

**CALIFORNIA ALTERNATIVE ENERGY AND  
ADVANCED TRANSPORTATION FINANCING AUTHORITY**

*Request to Approve Project for a Sales and Use Tax Exclusion<sup>1</sup>*

**Antora Energy, Inc.  
Application No. 24-SM031**

**Tuesday, July 16, 2024**

Prepared By: *Jeannie Yu, Program Analyst*

**SUMMARY**

**Applicant** – Antora Energy, Inc.

**Location** – Sunnyvale, Santa Clara County

**Industry** –Semiconductor Device Manufacturing

**Project** – Update and Expansion of an Existing Thermophotovoltaic Modules Manufacturing Facility (Advanced Manufacturing)

	Recommended for Approval	Total Request
Value of Qualified Property	\$6,533,799.99	\$9,400,500
Estimated Sales and Use Tax Exclusion (“STE”) Amount <sup>2</sup>	\$551,453	\$793,402
<b>Estimated Net Benefit<sup>3</sup></b>		
Estimated Fiscal Benefits	\$1,291,067	\$1,857,521
<b>Total</b>	<b>\$1,291,067</b>	<b>\$1,857,521</b>
Estimated Quantifiable Net Benefit	\$739,614	\$1,064,119

	Points Earned
Estimated Fiscal Benefits	2,341
Estimated Environmental Benefits	150
Additional Benefits	95
<b>Total</b>	<b>2,586</b>

**Competitive Criteria Score – 60**

<sup>1</sup> All capitalized terms not defined in this document are defined in the STE Program’s statutes and regulations.

<sup>2</sup> This amount is calculated based on the average statewide sales tax rate of 8.44%.

<sup>33</sup> Applications that earn a Total Score of at least 1,000 points and an Environmental Benefits Score of over 20 points may be recommended for approval. (California Code of Regulations Title 4, Division 13, Section 10033(c)(6).)

**Staff Recommendation** – Based on the Applicant’s Competitive Criteria Score and pursuant to the Small Project Pool oversubscription provision in the program regulations,<sup>4</sup> Staff recommends approval of an award for the purchase of up to \$6,533,799.99 in Qualified Property anticipated to result in an approximate sales and use tax exclusion of \$551,453 (see recommendation below).

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**THE APPLICANT**

Antora Energy, Inc. (the “Applicant”) is a Delaware corporation that formed in 2018. The Applicant is headquartered in Sunnyvale and specializes in finding renewable energy solutions for industrial processes.

This Applicant is also (separately) applying for a sales and use tax exclusion (“STE”) award at this board meeting for its thermal battery module manufacturing facility in San Jose.

The Applicant received \$7,000,000 in funding related to thermophotovoltaic research & production (Sunnyvale) and thermal battery manufacturing (San Jose) from the U.S Department of Energy’s Advanced Research projects Agency-Energy (ARPA-E) from 2019 to 2023.

The Applicant received \$212,000 in funding related to thermophotovoltaic research & production from the Department of Defense, Army Research Laboratory in 2021.

The Applicant received \$7,900,000 in funding related to thermophotovoltaic research & production from the California Energy Commission from 2020 to 2023.

The major shareholders (10.0% or greater) of the Applicant are:  
Breakthrough Energy Ventures, LLC (10.1%)  
Lowercarbon Capital (13.74%)  
Trust Ventures (11.4%)

The corporate officers of the Applicant are:  
Andrew Ponec, CEO  
Justin Briggs, COO  
David Bierman, CCO

**THE PROJECT**

The Applicant is requesting an STE award to upgrade and expand its existing thermophotovoltaic (“TPV”) modules manufacturing facility located in Sunnyvale (the “Project”). The Project includes adding processing equipment to further vertically integrate its production process. According to the Applicant, a TPV module is an advanced semiconductor device consisting of several TPV cells and operates similarly to solar photovoltaics (solar panels). The TPV device captures infrared light from high-temperature heat sources and converts it into electricity and are currently sold to be used for aerospace and defense applications. The Applicant also states it will be using the TPV modules to generate electricity from the zero-emissions heat stored in its thermal battery products.

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<sup>4</sup> California Code of Regulations Title 4, Division 13, Section 10033(a)(4)

According to the Applicant, the production of TPV requires incredibly precise semiconductor tools and rigorous methodology to ensure quality control and improve efficiency. The Applicant has implemented batch processing of its products using a highly automated pilot production line, which will enable higher yields, increase uniformity, and lower costs. Lastly, the Applicant states TPV devices are very power dense and can minimize the use of material resources compared to other semiconductors devices such as solar panels.

**ANTICIPATED COSTS OF QUALIFIED PROPERTY**

The anticipated Qualified Property purchases are listed below:

Additional Wet Benches/ Fume Hoods	\$270,000
Process Equipment for Wafers/Substrates/Epitaxial	\$535,000
TPV Cell Process Development Equipment	\$1,270,000
Physical Vapor Deposition (PVD) Tools: Evaporators	\$950,000
Physical Vapor Deposition (PVD) Tools: Sputtering Tools	\$630,000
TPV Module Process Development Equipment	\$1,103,000
Electric Discharge Module Equipment	\$538,000
Materials Development Equipment	\$850,000
Characterization Equipment: Wafers/Substrates/Epi	\$490,000
Characterization Equipment: TPV Cells	\$819,000
Characterization Equipment: Modules	\$1,025,000
Failure Analysis and Analytical Capabilities	\$324,000
Additional Reliability Chambers/Ovens	\$496,500
Miscellaneous Equipment Spares	\$100,000
<b>Total</b>	<b><u>\$9,400,500</u></b>

*Note: The Qualified Property purchases reported in the Application and shown here in staff's report are estimated costs. In accordance with the Regulatory Agreement, a finalized Project equipment list will be prepared detailing the value of the Project equipment actually acquired, and the estimated tax benefit realized pursuant to Revenue and Tax Code Section 6010.8. Variance from the costs shown in the Application and in this report may occur prior to the closing due to increased costs of certain components of the Project over original estimates, and other reasons. In addition, those costs may vary after closing due to increased costs, as well as common design and equipment modifications during construction, differences in equipment due to future changes in statute or regulation, or for other reasons.*

**TIMELINE**

According to the Applicant, its facility is already in service. The Applicant states key equipment for module production will be ordered by the end of Q2 2024 with plans to qualify additional production processes before the end of 2024.

**STATUS OF PERMITS/OTHER REQUIRED APPROVALS**

According to the Applicant, no additional facility permits will be required. The Applicant will be submitting MEP permit plan sets to the Building Department at the City of Sunnyvale for every batch of equipment purchased.

**COMPETITIVE CRITERIA SCORE**

The Applicant received 60 Competitive Criteria points as follows:

1. **Environmental Benefits (0 of 100 points)**. The Applicant does not have a Recycled Resource Extraction Project or Project that produces an Advanced Transportation Technology or an Alternative Source product, component, or system. Therefore, no points are awarded.
2. **Unemployment (0 of 50 points)**. The Applicant’s Project is located in Santa Clara County, which has an average annual unemployment rate of 3.3%.<sup>5</sup> When compared to the statewide average annual unemployment rate of 4.6%, the Project location earned the Applicant zero points.
3. **Job Creation (45 of 75 points)**. The Applicant anticipates the Project will support a total of 77 production-related jobs at its Facility. CAEATFA estimates that approximately 5.22 of these jobs will be attributable to a marginal increase in jobs created due to the STE. Based on the amount of STE per estimated number of jobs created, the Applicant earned 45 points.
4. **California Headquarters (15 of 15 points)**. The Applicant has a California Corporate Headquarters, and, therefore, 15 points are awarded.
5. **Natural Disaster Relief (0 of 50 points)**. The Project is not to rebuild or relocate the Applicant’s Facility due to a fire, flood, storm, or earthquake identified in a state of emergency proclaimed by the Governor within two years of the time of application, and, therefore, zero points are awarded.
6. **Eligibility for Manufacturing and Research and Development Equipment Exemption (0 of 50 points)**. The Applicant is eligible to use one or more of the exemptions established pursuant to Section 6377.1 of the Revenue and Taxation Code, and, therefore, zero points are awarded.
7. **Emerging Strategic Industry (0 of 75 points)**. The Project’s industry is not in an Emerging Strategic Industry, and, therefore, zero points are awarded.

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<sup>5</sup> Unemployment rates are based on data available in December 2023.

**PROJECT EVALUATION**

**PROJECT BENEFITS**

The Project received a Total Score of 2,586 points, which exceeds the required 1,000-point threshold, and a total Environmental Benefits Score of 150 points, which exceeds the 20-point threshold.

- A. Fiscal Benefits (2,341 points).** The net present value of the total fiscal benefits over the lifetime of the Qualified Property is derived from the Applicant’s sales and use taxes, personal income taxes paid by the firm’s employees, firm taxes on profits, property taxes, and other indirect fiscal benefits of the Applicant. The total fiscal benefits amount to \$1,857,521, resulting in a Fiscal Benefits score of 2,341.
- B. Environmental Benefits (150 points).** The Project earned an Environmental Benefits Score of 150. The Applicant received points in the following categories:

  - 1. Energy Consumption (30 of 30 points).** The Applicant anticipates the Project will result in a 85% reduction in energy consumption compared to the Applicant’s previous manufacturing process by using the same amount of energy to produce units.
  - 2. Water Use (30 of 30 points).** The Applicant anticipates the Project will result in a 85% reduction in water use relative to the Applicant’s previous manufacturing process by using the same amount of water to produce more units.
  - 3. Solid Waste (30 of 30 points).** The Applicant anticipates the Project will result in a 85% reduction in solid waste produced relative to the Applicant’s previous manufacturing process by creating the same amount of solid waste to produce more units.
  - 4. Hazardous Waste (30 of 30 points).** The Applicant anticipates the Project will result in a 85% reduction in the hazardous waste produced relative to the Applicant’s previous manufacturing process by reducing the same amount of hazardous waste to produce more units.
  - 5. Air Pollutants (30 of 30 points).** The Applicant anticipates the Project will result in a 85% reduction in air pollutants produced relative to the Applicant’s previous manufacturing process by reducing the same amount of air pollutants to produce more units.
- C. Additional Benefits (95 points).** Applicants may earn additional points for their Total Score. The Applicant received 95 additional points.

1. **Production Jobs (45 of 75 points)**. The Applicant anticipates the Project will support a total of 77 production-related jobs at its Facility. CAEATFA estimates that approximately 5.22 of these jobs will be attributable to a marginal increase in jobs created due to the STE. Based on the amount of STE per estimated number of jobs created, the Applicant earned 45 points.
2. **Construction Jobs (0 of 75 points)**. The Applicant anticipates the Project will not support construction jobs at its Facility. Based on the amount of STE per estimated number of jobs created, the Applicant earned zero points.
3. **Unemployment (0 of 50 points)**. The Applicant’s Project is located in Santa Clara County, which has an average annual unemployment rate of 3.3%. When compared to the statewide average annual unemployment rate of 4.6%, the Project location earned the Applicant zero points.
4. **Research and Development Facilities (25 of 25 points)**. The Applicant has verified that it has a facility located in California that performs research and development functions related to TPV devices and products.
5. **Benefits and Fringe Benefits (25 of 25 points)**. The Applicant states it provides medical, health, dental and vision benefits, bonuses, retirement contributions, dependent care & assistance reimbursement, transportation subsidies, education reimbursement, gym subsidies, and paid leave to its employees, earning the Applicant 25 points.

### **LEGAL QUESTIONNAIRE**

Staff reviewed the Applicant’s responses to the questions contained in the Legal Status portion of the Application. The responses did not disclose any information that raises questions concerning the financial viability or legal integrity of this Applicant.

### **CAEATFA FEES**

In accordance with CAEATFA regulations,<sup>6</sup> the Applicant has paid CAEATFA an Application Fee of \$4,700.25 and will pay CAEATFA an Administrative Fee up to \$26,135.20.

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<sup>6</sup> California Code of Regulations Title 4, Division 13, Section 10036

**RECOMMENDATION**

Assuming all General Pool applications brought before the Board for consideration are approved, approximately \$58,367.35 in Qualified Property (or \$4,926 in STE) remains in the General Pool for calendar year 2024. While there is a waitlist for the General Pool, the amount available would not benefit the next applicant in line as the application and administrative fees charged would exceed the STE provided. Program regulation Section 10032(a)(4) provides that when the amount requested in the Application exceeds the STE available from the Small Project Pool, CAEATFA shall award the remaining STE request using STE from the general pool of STE allocation, if any remains.

The Applicant's request is for \$9,400,500 in Qualified Property for an estimated sale and use tax exclusion value of \$793,402, however since the Applicant is the last applicant being considered in the Small Project Pool, it will only receive the remaining amount, which is \$6,475,432.64 in Qualified Property for an estimated sale and use tax exclusion value of \$546,527, in addition to the remaining amount in the General Pool of \$58,367.35 in Qualified Property for an estimated sale and use tax exclusion value of \$4,926.

Therefore, Staff recommends the approval of Resolution No. 24-SM031-01 for Antora Energy, Inc.'s purchase of qualifying tangible personal property in an amount not to exceed \$6,533,799.99 anticipated to result in an approximate STE value of \$551,453.20.

**RESOLUTION APPROVING AND AUTHORIZING EXECUTION OF A  
REGULATORY AGREEMENT WITH ANTORA ENERGY, INC.**

**July 16, 2024**

WHEREAS, the California Alternative Energy and Advanced Transportation Financing Authority (the “Authority”) has received the Application of **Antora Energy, Inc.** (the “Applicant”) for financial assistance under the Sales and Use Tax Exclusion Program, as established in Public Resources Code Section 26011.8; and

WHEREAS, the Applicant qualifies as a Participating Party under Public Resources Code Section 26011.8 and Revenue and Taxation Code Section 6010.8; and

WHEREAS, the Applicant’s qualifying tangible personal property meets the requirements of a Project under Public Resources Code Section 26011.8 and Revenue and Taxation Code Section 6010.8 (the “Project”); and

WHEREAS, after the Authority approves an Application, the Authority enters into a Regulatory Agreement, as described in Authority Regulations Section 10035(a), with the Applicant for the Project; and

WHEREAS, the Applicant has stated the Project has an estimated cost not to exceed \$6,533,799.99 over a period of three (3) years; and

WHEREAS, the Applicant asserts that this form of financial assistance will enable it to avail itself of the benefits of an exclusion from sales and use taxes relative to the Project pursuant to Revenue and Taxation Code Section 6010.8; and

WHEREAS, the approval of the terms of the Regulatory Agreement and authority for the Executive Director or Chair of the Authority to execute the necessary documents to effectuate the Regulatory Agreement is now sought;

NOW, THEREFORE, BE IT RESOLVED by the California Alternative Energy and Advanced Transportation Financing Authority, as follows:

Section 1. The Regulatory Agreement includes a Project within the meaning of Public Resources Code Section 26003(a)(8)(B).

Section 2. The Regulatory Agreement constitutes financial assistance within the meaning of Public Resources Code Section 26003(a)(6).

Section 3. The Applicant is a participating party within the meaning of Public Resources Code Section 26003(a)(7).

Section 4. The Executive Director or Chair of the Authority (the “Authorized Signatories”) are hereby authorized for and on behalf of the Authority to approve any changes to the Project as the Authorized Signatories deem appropriate, provided that the amount of the



**Agenda Item – 4.A.19**  
**Resolution No. 24-SM031-01**

qualifying tangible personal property to be purchased for the Project may not be increased above the amount approved by the Authority.

Section 5. The proposed form of the Regulatory Agreement between the Applicant and the Authority, as filed with the Authority prior to this public meeting, is hereby approved. For, on behalf and in the name of the Authority, the Authorized Signatories are hereby authorized and directed to execute, acknowledge, and deliver to the Applicant the Regulatory Agreement in substantially the form filed with or approved by the Authority.

The Regulatory Agreement may contain insertions, deletions or changes as the Authorized Signatories executing the Regulatory Agreement may require or approve, including particular information inserted in substantial conformance with the staff summary and in the Application to the Authority. The approval of the Regulatory Agreement will be conclusively evidenced by the execution and delivery of the final Regulatory Agreement.

The Authority understands and agrees that, pursuant to the terms of the Regulatory Agreement, the obligations of the Applicant, under some circumstances, may be carried out or assumed by a successor or assignee entity, or by an affiliate of the Applicant.

Section 6. Each of the Authorized Signatories, acting alone, is hereby authorized and directed to do any and all ministerial acts, including, without limitation, the execution and delivery of any and all documents and certificates they may deem necessary or advisable to consummate the Regulatory Agreement and otherwise effectuate the purposes of this Resolution.

Section 7. The Applicant shall ensure that all of the qualifying tangible personal property acquired as part of the Project that is listed in the semi-annual reports provided to the Authority pursuant to the Regulatory Agreement will be installed, maintained and operated in compliance with all applicable local, state and federal laws.

Section 8. The Regulatory Agreement shall only apply to qualifying tangible personal property acquired as part of the Project that the Applicant certifies will be installed, maintained and operated at facilities physically located within the State of California.

Section 9. Neither the adoption by the Authority of this Resolution for the Applicant nor the Regulatory Agreement may be referred to in any application before any governmental agency as evidence of the feasibility, practicality or suitability of the Project and may not be referred to in any application for any required permission or authority to acquire, construct or operate the Project.

Section 10. This Resolution is effective immediately and will remain in full force and effect unless the Regulatory Agreement is not executed within thirty (30) days of the date of this Resolution. The Executive Director may extend the thirty (30) days if necessary.