

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

Request to Approve Project for a Sales and Use Tax Exclusion¹

**Nanoshift LLC
No. 23-SM038**

Tuesday, July 18, 2023

Prepared By: *Katrina Walters-White, Program Analyst*

SUMMARY

Applicant – Nanoshift LLC

Location – Richmond, Contra Costa County

Industry – Semiconductor Manufacturing

Project – New Semiconductor Manufacturing Facility (Advanced Manufacturing)

Value of Qualified Property	Estimated Sales and Use Tax Exclusion (“STE”) Amount ²
\$5,300,000	\$443,080

Estimated Net Benefit ³	Dollar Value	Points Earned
Estimated Fiscal Benefits	\$375,485	847
Estimated Environmental Benefits	N/A	90
Additional Benefits	N/A	105
Total	\$375,485	1,042
Estimated Quantifiable Net Benefit	-\$67,595	

Competitive Criteria Score – 100

Staff Recommendation – Approval

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

² This amount is calculated based on the average statewide sales tax rate of 8.36%.

³ 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).)

THE APPLICANT

Nanoshift LLC (the “Applicant”) is a California corporation that formed in 2005. The Applicant’s operation in Richmond specializes in the development of emerging microchips and devices used in semiconductors and electronics. The Applicant has been successful in taking technology concepts proposed by customers and turning them into real, tangible working prototypes, and its customers have included many Fortune 500 and Silicon Valley tech-based companies.

The Applicant received an income tax credit under the California Competes Tax Credit Program⁴ administered by the Governor’s Office of Business and Economic Development on April 12, 2018.

The major shareholders (10.0% or greater) of the Applicant are:
Salah Uddin (50%)
Ning Chen (50%)

The corporate officers of the Applicant are:
Salah Uddin, Partner & Co-Founder
Ning Chen, Partner & Co-Founder

THE PROJECT

The Applicant is requesting a sales and use tax exclusion (“STE”) award to build a new specialized advanced semiconductor and packaging manufacturing facility (the “Project”). The Applicant is currently located in Richmond and intends on moving to a new manufacturing facility to accommodate company growth and expansion. According to the Applicant, its goal is to continue doing business in or near Richmond; however, site selection is still in process. The Applicant primarily develops manufacturing processes for silicon-based chips but heavily focuses on R&D to keep up with emerging technologies. The Applicant represents that it plans to make upgrades to its production processes and R&D and prototyping equipment, and to build a larger manufacturing facility to increase production volumes. The planned expansion also includes the addition of new specialized tooling and clean room facilities.

According to the Applicant, its manufacturing processes require the use of high-precision tools and methodologies and a talented high-performance workforce. The Applicant explains that advancements have been made to its wafer-level manufacturing and packaging scalability, which will allow the Applicant to produce higher outputs of chips and sensors using less materials, labor and energy. The Applicant states that using advanced engineered materials such as dielectrics, metals, metal-oxides, composites, and polymers is critical to producing quality products. Additionally, the Applicant states the services it provides—advanced prototyping and niche-volume prototyping—will drive increases in manufacturing efficiency and sustainability.

⁴ California Code of Regulations, Title 10, Chapter 13, Article 1 (commencing with Section 8000).

ANTICIPATED COSTS OF QUALIFIED PROPERTY

The anticipated Qualified Property purchases are listed below:

Contact Mask Aligners	\$ 1,200,000
Resist Coater Track	\$ 275,000
Developer Track	\$ 200,000
Resist Spinners	\$ 70,000
HMDS (Hexamethyldisilane) Oven	\$ 50,000
Barrel Etcher	\$ 75,000
Silicon Etchers	\$ 1,500,000
Optical Microscopes	\$ 40,000
Digital Inspection System	\$ 40,000
Scanning Electron Microscope	\$200,000
Infrared Scope	\$25,000
Profilometer	\$60,000
Photospectrometer	\$ 20,000
Evaporators	\$400,000
Wafer Bonders	\$1,050,000
Computer Equipment	\$ 20,000
Cleanroom Shell and Hepas	\$50,000
Waste Collection Equipment	\$25,000
Total	\$5,300,000

Note: The Qualified Property purchases reported in the Application and shown here in staff's report are estimated costs. At the termination of 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

The Applicant is currently in the process of selecting a new site on which to expand its manufacturing operations. The Applicant estimates the initial facility build-out and purchasing of equipment to begin between Q4 2023 and Q2 2024 and anticipates potentially starting phase 2 of the Project in the second half of 2026.

STATUS OF PERMITS/OTHER REQUIRED APPROVALS

Since the Applicant has not yet decided the location of the expansion, the number and types of permits required are not known at this time. Once the Applicant has determined the site location, it will schedule an inspection with the local fire Marshall to approve the chemical and gas setup for installed equipment. According to the Applicant, it has had preliminary discussions with the City of Richmond and the California Governor's Office of Business and Economic Development (Go-Biz), and both entities are amenable to the Applicant's plan.

COMPETITIVE CRITERIA SCORE

The Applicant received 100 Competitive Criteria points as follows:

1. **Environmental Benefits (0 of 100 points).** The Application 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 Contra Costa County, which has an average annual unemployment rate of 3.6%.⁵ When compared to the statewide average annual unemployment rate of 4.3%, the Project location earned the Applicant zero points.
3. **Job Creation (35 of 75 points).** The Applicant anticipates the Project will support a total of 12 production-related jobs at its Facility. CAEATFA estimates that approximately 1.24 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 35 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 (50 of 50 points).** The Applicant is not eligible to use any of the exemptions established pursuant to Section 6377.1 of the Revenue and Taxation Code, and, therefore, 50 points are awarded.

⁵ Unemployment rates are based on data available in October 2022.

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.

PROJECT EVALUATION

PROJECT BENEFITS

The Project received a Total Score of 1,042 points, which exceeds the required 1,000-point threshold, and a total Environmental Benefits Score of 90 points, which exceeds the 20-point threshold.

- A. **Fiscal Benefits (847 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 \$375,485, resulting in a Fiscal Benefits score of 847.
- B. **Environmental Benefits (90 points)**. The Project earned an Environmental Benefits Score of 90. The Applicant received points in the following categories:
1. **Energy Consumption (30 of 30 points)**. The Applicant anticipates the Project will result in a 100% reduction in energy consumption compared to the industry standard manufacturing by implementing new manufacturing technologies that focus on advanced batch level techniques that increase energy efficiency.
 2. **Water Use (30 of 30 points)**. The Applicant anticipates the Project will result in a 100% reduction in water use relative to the industry standard manufacturing process by focusing on dry processes and using tools that consume less water.
 3. **Solid Waste (30 of 30 points)**. The Applicant anticipates the Project will result in a 50% reduction in solid waste produced relative to the industry standard manufacturing process by using more precise equipment and implementing new manufacturing technologies that focus on advanced batch level techniques.
- C. **Additional Benefits (105 points)**. Applicants may earn additional points for their Total Score. The Applicant received 105 additional points.
1. **Production Jobs (35 of 75 points)**. The Applicant anticipates the Project will support a total of 12 production-related jobs at its Facility. CAEATFA estimates that approximately 1.24 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 35 points.

2. **Construction Jobs (20 of 75 points).** The Applicant anticipates the Project will support a total of three construction jobs at its Facility. CAEATFA estimates that approximately .31 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 20 points.
3. **Unemployment (0 of 50 points).** The Applicant's Project is located in Contra Costa County, which has an average annual unemployment rate of 3.6%. When compared to the statewide average annual unemployment rate of 4.3%, 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 the production of semiconductors.
5. **Benefits and Fringe Benefits (25 of 25 points).** The Applicant states it provides medical, health, dental, and vision benefits, bonuses, transportation 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.

FINDINGS OF EXTRAORDINARY CIRCUMSTANCES AND OF PUBLIC INTEREST

The Applicant states the portion of the Qualified Property being requested for Project expansion in this Application will be funded through company revenue, reinvestments and loans, however, Project location and construction, as well as the success of a broader expansion plan are contingent upon the Applicant receiving federal grant funding through the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act of 2022 (the "CHIPS Act"), which provides roughly \$280 billion in new funding to boost domestic research and manufacturing of semiconductors in the United States.

According to the Applicant, a critical piece of receiving CHIPS Act support is providing evidence of state support (e.g., an STE award). The Applicant is currently waiting for a proposed IRS rule, the Advanced Manufacturing Investment Tax Credit Section 48D ("Section 48D"), to be finalized. The Applicant states that the current draft language of Section 48D stipulates the acquisition of qualified property (including real property) and its original use by the first taxpayer/business, which will only provide notable tax credits to incentivize newly acquired property and equipment, and will impact the Applicant's method, ability, and speed of expanding facilities and procuring equipment. Essentially, if Section 48D remains as currently drafted, the

Applicant would be required to construct a brand-new facility as opposed to occupying an existing facility. The Applicant states building a new facility alone could take 18-24 months to complete. Additionally, the increased demand for and scarce supply of semiconductor equipment stemming from the CHIPS Act has led to extremely long lead times in the industry.

Due to the pending submittal of the Applicant's CHIPS Act application, uncertainty of the final language for Section 48D, and long lead times for semiconductor equipment, the Applicant is requesting to extend the 15% purchase requirement timeframe by one year from January 18, 2025 to January 18, 2026, and to extend the initial term of the Regulatory Agreement ("Agreement") by two years, from July 18, 2026 to July 18, 2028.

The CAEATFA Board can extend the 15% purchase requirement timeframe upon a finding of extraordinary circumstances and that an extension is in the public interest and advances the purposes of the STE Program.⁶ Furthermore, the CAEATFA Board can extend the initial term of the Agreement upon a finding that an extension is in the public interest and advances the purposes of the STE Program.⁷ Extending the 15% purchase requirement and initial term of the Agreement are in the public interest and advance the purposes of the STE Program, as this will allow time for the Applicant to finalize site selection and construction plans post CHIPS Act awardee selection and expand the Project beyond what is indicated in this Application, at which time the Applicant states it will apply for another STE award.

CAEATFA FEES

In accordance with STE Program regulations,⁸ the Applicant has paid CAEATFA an Application Fee of \$2,650 and will pay CAEATFA an Administrative Fee of up to \$21,200.

RECOMMENDATION

Staff recommends the approval of Resolution No. 23-SM038-01 for Nanoshift LLC's purchase of qualifying tangible personal property in an amount not to exceed \$5,300,000 anticipated to result in an approximate STE value of \$443,080.

Staff recommends that the Board approve the Applicant's request to extend the 15% purchase requirement timeframe by one year, until January 18, 2026, as the Applicant has demonstrated extraordinary circumstances and it is in the public interest and advances the purposes of the STE Program.

Staff recommends that the Board approve the Applicant's request to extend the initial term of the Agreement by two years, until July 18, 2028, as it is in the public interest and advances the purposes of the STE Program.

⁶ California Code of Regulations Title 4, Division 13, Section 10035(b)(1)(A)

⁷ California Code of Regulations Title 4, Division 13, Section 10035(b)(1)(B)

⁸ California Code of Regulations Title 4, Division 13, Section 10036

**RESOLUTION APPROVING AND AUTHORIZING EXECUTION OF A
REGULATORY AGREEMENT WITH NANOSHIFT LLC**

July 18, 2023

WHEREAS, the California Alternative Energy and Advanced Transportation Financing Authority (the “Authority”) has received the Application of **Nanoshift LLC** (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, within 18 months of approval by the Authority, the Applicant must purchase or execute purchase orders for at least 15% of the total amount of Qualified Property listed in the approval resolution (STE Program regulations Section 10035(b)(1)); and

WHEREAS, upon a finding of extraordinary circumstances and that it is in the public interest and advances the purposes of the Program, the Authority may waive the requirement that the Applicant must purchase or execute purchase orders for at least 15% of the total amount of Qualified Property within 18 months of Application approval (STE Program regulations Section 10035(b)(1)(A)); and

WHEREAS, the Applicant has requested a waiver of the requirement to purchase or execute purchase orders for at least 15% of the Qualified Property amount within 18 months, extending the term by one (1) year to January 18, 2026; and

WHEREAS, the Applicant has demonstrated extraordinary circumstances as to why it cannot meet the 18-month 15% purchase requirement timeframe; and

WHEREAS, within three (3) years of approval by the Authority, the Applicant must make all Qualified Property purchases (STE Program regulations Section 10035(b)(1)); and

WHEREAS, upon a finding that it is in the public interest and advances the purposes of the Program, the Authority may waive the requirement that all purchases of Qualified Property be made within three (3) years of Application approval (STE Program regulations Section 10035(b)(1)(B)); and

WHEREAS, the granting the waiver will allow the Project to proceed and the state to receive the anticipated environmental and economic benefits of the Project, thereby advancing both the public interest and the purposes of the STE Program; and

WHEREAS, the Applicant has requested the Authority enter into the Agreement to acquire Project equipment with an estimated cost not to exceed \$5,300,000 over a period of five (5) 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 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.

Agenda Item – 4.A.11
Resolution No. 23-SM038-01

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. Authority finds these are extraordinary circumstances and that it is in the public interest and advances the purposes of the Program to extend the Applicant's deadline to meet the 15% purchase requirement to January 18, 2025.

Section 11. The Authority finds that it is in the public interest and advances the purposes of the Program to extend the Applicant's initial term of the Regulatory Agreement to July 18, 2028.

Section 12. 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.