DOCKETED	
Docket Number:	23-AFC-03
Project Title:	Black Rock Geothermal Project (BRGP)
TN #:	258930
Document Title:	Exhibit G UAW comments on Black Rock Geothermal Project PSA
Description:	N/A
Filer:	Matthew Maclear
Organization:	Aqua Terra Aeris Law Group
Submitter Role:	Intervenor Representative
Submission Date:	9/4/2024 1:48:16 PM
Docketed Date:	9/4/2024

Exhibit G

UAW Comments on Black Rock Geothermal Project PSA

Other Application Types

Step 1 | Step 2 | Step 3

Instructions: Please enter the information requested in the white boxes below or select from the choices in the blue drop-down list. When requested, please explain calculations and assumptions used. If actual values are not known, good faith estimates are acceptable. All Applicant-provided values may be subject to verification.

C. Facility Information		
C1	**Value of capital stock used to produce Qualified Products.** Enter the total value of all equipment and tangible personal property used to produce the output listed in Box D2 below. This should equal the value of anticipated Qualified Property purchases plus any existing capital stock. Do not include the value of land and structures. Value should be in current dollars inclusive of depreciation.	$188,422,290
	If the total value of capital stock does not equal the total Qualified Property amount, provide a description the additional assets included in the calculation, as well as their values.	
C2	**Projected average number of employees (FTE) at Facility, assuming Qualified Property is utilized.** Enter the estimated average number of employees employed each year to produce the output listed in Box D2 below, averaged over the Estimated Useful Lifespan of the Qualified Property (see Qualified_Property_List), taking into account any ramp up periods. Value should be in annual full time equivalents (FTE); part-time employees should be counted as a fraction of a full time employee. Do not include construction related FTEs.	37.00
	Explain the values and assumptions (with calculations if relevant) used to arrive at the value in C2 above.	Twenty plant controller and operators for the geothermal resource and power plant facility; two managers; two engineers; four maintenance technicians;one chemist; one instrumentation and electrical technician; one procurment specialist; one geoscientist; one environomental professional; one safety professional; three administrative professionals; this level of staffing is similar to the existing geothermal resource and power facilitiesthat operate 24 hours a day
C2.1	**Projected average number of employees (FTE) at Facility, assuming Qualified Property is not utilized.** Enter the estimated average number of employees to be employed each year if the Qualified Property is not purchased. Value should be in annual full time equivalents (FTE); part-time employees should be counted as a fraction of a full time employee. Do not include construction related FTEs.	0.00
	Explain the values and assumptions (with calculations if relevant) used to arrive at the value in C2.1 above.	Facility would not be constructed or operated without Qualified Property
C3	**Projected number of employees (FTE) employed for purposes of constructing facility or installing Qualified Property.** Enter number of construction-related jobs used to build the production facility or install equipment. Do not include jobs associated with the on-going production of the Qualified Product(s). Value should be in annual full time equivalents (FTE); part-time employees should be counted as a fraction of a full time employee. Construction FTEs need not be directly employed by the Applicant; include all construction jobs used to build the Project.	565.24
	Explain the values and assumptions (with calculations if relevant) used to arrive at the value in C3 above.	The average annual number of FTE workers employed during facility construction is 246.95 FTE (per year) with an additional 35.67 FTE (per year) workers supporting well drilling. These FTE workers are average over a 24-month construction period and will work 24 hours a day. (246.95+35.67)*2 = 565.24
D. Product Information		
D1	**Brief description/name of product to be produced with Qualified Property.** Please provide a brief (<25 words) description of the product to be made with the Qualified Property.	Alternative source fuel capture, processing and production equipment for the geothermal resource production facility and wells. Captured and processed geothermal resources will subsequently be used in electric power generation (qualified property is exclusive of any property associated with the subsequent generation of electricity).
D2	**Projected average annual number of Qualified Products to be sold or shipped (number of units).** Enter total estimated average annual facility production that will be sold or shipped, assuming Qualified Property is utilized. Entry should reflect average annual sales over Estimated Useful Lifespan of the Qualified Property (i.e. should reflect any ramp up period and not just peak production). If units of multiple sizes or capacities are produced, enter the average value here or a standardized value (e.g. 1 watt of generation capacity for a solar panel). **Note that units must be consistent throughout Sections D and E.**	18,378,434
	Define the unit used and explain the values and assumptions (with calculations if relevant) used to arrive at the value in D2 above.	Metric Million British Thermal Unit (MMBTU); 394.09 BTU/lb x 80,000 lbs/hr/MWnet x 70 MWnet x 24 hrs x 365.25 days x 95% capacity x 1MMBTU/1,000,000 BTU
D3	**Projected per unit sales price in dollars**. Enter the average sales price of the product/component you are producing. If multiple products are produced, enter the average across all Qualified Products.	$3.63
	Explain the values and assumptions (with calculations if relevant) used to arrive at the value in D3 above.	Revenues for the brine and steam sales are based on the current financial model for project and demand generated by California Public Utilities Commission ("CPUC") Decision 21-06-035. Projected annual revenue generated by electricity sales is multiplied by the ratio of [0.6733], equivalent to ((Capital Cost of the Resource Production Facility + wellfield)/total capital cost) divided by the annual MMBTU output [18,378,434] to yield $3.63 per MMBTU.
D4	**Per unit production-related purchases from suppliers, assuming Qualified Property is utilized/installed, in dollars**. Include cost of materials, parts, containers, packaging, energy consumed, and products bought and sold without further processing. If multiple products are produced, enter the average across all products here. Entry should reflect average value over Estimated Useful Lifespan of Qualified Property. This information is used to calculate the value added by the Applicant.	$0.73

Other Application Types

	Explain the values and assumptions (with calculations if relevant) used to arrive at the value in D4 above.	Operating and maintenance (O&M) costs support product production through support activities for both the Resource Production Facilities (RPF) and the Power Generation Facility (PGF). O&M support of the RPF includes activities for wells, cross county pipeline, pressure vessels, clarifiers and filter press. Support of the PGF includes activities on the turbine, generator, condenser, cooling tower and gas removal equipment. The RPF handles the scaling and corrosive brine, which require significantly more maintenance, chemicals and operational support than steam handling and power generation equipment in the PGF. An evaluation of the 15-years of O&M costs (2004 thru 2019) yielded an average O&M expense per MW, which was converted to a cost per MMBTU. Further evaluation identified an long-term average expenditure ratio of 25% towards PGF and 75% RPF. The formula is (average O&M cost/MW x 75%) / annual MMBTU production.
D5	**Estimated percent of production costs from California suppliers.** Estimate the fraction of the total production-related costs (from Box D4) from California suppliers. Entry should reflect average value over Estimated Useful Lifespan of Qualified Property.	30%
	Explain the values and assumptions (with calculations if relevant) used to arrive at the value in D5 above.	Chemicals, cooling tower and spare parts are the drivers for this cost and are purchased in California. Some of the tangibles are purchased from supplies outside of California.
D6	**Projected per unit labor costs, assuming Qualified Property is utilized**. Include total per unit salary costs. Do not include payroll taxes, fringe benefits, or other non-salary costs. Entry should reflect average value over Estimated Useful Lifespan of Qualified Property.	$0.21
	Explain the values and assumptions (with calculations if relevant) used to arrive at the value in D6 above.	Based on a project average annual salary of $106,378 per employee, annualized labor costs is $3,935,986 divided by 18,378,434 MMBTU
D7	**Estimated percent of total product sales in California**. Enter the estimated percent of total sales to California customers. Value should be calculated over the Estimated Useful Lifespan of the Qualified Property.	100%
	Explain the values and assumptions (with calculations if relevant) used to arrive at the value in D7 above.	Targeted customers are California's investor owned utilities, community choice aggregators, municipal utilities,and State of California
D8	**Expected useful life of product, in years**. Enter the number of years that the product is expected to last.	1
D9	**Is the product a sub-component of a Qualified Product?** For example, if the product produced with the Qualified Property is a battery pack for an electric car drive train, enter "Yes" here. If the product is an end of supply chain product enter "No" here. (Note that cells in the rows below are intentionally shaded when "No" is selected in the box at right.)	No
D10	**What is the total value of the efficiency or energy generation component of the end of supply chain product?** For example, if the product is a battery pack for an electric car, enter the value of the electric drive train here and the value of the battery pack in box D3 above.	$
	Explain the values and assumptions (with calculations if relevant) used to arrive at the value in D14 above.	
D11	**Estimated percent of total end of supply chain product sales in California?** Enter the estimated percent of the end product's total sales to California customers. Value should be calculated over the Estimated Useful Lifespan of the Qualified Property.	
	Explan the values and assumptions (with calculations if relevant) used to arrive at the value in D15 above.	
D12	**Does the end-of-supply-chain product generate California sales tax when purchased by the end user?** Sales to the Federal Government, production for use in research and development or for internal company use, or sales/production not otherwise sold to consumers do not generate sales tax. (Select from list)	No
D12.1	**Estimated percent of end-of-supply-chain product sales that generate sales tax?** Enter the percent of sales/production that generates sales tax.	
	Explain the value and assumptions (with calculations, if relevant) used to arrive at the value in D16.1	
E. Environmental Impact		
E23	**Description of environmental benefits.** Please provide a brief (<25 words) description of the environmental benefits produced by a unit of your product.	Geothermal steam to produce electrical power is compared to current California grid emissions from eletrical power.
E24	**Annual value of pollution benefits per unit.** Enter the annual dollar value of allowable pollution benefits per unit.	$0.25
	Explain the calculations and assumptions used.	Black Rock's geothermal power will emit 3.56 pounds (lbs) of CO2 per MMBTU, equivalent to 112.24 lbs/MWh; whereas current CA grid emits 420 lbs of CO2 per MWh. This results in a net reduction of 307.76 lbs of CO2 per MWh, equivalent to 9.7617 lbs of CO2 per MMBTU. The formula therefore is 9.7617 x $0.025146 = $0.25/MMBTU (product unit).
E25	**Annual cost of off-setting energy use per unit.** Enter the annual dollar value of any off-setting energy pollution costs from the production of one unit.	$0.00
	Explain the calculations and assumptions used.	No off-setting energy is used to produce geothermal steam
F. Optional Supplemental Information		
F0	Does the product produce additional environmental benefits that are unrelated to the generation of additional electricity, production of additional alternative source fuels, reduction in energy use, or increase in efficiency?	No
F1	Additional environmental benefit description. Enter a narrative description of the additional environmental benefits from product use that are unrelated to the generation of additional electricity, production of additional alternative source fuels, reduction in energy use, or increase in efficiency.	

Other Application Types

F2	Amount of pollution avoided per unit. State the amount of pollution avoided in standard mass or volume metrics for the pollution type.	
	Explain calculations and assumptions.	
F3	Value of environmental benefits (pollution avoided) per unit. Enter the annual value of the pollution avoided (in dollars)	
	Explain calculations and assumptions.	
F4	**Research and Development Facilities.** Does your company have a facility located in California that performs research and development functions related to the product or production process at the Facility that is the subject of this Application?	No
	Please briefly describe the research and development activities here and list the address of the R&D facility.	
F5	**Workforce Partnerships.** Does the Facility have partnerships with educational institutions either for the purpose of training the workers at the Facility or for purposes of assisting in the training of potential future workers?	Yes
	Please briefly describe the nature of the workforce partnership and list the name of the partnering educational institution.	BHE Renewables is partnering with Imperial Valley College for workforce development for geothermal power and lithium recovery operations at the Salton Sea Known Geothermal Resource Area
F6	**Industry Cluster.** Has the industry associated with this Application been identified by a California state or local government entity or regional economic development authority as an industry cluster, strategic cluster, or competitive cluster of the region within which the Applicant's project resides?	Yes
	Please identify the industry and the entity that has identified this industry as an Industry Cluster.	The industry cluster is Lithium Valley and is recognized by the State of California. The geothermal resource will be used to supply the lithium recovery.
F7	**Benefits and Fringe Benefits.** Please indicate if any of the following are provided to employees (please indicate all that apply):	
	Medical	Yes
	Health	Yes
	Dental	Yes
	Vision	Yes
	Bonuses	Yes
	Pension plans	No
	Retirement contributions	Yes
	Profit sharing	Yes
	Dependent care & assistance reimbursement	No
	Transportation subsidies	No
	Education reimbursement	Yes
	Gym subsidies	No
	Employee discounts	Yes
	Paid leave	Yes

Navigation

-> Click Here to View Score

<- Click Here to Return to Instructions

<- Click Here to Return to Applicant Information

<- Click Here to Return to Qualified Property List