 Marmots to delay the start of engineering until May 2020 in their executed
7 SGAs. It's worth noting that, with an expected resolution to this Phase II
8 proceeding well after May 2020, the Blue Marmots will be in the difficult position
9 of needing to lock in an interconnection schedule without having resolution on the
10 CODs in their PPAs. Section 5 describes what this timing might look like and
11 why the current June 2022 COD milestone schedule likely does not actually
12 support that COD timing.

13 **Q. Please explain how the PPA litigation impacted obtaining PacifiCorp**
14 **transmission.**

15 **A.** The next area of significant development following the Blue Marmots signing
16 their PPAs has been in transmission. As indicated above, shortly after the Blue
17 Marmots signed their PPAs, as expected, they were offered TSAs by PacifiCorp
18 for their remaining capacity beyond the 20 MW of transmission service that had
19 been signed by EDPR NA in March 2017. In May 2017 EDPR NA signed TSAs
20 for this remaining capacity, as shown in the TSAs in Exhibits Blue Marmot/908-
21 912. Those TSAs were also for start of service in June 2019. Because none of
22 the TSAs executed by EDPR NA for delivery of the Blue Marmot net output
23 contemplate any network upgrades, they are not direct schedule drivers
24 themselves. However, net output from the projects cannot be delivered if

1 facilities and upgrades to enable interconnection have not been completed. So in
2 this case the earliest achievable start of transmission service is the same as the
3 earliest achievable COD that the interconnection schedule supports.

4 **Q. Does EDPR NA incur transmission costs associated with the delays in this**
5 **litigation?**

6 **A.** Yes. One important note regarding the timing of start of transmission service, is
7 that while it cannot start in a functional sense earlier than the interconnection
8 schedule supports, it does have a defined start date that corresponds to the start of
9 payment for the service. As mentioned above, the TSAs executed by EDPR NA
10 on behalf of the Blue Marmot projects were for start of service in June 2019. It is
11 possible to defer the start date of transmission service in monthly intervals by up
12 to one year at a time, but there is a fee for doing so equivalent to one month of
13 service, or at least approximately \$136,000 for 50 MW. In June 2019, the Blue
14 Marmots incurred this cost to defer their transmission service. They will defer the
15 start of service and incur this cost again (adjusted for annual changes in the cost
16 of PacifiCorp transmission service) in June 2020 and June 2021, and perhaps
17 again in June 2022 depending on the course of this proceeding and the ultimate
18 CODs for the projects. Thus, delays from the litigation will likely cost EDPR NA
19 about a half a million dollars in deferred transmission service alone.

20 **Permitting**

21 **Q. In addition to interconnection and transmission, have the Blue Marmot**
22 **projects made significant efforts to advance work on permitting and**
23 **associated studies?**

24 **A.** Yes. Shortly following execution by the Blue Marmots of their PPAs, the
25 projects initiated a range of environmental studies to support permitting of the

1 projects. These included wildlife field surveys, wetland delineations and
2 preliminary cultural resource surveys. This work took place between April and
3 June of 2017 at an estimated cost of roughly \$300,000.

4 **Q. Have there been any changes in the permitting process?**

5 **A.** Yes. In the course of preparing CUP application materials for Lake County and
6 evaluating options for permitting the projects individually or collectively, it was
7 brought to the attention of the Blue Marmots that the projects might be considered
8 to fall under the jurisdiction of the Energy Facility Siting Council (“EFSC”) under
9 the Oregon Department of Energy (“ODOE”). EFSC is responsible for
10 overseeing the development of large electric generating facilities within the state
11 of Oregon, as well as other facilities such as high voltage transmission lines, gas
12 pipelines and other energy infrastructure projects. After extensive internal
13 discussions, as well as preliminary consultations with ODOE, it was determined
14 that the projects would be more appropriately permitted collectively through
15 EFSC rather than through a Lake County CUP process. The reason was that
16 based on the shared interconnection facilities and ownership of the projects, they
17 could be considered a single facility from the perspective of EFSC jurisdiction
18 and in aggregate would impact more than the 320 acre threshold for EFSC
19 jurisdiction in effect at the time this decision was made.

20 **Q. What happened next?**

21 **A.** After making this decision, the projects began preparing a Notice of Intent
22 (“NOI”), which states an applicant’s intent to submit an application for site
23 certificate and provides information about the project to allow EFSC and other
24 reviewing agencies to identify applicable requirements and any particular issues

1 that an applicant should address in its application. The projects eventually
2 submitted an NOI to EFSC in January 2018. See attached Exhibit Blue
3 Marmot/930 for the Blue Marmot NOI.⁷ This was about nine months after filing
4 the complaints against PGE, and shows that, despite the uncertainty associated
5 with the litigation, the Blue Marmots were making reasonable efforts to be able to
6 timely construct the projects if the Commission issued a favorable order.

7 **Q. How did this impact the schedule for completion of the projects?**

8 **A.** At the time the Blue Marmots submitted their NOI, they set an outside date for
9 start of construction by February 2020 such that in the worst case from a schedule
10 perspective, they would have time to complete construction during 2020 before
11 expiration of the 1-year periods starting November 2019 for Blue Marmots V and
12 VI. In the best case the projects targeted roughly 12 to 14 months to receipt of a
13 site certificate from submittal of NOI to allow for start of construction in Spring
14 2019 to reach commercial operations by the November 2019 CODs in the PPAs.

15 **Q.** [REDACTED]

16 **A.** The NOI submitted in January 2018 provided flexibility to pursue either the
17 original 5 x 10 MW project configuration or a co-located project of similar
18 capacity, [REDACTED] in the
19 event that the original PPAs for the Blue Marmots were never mutually executed.
20 [REDACTED] the Blue Marmots started
21 to slow their work with ODOE in the hopes that commercial resolution with PGE
22 would give the Blue Marmots a clear picture of the projects and associated

⁷ The 60 MW capacity referred to in the NOI was intended to preserve flexibility and future options.

1 configurations for which they had offtake arrangements. The Blue Marmots
2 sought to control permitting expenditure and maximize credibility with permitting
3 authorities by slowing permitting efforts until the Blue Marmots' footprint had
4 been finalized, rather than attempting to permit a footprint covering multiple
5 hypothetical configurations. Total costs to permit through EFSC (excluding study
6 costs) are estimated at \$700,000, so it is very reasonable for the Blue Marmots to
7 only seek permitting of a finalized project footprint and to not pursue
8 "speculative" permitting on footprints that might change with commercial
9 arrangements. In addition, the Blue Marmots delayed the completion of
10 remaining study work that would be required to complete permitting under EFSC
11 to avoid incurring these expenses given the commercial uncertainty.

12 **Q.** [REDACTED]
13 [REDACTED]

14 **A.** In November 2018 the Blue Marmots conveyed to ODOE staff that they would be
15 placing on hold their work with EFSC, and suspending the NOI submitted
16 January 2018.

17 **Q. What is the status of the permitting process?**

18 **A.** The most recent work with ODOE has been submitting a request in November of
19 2019 to extend the NOI. Normally the NOI would expire 2 years after submittal,
20 or in January of 2020. With the requested extension, the NOI would not expire
21 until January 2021, which would allow the Blue Marmots to resume permitting in
22 2020 without needing to restart the process with a brand new NOI. This will save
23 time on the permitting effort required for the projects going forward. EFSC

1 approved this extension in November 2019. See attached Exhibit Blue
2 Marmot/931.

3 **Q. Have there been any other external developments that impact the Blue**
4 **Marmots' permitting?**

5 **A.** Yes, there have been other permitting developments beyond specific project
6 developments. At the time the Blue Marmots submitted their NOI in January
7 2018 there was one solar project just about to receive its final site certificate in
8 February 2018 (Boardman Solar) and another project that had just submitted its
9 NOI (Obsidian Solar). Today in addition to Obsidian, there are two additional
10 large solar projects permitting via EFSC (Madras Solar and Bakeoven Solar).
11 Overall, there are growing amounts of solar under development and construction
12 in the Northwest and this has generally increased the number and levels of
13 engagement of stakeholders in project permitting. While this trend has been
14 positive from a community engagement perspective, it has generally made
15 permitting large-scale solar projects a more involved and time-consuming
16 process. As a result, the Blue Marmots now expect that an 18-month timeline for
17 completing permitting through EFSC represents a relatively aggressive schedule
18 to target for securing a site certificate from the point of resuming work.

19 **V. MAJOR DEVELOPMENT WORK AND ASSOCIATED TIMELINES FOR**
20 **BRINGING THE BLUE MARMOT PROJECTS ONLINE**

21 **Q. Please summarize this section of the testimony.**

22 **A.** In this section I will describe the main schedule factors that, going forwards, will
23 determine how quickly the Blue Marmots can achieve commercial operations.
24 This portion of the testimony justifies the 2023 dates that should be included in

1 the final executable PPAs that PGE must offer consistent with the final resolution
2 of all issues in this proceeding.

3 **Interconnection and transmission**

4 **Q. Please explain how interconnection and transmission issues justify the 2023**
5 **CODs.**

6 **A.** In the area of interconnection, in addition to the milestone schedule described in
7 Section 4 above, a key consideration is the fact that the latest SGIAAs tendered by
8 PacifiCorp and executed by the Blue Marmots contemplate a co-located 50 MW
9 configuration. To bring the Blue Marmot projects online under the original 5 x 10
10 MW configuration contemplated in the January 29, 2018 SGIAAs tendered by
11 PacifiCorp, it would be necessary to coordinate with PacifiCorp to revert the
12 SGIAAs back to the plan of service that PacifiCorp had designed in the originally
13 tendered SGIAAs. However, the Blue Marmots should wait to ask PacifiCorp to
14 make this change until it is clear that they will receive viable PPAs corresponding
15 to this plan of service. The reason is that there is very little commercial
16 opportunity in the current market for a geographically disparate cluster of 10 MW
17 projects, as this project capacity is too large to benefit from standard rate QF
18 contracts and too small to capture economies of scale required to price favorably
19 for competitive energy procurement solicitations. The original 5 x 10 MW
20 configuration was specifically designed for the commercial opportunity with PGE
21 available at the time the projects signed their Schedule 201 PPAs.

22 **Q. How long would it take to revert back to the 5 x 10 MW configuration?**

23 **A.** It is difficult to predict how long it would take PacifiCorp to complete this
24 revision back to the 5 x 10 MW configuration. Previously it took roughly 12

1 months for PacifiCorp to tender the Blue Marmots SGIA's following the projects'
2 request for reconfiguration. One might reasonably hope that a subsequent restudy
3 and revision process could move more quickly since the Blue Marmots would be
4 requesting a configuration that PacifiCorp has already studied, but this certainly
5 would not be guaranteed. For example, it's possible that PacifiCorp's recent work
6 to reform its interconnection queue procedures could delay or complicate efforts
7 by the Blue Marmot to revise their SGIA's. However, it would be reasonable to
8 assume that the roughly 24 months in the current SGIA's from the start of
9 engineering to COD would stay the same, with the milestones adjusted for the
10 amount of time required to revise and re-execute the SGIA's.

11 As explained above, it would not be commercially reasonable for the Blue
12 Marmots to request this revision until after receiving a Commission order in this
13 proceeding. If one assumes a Commission order in this proceeding in September
14 2020, and then assumes an additional 6 months of schedule to accomplish the
15 SGIA revision, March 2021 might be the soonest date for starting engineering
16 under SGIA's revised for the 5 x 10 MW configuration. Maintaining the 24-month
17 schedule between start of engineering and COD would arrive at a date for the
18 latter of March 2023. However, hitting a March 2023 COD would require
19 construction taking place throughout the Q4 2022 to Q1 2023 winter. As
20 described above, the position of the Blue Marmots is that this would not be a
21 commercially reasonable course of action. Also, it bears emphasizing again that
22 in the days leading up to May 2020, the Blue Marmots will need to make a major
23 interconnection decision with severely limited information. Specifically, even

1 though the Blue Marmots likely will not have an order in this Phase II proceeding,
2 they will face a choice between starting to incur major engineering spend under
3 the milestone schedule of the current SGIAs, or making a one-time election to
4 push out the milestone schedule. However, this choice to lock in a new milestone
5 schedule would be made without knowing how long it might take PacifiCorp to
6 revise the configuration of the SGIAs or how the present proceeding will be
7 resolved by the Commission. For this reason, it is commercially reasonable for
8 the Blue Marmot projects to approach this decision conservatively given they will
9 not be able to make further adjustments to the milestone schedule. As will be
10 explained below, permitting and construction timelines are the longest-lead work
11 areas leading to the September through December 2023 CODs requested. The
12 Blue Marmots should therefore seek to align their interconnection plans with
13 these permitting and construction timelines, which should be feasible.

14 **Q. Is there any different impact from transmission on the need for 2023 CODs?**

15 **A.** In the area of transmission, as above, the Blue Marmots will have to continue to
16 incur non-trivial costs to defer the start of their transmission service, but these
17 transmission arrangements themselves won't impose schedule constraints beyond
18 those imposed by interconnection.

19 **Permitting**

20 **Q. Please summarize the permitting work necessary to complete construction of**
21 **the projects.**

22 **A.** In the area of permitting, the development work driving the timeline on which the
23 Blue Marmot projects could reach commercial operations is twofold: 1)

1 completing outstanding permitting studies; and 2) securing a site certificate from
2 EFSC.

3 **Q. Please summarize the outstanding permitting studies.**

4 **A.** In general, the studies that must be completed are required by EFSC to establish
5 the “base case” of resources currently existing that would be impacted by a new
6 project, so that the extent of impact that a project would have on those resources
7 can be assessed and evaluated to determine if the project should be allowed to
8 proceed. Examples of these resources include habitat used by sensitive or
9 protected wildlife species, wetlands or other water features protected by the state
10 or federal governments, and historic or culturally significant artifacts or other
11 resources. Wildlife, wetland and cultural resource studies, respectively, are used
12 to assess the extent to which these resources are present in the area that would be
13 impacted by a project.

14 The studies remaining to be completed for the Blue Marmot projects can
15 be divided into two areas: 1) studies for the footprints of the 5 x 10 MW
16 generating areas (where the solar panels, racking equipment, inverters, etc. would
17 be located); and 2) studies for the linear corridors to be used for medium voltage
18 and high voltage transmission lines and access roads outside of the generation
19 areas. In the former category, the primary work remaining to be done is
20 completing cultural resource surveys. In the latter category, wetland delineations
21 and cultural resource surveys need to be conducted. Total estimated study costs
22 across these categories are approximately \$1 million. The position of the Blue
23 Marmots is that it isn’t commercially reasonable to incur this much expense “at
24 risk” prior to having visibility into PPAs for the projects. Rather, the Blue

1 Marmots should only incur these expenses if they know they have viable
2 commercial arrangements for the projects. In addition to study costs, there are
3 significant costs associated with EFSC permitting that cover the costs of
4 consultants to prepare materials on behalf of applicants, legal counsel to support
5 permitting, the labor time of ODOE staff and staff of other agencies who review
6 permit materials, etc. Estimated total expenses for going through the EFSC
7 process in addition to studies are about \$700,000.

8 **Q. Is it possible that additional studies could be required?**

9 **A.** Yes, while the projects have already completed wildlife studies for both the
10 generating areas and the linear features, it is possible that reviewing agencies in
11 the EFSC process will ask that these studies be redone to evaluate the impact of
12 the projects relative to more recent environmental conditions. The wildlife
13 studies that have been completed by the projects were completed in Spring 2017.
14 If this proceeding is not resolved until roughly September 2020, the projects
15 would be seeking permitting roughly 4 to 5 years after those studies were
16 completed, which might be long enough to trigger requests to “refresh” the
17 studies. If wildlife studies did have to re-done, the projects would not be able to
18 complete this work until the Spring 2021 study window (roughly April through
19 June) because of seasonal conditions required for observing environmental and
20 wildlife resources.

21 **Q. Does the expected timing of the ultimate Commission order (September**
22 **2020) have an impact on the studies that need to be completed?**

23 **A.** Yes. Even if the projects are able to rely on studies completed to date, there are
24 also seasonal considerations for the wetland delineation and cultural resource

1 surveys that it's clear the projects still have to complete. Similar to wildlife
2 studies, wetland delineation studies need to be conducted during certain times of
3 year when conditions are most appropriate for observing the features of wetland
4 areas, specifically between April and June. Cultural resource surveys cannot be
5 completed while snow is on the ground because these surveys involve visual
6 inspection of the ground to identify any evidence of cultural resources that might
7 be impacted by ground-disturbing activities, and in some cases establishing the
8 extent of those resources and evaluating their significance. If an order is not
9 received until September 2020, it's possible that the projects will not have time to
10 complete cultural resource surveys before snow in Lakeview starts for the Q4
11 2020 to Q1 2021 winter and that the projects would be precluded from completing
12 these studies until snow cover clears in Spring 2021. If the projects had certainty
13 regarding the CODs now, then the Blue Marmots would initiate these studies in
14 Spring 2020, so that they could be completed prior to the winter.

15 **Q. Is it possible that the Blue Marmots could start some of those studies now?**

16 **A.** Yes. The Blue Marmots are actively evaluating the possibility of conducting
17 some of these studies "at risk" to try to bring as much flexibility as possible to the
18 schedules for these projects.

19 **Q. Please explain the timing of the EFSC process.**

20 **A.** The remaining schedule driver in permitting is the EFSC process and how long
21 the constituent steps take and how their timing aligns with the timing of
22 completing required studies. The Blue Marmots would plan to "re-activate" their
23 NOI in September 2020 following an anticipated order, which would effectively
24 notify EFSC that the projects intend to resume work on permitting. Then, for the

1 reasons described above, the projects would not be able to complete their
2 remaining study work until Spring 2021. In the meantime, however, they would
3 be preparing an application for site certificate before and in parallel with that
4 study work, such that the application could be submitted and deemed complete by
5 May or June 2021. From the point of having an application deemed complete, the
6 Blue Marmots would expect to receive an EFSC decision in approximately 10
7 months, or by April 2022, followed by 6 months that would be prudently
8 budgeted to work through any appeals, which would result in a secure site
9 certificate by roughly October 2022.

10 **Construction**

11 **Q. Please summarize the construction work necessary to complete the projects.**

12 **A.** The final schedule driver is construction. Although construction could
13 theoretically start shortly following receipt of a site certificate, for the reasons
14 described above, the position of the Blue Marmots is that it would not be
15 commercially reasonable to build through the winter in Lakeview, Oregon, where
16 average lows for the months of November through April are close to or below
17 freezing, creating very difficult soil conditions for construction.

18 **Q. Can you provide more details about the construction process?**

19 **A.** Yes. The current working schedule for the projects assumes that mobilization for
20 construction takes place in May 2023 when soil conditions are anticipated to be
21 more favorable. The major scopes of work following mobilization include civil
22 works, trenching of DC cabling, installation of medium voltage cabling, driving
23 piles, installing racking equipment and modules, installing inverters, installing the
24 project substation and transmission line connection between the project substation

1 and the project's point of interconnection, and finally testing and commissioning
2 of all equipment.

3 **Q. Can you graphically show how all of these different elements impact the**
4 **schedule?**

5 **A.** Yes. Exhibit Blue Marmot/932 shows a Gantt chart of this schedule. With a
6 mobilization of construction in May 2023, construction can be completed over the
7 Summer and Fall, with the five projects coming online starting in September 2023
8 and following the staggered dates stated in the Overview section, with all five
9 projects online by December 7, 2023.

10 **VI. CONCLUSION**

11 **Q. Please summarize your testimony.**

12 **A.** This litigation caused commercially reasonable delays in the Blue Marmots'
13 scheduled commercial operation dates listed in their partially executed PPAs. The
14 Commission should extend the Blue Marmots' scheduled commercial operation
15 dates and PGE should be required to provide PPAs with commercial operation
16 dates in September to December 2023.

17 **Q. Does this conclude your testimony?**

18 **A.** Yes.