UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-Q

☑ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended September 30, 2023

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Commission file number 001-36103

TECOGEN INC. (OTCQX:TGEN)

(Exact name of Registrant as specified in its charter)

Delaware	**04-3536131**
(State or Other Jurisdiction of Incorporation or Organization)	*(IRS Employer Identification No.)*

45 First Avenue
Waltham, Massachusetts 02451
(Address of Principal Executive Offices and Zip Code)

(781) 466-6402
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of “large accelerated filer”, “accelerated filer”, “smaller reporting company”, and "emerging growth company" in Rule 12b-2 of the Exchange Act:

Large accelerated filer ☐	Accelerated filer ☐
Non-accelerated filer ☒	Emerging Growth company ☐
Smaller reporting company ☒	

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of November 8, 2023, 24,850,261 shares of common stock, $.001 par value per share, of the registrant were issued and outstanding.

QUARTERLY REPORT ON FORM 10-Q
FOR THE PERIOD ENDED SEPTEMBER 30, 2023
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References in this Form 10-Q to "we", "us", "our"', the "Company" and "Tecogen" refers to Tecogen Inc. and its consolidated subsidiaries, unless otherwise noted.

PART I - FINANCIAL INFORMATION
Item 1 - Financial Statements

CONDENSED CONSOLIDATED BALANCE SHEETS
(unaudited)

	September 30, 2023	December 31, 2022
ASSETS		
Current assets:		
Cash and cash equivalents	$ 646,161	$ 1,913,969
Accounts receivable, net	7,694,571	6,714,122
Unbilled revenue	1,748,336	1,805,330
Employee retention credit receivable	46,148	713,269
Inventories, net	11,039,313	10,482,729
Prepaid and other current assets	420,317	401,189
Total current assets	21,594,846	22,030,608
Long-term assets:		
Property, plant and equipment, net	1,254,656	1,407,720
Right of use assets	754,957	1,245,549
Intangible assets, net	2,307,902	997,594
Goodwill	3,129,147	2,406,156
Other assets	145,237	165,230
TOTAL ASSETS	$ 29,186,745	$ 28,252,857
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 4,493,758	$ 3,261,952
Accrued expenses	2,632,607	2,384,447
Deferred revenue, current	1,655,737	1,115,627
Lease obligations, current	367,938	687,589
Acquisition liabilities, current	775,991	—
Unfavorable contract liability, current	201,090	236,705
Total current liabilities	10,127,121	7,686,320
Long-term liabilities:		
Deferred revenue, net of current portion	290,226	371,823
Lease obligations, net of current portion	429,737	623,452
Acquisition liabilities, net of current portion	1,485,677	—
Unfavorable contract liability, net of current portion	448,695	583,512
Total liabilities	12,781,456	9,265,107
Commitments and contingencies (Note 12)		
Stockholders' equity:		
Tecogen Inc. stockholders' equity:		
Common stock, $0.001 par value; 100,000,000 shares authorized; 24,850,261 issued and outstanding at September 30, 2023 and December 31, 2022	24,850	24,850
Additional paid-in capital	57,525,719	57,351,008
Accumulated deficit	(41,033,259)	(38,281,548)
Total Tecogen Inc. stockholders' equity	16,517,310	19,094,310
Non-controlling interest	(112,021)	(106,560)
Total stockholders' equity	16,405,289	18,987,750
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 29,186,745	$ 28,252,857

The accompanying notes are an integral part of these condensed consolidated financial statements.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(unaudited)

	Three Months Ended	
	September 30, 2023	September 30, 2022
Revenues		
Products	$ 2,938,789	$ 3,206,732
Services	3,842,600	3,078,604
Energy production	331,141	332,774
Total revenues	7,112,530	6,618,110
Cost of sales		
Products	1,669,747	2,074,243
Services	2,346,384	1,482,355
Energy production	170,378	168,178
Total cost of sales	4,186,509	3,724,776
Gross profit	2,926,021	2,893,334
Operating expenses		
General and administrative	2,708,817	2,343,449
Selling	425,465	567,529
Research and development	160,033	202,138
Gain on disposition of assets	—	(5,486)
Total operating expenses	3,294,315	3,107,630
Loss from operations	(368,294)	(214,296)
Other income (expense)		
Interest income and other income (expense), net	(16,330)	(7,140)
Interest expense	(6,357)	(2,280)
Unrealized loss on investment securities	(56,246)	—
Total other income (expense), net	(78,933)	(9,420)
Loss before provision for state income taxes	(447,227)	(223,716)
Provision for state income taxes	—	5,922
Consolidated net loss	(447,227)	(229,638)
Income attributable to the non-controlling interest	(34,346)	(27,074)
Net loss attributable to Tecogen Inc.	$ (481,573)	$ (256,712)
Net loss per share - basic	$ (0.02)	$ (0.01)
Net loss per share - diluted	$ (0.02)	$ (0.01)
Weighted average shares outstanding - basic	24,850,261	24,850,261
Weighted average shares outstanding - diluted	24,850,261	24,850,261

The accompanying notes are an integral part of these condensed consolidated financial statements.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(unaudited)

	Nine Months Ended	
	September 30, 2023	September 30, 2022
Revenues		
Products	$ 7,094,556	$ 10,156,328
Services	10,931,744	9,046,075
Energy production	1,214,806	1,268,623
Total revenues	19,241,106	20,471,026
Cost of sales		
Products	4,500,771	6,734,465
Services	6,159,855	4,322,693
Energy production	728,124	726,297
Total cost of sales	11,388,750	11,783,455
Gross profit	7,852,356	8,687,571
Operating expenses		
General and administrative	8,418,581	7,642,183
Selling	1,426,321	1,572,221
Research and development	625,691	537,126
Gain on disposition of assets	(19,950)	(41,931)
Gain on termination of unfavorable contract liability	—	(71,375)
Total operating expenses	10,450,643	9,638,224
Loss from operations	(2,598,287)	(950,653)
Other income (expense)		
Interest income and other income (expense), net	(36,562)	(22,556)
Interest expense	(8,629)	(15,841)
Unrealized gain (loss) on investment securities	(18,749)	37,497
Total other income (expense), net	(63,940)	(900)
Loss before provision for state income taxes	(2,662,227)	(951,553)
Provision for state income taxes	32,252	16,352
Consolidated net loss	(2,694,479)	(967,905)
Income attributable to non-controlling interest	(57,232)	(55,616)
Net loss attributable to Tecogen Inc.	$ (2,751,711)	$ (1,023,521)
Net loss per share - basic	$ (0.11)	$ (0.04)
Net loss per share - diluted	$ (0.11)	$ (0.04)
Weighted average shares outstanding - basic	24,850,261	24,850,261
Weighted average shares outstanding - diluted	24,850,261	24,850,261

The accompanying notes are an integral part of these condensed consolidated financial statements.

CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
For the Three and Nine Months September 30, 2023 and 2022
(unaudited)

Three Months Ended September 30, 2023	**Common Stock Shares**	**Common Stock 0.001 Par Value**	**Additional Paid-In Capital**	**Accumulated Deficit**	**Non-controlling Interest**	**Total**
Balance at June 30, 2023	24,850,261	$ 24,850	$ 57,456,944	$ (40,551,686)	$ (107,512)	$ 16,822,596
Stock-based compensation expense	—	—	68,775	—	—	68,775
Distributions to non-controlling interest	—	—	—	—	(38,855)	(38,855)
Net income (loss)	—	—	—	(481,573)	34,346	(447,227)
Balance at September 30, 2023	24,850,261	$ 24,850	$ 57,525,719	$ (41,033,259)	$ (112,021)	$ 16,405,289

Nine Months Ended September 30, 2023	**Common Stock Shares**	**Common Stock 0.001 Par Value**	**Additional Paid-In Capital**	**Accumulated Deficit**	**Non-controlling Interest**	**Total**
Balance at December 31, 2022	24,850,261	$ 24,850	$ 57,351,008	$ (38,281,548)	$ (106,560)	$ 18,987,750
Stock-based compensation expense	—	—	174,711	—	—	174,711
Distributions to non-controlling interest	—	—	—	—	(62,693)	(62,693)
Net income (loss)	—	—	—	(2,751,711)	57,232	(2,694,479)
Balance at September 30, 2023	24,850,261	$ 24,850	$ 57,525,719	$ (41,033,259)	$ (112,021)	$ 16,405,289

Three Months Ended September 30, 2022	**Common Stock Shares**	**Common Stock 0.001 Par Value**	**Additional Paid-In Capital**	**Accumulated Deficit**	**Non-controlling Interest**	**Total**
Balance at June 30, 2022	24,850,261	$ 24,850	$ 57,202,459	$ (36,600,430)	$ (84,206)	20,542,673
Stock-based compensation expense	—	—	69,118	—	—	69,118
Distributions to non-controlling interest	—	—	—	—	(24,014)	(24,014)
Net income (loss)	—	—	—	(256,712)	27,074	(229,638)
Balance at September 30, 2022	24,850,261	$ 24,850	$ 57,271,577	$ (36,857,142)	$ (81,146)	$ 20,358,139

Nine Months Ended September 30, 2022	**Common Stock Shares**	**Common Stock 0.001 Par Value**	**Additional Paid-In Capital**	**Accumulated Deficit**	**Non-controlling Interest**	**Total**
Balance at December 31, 2021	24,850,261	$ 24,850	$ 57,016,859	$ (35,833,621)	$ (79,939)	$ 21,128,149
Stock-based compensation expense	—	—	254,718	—	—	254,718
Distributions to non-controlling interest	—	—	—	—	(56,823)	(56,823)
Net income (loss)	—	—	—	(1,023,521)	55,616	(967,905)
Balance at September 30, 2022	24,850,261	$ 24,850	$ 57,271,577	$ (36,857,142)	$ (81,146)	$ 20,358,139

The accompanying notes are an integral part of these condensed consolidated financial statements.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited)

	Nine Months Ended	
	September 30, 2023	**September 30, 2022**
CASH FLOWS FROM OPERATING ACTIVITIES:		
Consolidated net loss	$ (2,694,479)	$ (967,905)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization, net	459,779	324,968
Stock-based compensation	174,711	254,718
Provision (release) for doubtful accounts	44,000	(183,955)
Gain on disposition of assets	(19,950)	(41,931)
Unrealized (gain) loss on investment securities	18,749	(37,497)
Gain on termination of unfavorable contract liability	—	(71,375)
Changes in operating assets and liabilities		
(Increase) decrease in:		
Accounts receivable	(1,324,448)	67,940
Employee retention credit receivable	667,121	562,752
Unbilled revenue	56,994	1,302,187
Inventories	(165,537)	(947,031)
Prepaid expenses and other current assets	(19,128)	70,806
Other assets	491,836	466,420
Increase (decrease) in:		
Accounts payable	1,140,759	(182,903)
Accrued expenses and other current liabilities	256,847	(80,720)
Deferred revenue	458,512	(487,676)
Other liabilities	(566,016)	(482,608)
Net cash used in operating activities	(1,020,250)	(433,810)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of property and equipment	(31,728)	(286,820)
Payment for business acquisition	(170,000)	—
Purchases of intangible assets	—	(29,505)
Proceeds from disposition of assets	16,863	72,655
Distributions to non-controlling interest	(62,693)	(56,823)
Net cash used in investing activities	(247,558)	(300,493)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Net cash provided by financing activities	—	—
Change in cash and cash equivalents	(1,267,808)	(734,303)
Cash and cash equivalents, beginning of the period	1,913,969	3,614,463
Cash and cash equivalents, end of the period	$ 646,161	$ 2,880,160
Supplemental disclosures of cash flows information:		
Cash paid for interest	$ 7,385	$ 14,597
Cash paid for taxes	$ 32,252	$ 16,352
Non-cash consideration issued for Aegis acquisition:		
Accounts receivable credit	$ 300,000	$ —
Accounts payable assumed	91,048	—
Contingent consideration	1,442,462	—
Total fair value of non-cash consideration	$ 1,833,510	$ —

The accompanying notes are an integral part of these condensed consolidated financial statements.

Note 1. Description of Business and Basis of Presentation

Description of Business

Tecogen Inc. (together with its subsidiaries, “we,” “our,” or “us,” or “Tecogen”) designs, manufactures, markets, and maintains high efficiency, ultra-clean cogeneration products. These include natural gas engine driven combined heat and power (CHP) systems, chillers and heat pumps for multi-family residential, commercial, recreational and industrial use. We are known for products that provide customers with substantial energy savings, resiliency from utility power outages and for significantly reducing a customer’s carbon footprint. Our products are sold with our patented Ultera® emissions technology which nearly eliminates all criteria pollutants such as nitrogen oxide ("NOx") and carbon monoxide ("CO"). We developed Ultera® for other applications including stationary engines and forklifts. We were incorporated in the State of Delaware on September 15, 2000.

We have wholly-owned subsidiaries American DG Energy, Inc. ("ADGE") and Tecogen CHP Solutions, Inc., and we own a 51% interest in American DG New York, LLC ("ADGNY"), a joint venture. ADGE and ADGNY distribute, own, and operate clean, on-site energy systems that produce electricity, hot water, heat and cooling. ADGE and ADGNY own the equipment that is installed at customers' facilities and sell the energy produced to the customer on a long-term contractual basis.
Our operations are comprised of three business segments:

- our Products segment, which designs, manufactures and sells industrial and commercial cogeneration systems;
- our Services segment, which provides operations and maintenance ("O&M") services for our products under long term service contracts, and
- our Energy Production segment, which installs, operates and maintains distributed generation electricity systems that we own and sells energy generated by such systems in the form of electricity, heat, hot water and cooling to our customers under long-term energy sales agreements.

The majority of our customers are located in regions with the highest utility rates, typically California, the Midwest and the Northeast.

On July 20, 2022, we announced our intention to increase focus on opportunities relating to Controlled Environment Agriculture (CEA). Tecogen believes that CEA offers an exciting opportunity to apply the company’s expertise in clean cooling, power generation, and greenhouse gas reduction to address critical issues affecting food and energy security. However, we have not taken any formal steps to enter this business as of the date of the filing of this report.

Our common stock is quoted on OTC Markets Group, Inc.'s OTCQX Best Market tier and trades under the symbol "TGEN."

On May 18, 2017, we acquired 100% of the outstanding common stock of American DG Energy Inc., formerly a related entity, in a stock-for-stock merger.

On March 15, 2023, we entered into an agreement ("Agreement") with Aegis Energy Services, LLC (“Aegis”) pursuant to which Aegis agreed to assign to us and we agreed to assume certain Aegis maintenance agreements, we agreed to purchase certain assets, and related matters (“Acquisition”). On April 1, 2023, the Acquisition closed. Under the Agreement, we agreed to acquire from Aegis and assume Aegis rights and obligations arising on or after April 1, 2023, under maintenance agreements pursuant to which Aegis provided maintenance services for approximately 200 cogeneration systems, and acquired certain vehicles and inventory used by Aegis in connection with the performance of such maintenance services, and, following closing hired eight (8) Aegis employees to provide services with respect to such maintenance agreements. At closing, we acquired eight (8) Aegis vehicles for consideration consisting of $170,000 in cash. Also, we issued credits against outstanding accounts receivable due from Aegis in the amount of $300,000 for the acquisition of inventory that Aegis used to provide maintenance services. See Note 8. - Aegis Contract and Related Asset Acquisition.

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles for interim financial information and with the instructions to Form 10-Q and Article 8 of Regulation S-X. Accordingly, they do not include all the information and footnotes required by generally accepted accounting principles for complete financial statements. In the opinion of management, all adjustments considered necessary for a fair presentation have been included. Operating results for the nine months ended September 30, 2023 are not necessarily indicative of the results that may be expected for the year ending December 31, 2023.

The condensed consolidated balance sheet at December 31, 2022 has been derived from the audited consolidated financial statements at that date included in our annual report of Form 10-K for the year ended December 31, 2022 ("2022 Form

10-K"), but does not include all of the information and footnotes required by generally accepted accounting principles for complete financial statements.

For further information, refer to the consolidated financial statements and footnotes thereto included in Tecogen's Annual Report on Form 10-K for the year ended December 31, 2022.

The accompanying unaudited condensed consolidated financial statements include our accounts and the accounts of entities in which we have a controlling financial interest. Those entities include our wholly-owned subsidiaries American DG Energy Inc., Tecogen CHP Solutions, Inc., and a joint venture, American DG New York, LLC, in which American DG Energy Inc. holds a 51% interest. Investments in partnerships and companies in which we do not have a controlling financial interest but where we have significant influence are accounted for under the equity method. Any intercompany transactions have been eliminated in consolidation.

Our operations are comprised of three business segments. Our Products segment designs, manufactures and sells industrial and commercial cogeneration systems as described above. Our Services segment provides operation and maintenance services to customers for our products. Our Energy Production segment installs, operates and maintains distributed generation electricity systems that we own and sells energy generated by such systems in the form of electricity, heat, hot water and cooling to our customers under long-term sales agreements.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Liquidity

At September 30, 2023, we had cash and cash equivalents of $646,161, a decrease of $1,267,808 or 66.2% from the cash and cash equivalents balance at December 31, 2022. During the nine months ended September 30, 2023, our Products revenue was negatively impacted. Our Products have long sales cycles and the reduced business development activity in the aftermath of COVID-19 resulted in what we believe is a temporary reduction in Products revenue.

Based on our current operating plan, we believe existing resources, including existing cash, cash flows from operations and the funds available to us under loans from certain related parties will be sufficient to meet our working capital requirements for the next twelve months. However, we may need to generate sufficient additional cash from operations to finance the company during the periods beyond twelve months.

On October 9, 2023, we entered into an agreement with each of John N. Hatsopoulos, a director and principal shareholder of registrant, and Earl R. Lewis, III, a director, pursuant to which Mr. Hatsopoulos agreed to provide financing to us of up to $1 million, and Mr. Lewis agreed to provide financing to us of $500,000, and potentially an additional $500,000 at his discretion. On October 10, 2023, we issued a promissory note and borrowed $500,000 from Mr. Hatsopoulos. The loan bears interest at 5.12% per annum and is repayable one year from the date of the issuance of the related promissory note. The proceeds of the loans are expected to be used for general working capital purposes.

If sufficient funds from operating activities are not available to finance our business and operations, we may need to raise additional capital through debt financing or an equity offering to meet our operating and capital needs. There can be no assurance we will be able to raise such additional debt or equity financing or upon terms that are acceptable to us.

Income Taxes

The provisions for income taxes in the accompanying unaudited consolidated statements of operations differ from that which would be expected by applying the federal statutory tax rate primarily due to losses for which no benefit is recognized.

Employee Retention Credit

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security Act (“CARES Act”) was signed into law providing numerous tax provisions and other stimulus measures, including an employee retention credit (“ERC”), which is a refundable tax credit against certain employment taxes. The Taxpayer Certainty and Disaster Tax Relief Act of 2020 and the American Rescue Plan Act of 2021 extended and expanded the availability of the ERC.

As a result of our election to use an alternative quarter, we qualified for the ERC in the first, second and third quarters of 2021 because our gross receipts decreased by more than 20% from the first, second and third quarters of 2019. As a result of averaging 100 or fewer full-time employees in 2019, all wages paid to employees in the first, second and third quarters of 2021, excluding the wages applied to the Paycheck Protection Program Second Draw Loan, were eligible for the ERC.

During the three months ended June 30, 2021, we recorded an ERC benefit for the first and second quarters of 2021 of $713,269 and, in the three months ended September 30, 2021 we recorded an ERC benefit for the third quarter of 2021 of $562,752, respectively, in other income (expense), net in the our condensed consolidated statements of operations. On April 14, 2022, we received $564,027 from the Internal Revenue Service representing the ERC claim for the third quarter of 2021 and $1,275 of accrued interest. We received $667,121 from the Internal Revenue Service on January 12, 2023 representing a partial payment of the ERC claimed from the first and second quarters of 2021 and $15,775 of accrued interest, which is reported in other income (expense) in our condensed consolidated statements of operations for the nine months ended September 30, 2023. A current receivable in the amount of $46,148 is included in our condensed consolidated balance sheet as of September 30, 2023.

Note 2. Revenue

Revenue is recognized when performance obligations under the terms of a contract with our customer are satisfied; generally this occurs with the transfer of control of our products, services and energy production. Revenue is measured as the amount of consideration we expect to receive in exchange for transferring goods or providing services or energy to customers.

Shipping and handling fees billed to customers in a sales transaction are recorded in revenue and shipping and handling costs incurred are recorded in cost of sales. We have elected to exclude from revenue any value-added sales and other taxes which we collect concurrent with revenue-producing activities. These accounting policy elections are consistent with the manner in which we have recorded historically shipping and handling fees and value-added taxes. Incremental costs incurred by us to obtain a contract with a customer are negligible, if any, and are expensed ratably in proportion to the related revenue recognized.

Disaggregated Revenue

In general, our business segmentation is aligned according to the nature and economic characteristics of our products and customer relationships and provides meaningful disaggregation of each business segment's results of operations.

The following tables further disaggregate our revenue by major source by segment for the three and nine months ended September 30, 2023 and 2022.

	Three Months Ended September 30, 2023			
	Products	Services	Energy Production	Total
Products	$ 2,938,789	$ —	$ —	$ 2,938,789
Maintenance services	—	3,842,600	—	3,842,600
Energy production	—	—	331,141	331,141
Total revenue	$ 2,938,789	$ 3,842,600	$ 331,141	$ 7,112,530

	Nine Months Ended September 30, 2023			
	Products	Services	Energy Production	Total
Products	$ 7,094,556	$ —	$ —	$ 7,094,556
Maintenance services	—	10,931,744	—	10,931,744
Energy production	—	—	1,214,806	1,214,806
Total revenue	$ 7,094,556	$ 10,931,744	$ 1,214,806	$ 19,241,106

	Three Months Ended September 30, 2022			
	Products	Services	Energy Production	Total
Products	$ 3,206,732	$ —	$ —	$ 3,206,732
Maintenance services	—	3,078,604	—	3,078,604
Energy production	—	—	332,774	332,774
Total revenue	$ 3,206,732	$ 3,078,604	$ 332,774	$ 6,618,110

	Nine Months Ended September 30, 2022			
	Products	Services	Energy Production	Total
Products	$ 10,156,328	$ —	$ —	$ 10,156,328
Installation services	—	20,109	—	20,109
Maintenance services	—	9,025,966	—	9,025,966
Energy production	—	—	1,268,623	1,268,623
Total revenue	$ 10,156,328	$ 9,046,075	$ 1,268,623	$ 20,471,026

Products Segment

Products. Our Product revenues include cogeneration systems that supply electricity and hot water, chillers that provide air-conditioning and hot water and engineered accessories, which consist of ancillary products and parts necessary to install a cogeneration unit including integration into the customers' existing electrical and mechanical systems. We refer to the package of engineered accessories and engineering and design services necessary for the customers' installation of a cogeneration unit as light installation services.

We transfer control and generally recognize a sale when we ship a product from our manufacturing facility at which point the customer takes ownership of the product. Payment terms on product sales are generally 30 days.

We recognize revenue in certain circumstances before delivery to the customer has occurred (commonly referred to as bill and hold transactions). We recognize revenue related to such transactions once, among other things, the customer has made a written fixed commitment to purchase the product(s) under normal billing and credit terms, the customer has requested the product(s) be held for future delivery as scheduled and designated by them, risk of ownership has been assumed by the customer, and the product(s) are tagged as sold and segregated for storage awaiting further direction from the customer. Due to the infrequent nature and duration of bill and hold arrangements, the value associated with custodial storage services is deemed immaterial in the context of the contract and in total, and accordingly, none of the transaction price is allocated to such service.

Depending on the product and terms of the arrangement, we may defer the recognition of a portion of the transaction price received because we have to satisfy a future obligation (e.g., product start-up service). Amounts allocated to product start-up services are recognized as revenue when the start-up service has been completed. We use an observable selling price to determine standalone selling prices where available and either a combination of an adjusted market assessment approach, an expected cost plus a margin approach, and/or a residual approach to determine the standalone selling prices for separate performance obligations as a basis for allocating contract consideration when an observable selling price is not available. Amounts received but not recognized pending completion of performance are recognized as contract liabilities and are recorded as deferred revenue along with deposits by customers.

Services Segment

Installation Services. Prior to January 1, 2023, we provided installation services which included all necessary engineering and design, labor, subcontract labor and service to install a cogeneration unit including integration into the customers' existing electrical and mechanical systems. Since January 1, 2023, we have not provided material installation services and do not expect to provide material installation services going forward.

Maintenance Services. Maintenance services are provided under either long-term maintenance contracts or time and material maintenance contracts. Revenue under time and material maintenance contracts is recognized when the maintenance service is completed. Revenue under long-term maintenance contracts is recognized either ratably over the term of the contract where the contract price is fixed or when the periodic maintenance activities are completed and the invoiced cost to the customer is based on run hours or kilowatts produced in a given period. We use an output method to measure progress towards completion of our performance obligation which results in the recognition of revenue on the basis of a direct measurement of the value to the customer of the services transferred to date relative to the remaining services promised under the contract. We use the practical expedient at ASC 606-10-55-18 of recognizing revenue in an amount equal to the amount we have the right to invoice the customer under the contract. Payment terms for maintenance services are generally 30 days.

Our acquisition of the Aegis maintenance contracts and related business closed on March 15, 2023 and since April 1, 2023, revenues resulting from the Aegis acquisition have been included in our revenue from the Services segment.

Energy Production Segment

Energy Production. Revenue from energy contracts is recognized when electricity, heat, hot and/or chilled water is produced by our owned on-site cogeneration systems. Each month we invoice the customer and recognize revenue for the various forms of energy delivered, based on actual meter readings which capture the quantity of the various forms of energy delivered in a given month, under a contractually defined formula which takes into account the current month's cost of energy from the local power utility.

As the various forms of energy delivered by us under energy production contracts are simultaneously delivered and consumed by the customer, our performance obligation under these contracts is considered to be satisfied over time. We use an output method to measure progress towards completion of our performance obligation which results in the recognition of revenue on the basis of a direct measurement of the value to the customer of the services transferred to date relative to the remaining services promised under the contract. We use the practical expedient at ASC 606-10-55-18 of recognizing revenue in an amount equal to the amount that we have the right to invoice the customer under the contract. Payment terms on invoices under these contracts are generally 30 days.

Contract Balances

The timing of revenue recognition, billings and cash collections result in billed accounts receivable, unbilled revenue (contract assets) and deferred revenue, consisting of customer deposits and billings in excess of revenue recognized (contract liabilities) on the condensed consolidated balance sheets.

During the nine months ended September 30, 2023, we did not recognize any revenue that was included in unbilled revenue at the end of the period. Approximately $16,428 was billed in the nine months ended September 30, 2023 that had been recognized as revenue in previous periods.

Revenue recognized during the nine ended months September 30, 2023 that was included in deferred revenue at the beginning of the period was approximately $746,111.

Remaining Performance Obligations

Remaining performance obligations related to ASC 606 represent the aggregate transaction price allocated to performance obligations with an original contract term of greater than one year, excluding certain maintenance contracts and all energy production contracts where a direct measurement of the value to the customer is used as a method of measuring progress towards completion of our performance obligation. Exclusion of these remaining performance obligations is due in part to the inability to quantify values based on unknown future levels of delivery and in some cases rates used to invoice customers. Remaining performance obligations therefore consist of unsatisfied or partially satisfied performance obligations related to fixed price maintenance contracts and installation contracts.

As of September 30, 2023, the aggregate amount of the transaction price allocated to remaining performance obligations was approximately $1,945,963. We expect to recognize revenue of approximately 94.0% of the remaining performance obligations over the next 24 months, 85.1% recognized in the first 12 months and 8.9% recognized over the subsequent 12 months, and the remainder recognized thereafter.

Note 3. Income Per Common Share

Basic and diluted loss per share for the three and nine months endedSeptember 30, 2023 and 2022, respectively, were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	2022	2023	2022
Numerator:				
Net loss available to stockholders	$ (481,573)	$ (256,712)	$ (2,751,711)	$ (1,023,521)
Denominator:				
Weighted average shares outstanding - Basic	24,850,261	24,850,261	24,850,261	24,850,261
Effect of dilutive securities:				
Stock options	—	—	—	—
Weighted average shares outstanding - Diluted	24,850,261	24,850,261	24,850,261	24,850,261
Basic loss per share	$ (0.02)	$ (0.01)	$ (0.11)	$ (0.04)
Diluted loss per share	$ (0.02)	$ (0.01)	$ (0.11)	$ (0.04)
Anti-dilutive shares underlying stock options outstanding	1,829,051	971,001	1,829,051	836,001

Note 4. Inventories, net

Inventories at September 30, 2023 and December 31, 2022 consisted of the following:

	September 30, 2023	December 31, 2022
Raw materials, net	$ 9,545,184	$ 9,001,491
Work-in-process	706,731	498,139
Finished goods	787,398	983,099
Total inventories, net	$ 11,039,313	$ 10,482,729

Note 5. Property, Plant and Equipment, net

Property, plant and equipment at September 30, 2023 and December 31, 2022 consisted of the following:

	Estimated Useful Life (in Years)	September 30, 2023	December 31, 2022
Energy systems	1 - 15 years	$ 2,810,232	$ 2,810,232
Machinery and equipment	5 - 7 years	1,758,601	1,624,885
Furniture and fixtures	5 years	206,865	196,007
Computer software	3 - 5 years	192,865	192,865
Leasehold improvements	*	466,789	466,789
		5,435,352	5,290,778
Less - accumulated depreciation and amortization		(4,180,696)	(3,883,058)
		$ 1,254,656	$ 1,407,720

* Lesser of estimated useful life of asset or lease term

Depreciation and amortization expense on property and equipment for the three and nine months ended September 30, 2023 and 2022 was $112,783 and $352,192 and $125,755 and $376,365, respectively. During the nine months ended September 30, 2023, we received proceeds of $16,863 from the disposition of certain assets and reversed $8,687 of accrued decomissioning costs from a former ADG energy site, realizing a gain of $19,950. During the nine months ended September 30, 2022, we received proceeds of $72,655 from the disposition of certain assets, realizing a gain of $41,931.

Note 6. Intangible Assets and Liabilities Other Than Goodwill

As of September 30, 2023 and December 31, 2022 we had the following amounts related to intangible assets and liabilities other than goodwill:

	September 30, 2023			December 31, 2022		
Intangible assets	**Cost**	**Accumulated Amortization**	**Total**	**Cost**	**Accumulated Amortization**	**Total**
Product certifications	$ 777,465	$ (639,073)	$ 138,392	$ 777,465	$ (584,863)	$ 192,602
Patents	888,910	(474,882)	414,028	888,910	(405,140)	483,770
Developed technology	240,000	(168,000)	72,000	240,000	(156,000)	84,000
Trademarks	26,896	—	26,896	26,896	—	26,896
In Process R&D	263,936	(94,263)	169,673	263,936	(65,984)	197,952
Favorable contract asset	384,465	(375,213)	9,252	384,465	(372,091)	12,374
Customer contract	1,591,327	(113,666)	1,477,661	—	—	—
	$ 4,172,999	$ (1,865,097)	$ 2,307,902	$ 2,581,672	$ (1,584,078)	$ 997,594
Intangible liability						
Unfavorable contract liability	$ 2,618,168	$ (1,968,383)	$ 649,785	$ 2,618,168	$ (1,797,951)	$ 820,217

The aggregate amortization expense related to intangible assets and liabilities exclusive of unfavorable contract related intangibles for the three and nine months ended September 30, 2023 and 2022 was $113,477 and $280,671 and $49,885 and $150,376, respectively. The net credit to cost of sales related to the amortization of the unfavorable contract related intangible asset and liability for the three and nine months ended September 30, 2023 and 2022 was $54,576 and $170,084 and $69,370 and $202,753, respectively.

Favorable/Unfavorable Contract Assets and Liabilities and Customer Contract Assets

The favorable contract asset and unfavorable contract liability in the foregoing table represent the estimated fair value of American DG Energy's customer contracts (both positive for favorable contracts and negative for unfavorable contracts) which were acquired by us in May 2017 and include the customer relationship contract acquired by us in April 2023 as part of the Aegis acquisition. The American DG Energy's favorable and unfavorable contract contracts are being amortized on a straight-line basis over the contract term, which varies by customer contract. The Aegis customer relationship contract is being amortized on a straight-line basis over a period of seven (7) years which is consistent with the projected revenue recognition.

Amortization of intangibles including contract related amounts is calculated using the straight-line method over the remaining useful life or contract term.Aggregate future amortization over the next five years and thereafter as of September 30, 2023 is estimated to be as follows:

	Non-contract Related Intangibles	Contract Related Intangibles	Total
Year 1	$ 172,412	$ 26,242	$ 198,654
Year 2	178,779	111,624	290,403
Year 3	174,763	153,964	328,727
Year 4	172,340	167,176	339,516
Year 5	63,940	175,750	239,690
Thereafter	41,111	193,120	234,231
Total	$ 803,345	827,876	$ 1,631,221

We recognized a gain on termination of unfavorable contract liability of $71,375 in the nine months ended September 30, 2022 due to the closing of certain energy production sites.

Note 7. Sale of Energy Producing Assets and Goodwill Impairment

During the first quarter of 2019 we recognized two individual sales of energy producing assets, for a total of eight power purchase agreements, including the associated energy production contracts for total consideration of $7 million.

In connection with these assets sales, we entered into agreements with the purchaser to maintain and operate the assets over the remaining periods of the associated energy production contracts (through August 2033 and January 2034, respectively) in exchange for monthly maintenance and operating fees. These agreements contain provisions whereby we have guaranteed to the purchaser a minimum level or threshold of cash flows from the associated energy production contracts. In October 2021 the minimum guarantee with respect to one of the energy purchase agreements was modified by reducing the guaranteed minimum collections by $35,000 per year, the guaranteed minimum collection amount associated with one site that was sold by the customer. Actual results are compared to the minimum threshold bi-annually and we are contractually obligated to reimburse any shortfall to the purchaser. To the extent actual cash flow results exceed the minimum threshold, we are entitled to fifty percent of such excess under the agreements. Based upon an analysis of these energy producing assets expected future performance, as of September 30, 2023, we do not expect to make any material payments under the guarantee.

At September 30, 2023, there were no amounts due under the energy production contracts.

The foregoing agreements also contain provisions whereby we have agreed to make whole the purchaser in the event the counterparty to the energy production contract(s) defaults on or otherwise terminates before the stated expiration of the energy production contract. If we are required to make whole the purchaser under such provisions, we expect to be able to recover from the counterparty to the energy production contract(s) under a similar provision contained in those contracts in respect of early termination.

We are also responsible under the agreements for site decommissioning costs, if any, in excess of certain threshold amounts by site. Decommissioning of site assets is performed when, if and as requested by the counterparty to the energy production contract upon termination of the energy production contract.

Note 8. Aegis Contract and Related Asset Acquisition

On March 15, 2023, we entered into an agreement ("Agreement") with Aegis Energy Services, LLC (“Aegis”) pursuant to which Aegis agreed to assign to us and we agreed to assume certain Aegis maintenance agreements, we agreed to purchase certain assets from Aegis, and related matters (“Acquisition”). On April 1, 2023, the Acquisition closed. Under the Agreement, we agreed to acquire from Aegis and assume Aegis’ rights and obligations arising on or after April 1, 2023, under maintenance agreements pursuant to which Aegis provided maintenance services to third parties for approximately 200 cogeneration systems and we agreed to acquire from Aegis certain vehicles and inventory used by Aegis in connection with the performance of its maintenance services. At closing, we acquired eight (8) Aegis vehicles for consideration consisting of $170,000 in cash. Also, we issued credits against outstanding accounts receivable due from Aegis in the amount of $300,000 for the acquisition of inventory that Aegis used to provide maintenance services. At closing, we hired eight (8) Aegis employees who, following the closing, have agreed to continue to provide maintenance services relating to the cogeneration systems covered by the maintenance agreements assumed pursuant to the Agreement. Following the closing and for a period of up to seven (7) years, we agreed to pay Aegis a percentage of the revenue collected for maintenance services provided pursuant to the maintenance agreements acquired from Aegis. Further, prior to December 31, 2023, we have the right to acquire and assume additional Aegis' maintenance agreements for cogeneration systems on substantially similar terms and conditions. As of September 30, 2023, we have not acquired or assumed any additional maintenance agreements from Aegis. The Agreement contained certain indemnification provisions and agreements on the part of Aegis and for each party to cooperate with each other and provide certain transitional assistance. We acquired the Aegis maintenance agreements to expand our Service portfolio and to benefit from the long-term contract revenue stream generated by these agreements.

We have determined that the assignment and assumption of the Aegis maintenance agreements, in combination with the related asset acquisition and the retention of the former Aegis employees, constitutes a business and should be accounted for as a business combination under the acquisition method. As of the acquisition date, we recognized, separately from goodwill, the identifiable assets acquired and the liabilities assumed, at fair value.

We have included the financial results of the Aegis maintenance agreements in our consolidated financial statements from April 1, 2023, the closing or acquisition date.

The following table summarizes the consideration paid for the Aegis acquisition and the fair value of assets acquired and contract-related liabilities assumed as the acquisition date:

Consideration Paid:		
Cash	$	170,000
Accounts receivable credit issued		300,000
Account payable		91,048
Contingent consideration		1,442,462
Total fair value of consideration transferred		2,003,510
Identifiable assets acquired and liabilities assumed:		
Assets acquired		
Property, plant and equipment		170,000
Inventory		391,048
Identifiable intangible asset - customer contracts		1,591,327
		2,152,375
Acquired contract-related liabilities assumed		
Deferred maintenance reserve		(871,856)
		(871,856)
Net identifiable assets acquired		1,280,519
Excess of cost over fair value of net assets acquired (Goodwill)	$	722,991

The amounts recognized for inventory, identifiable intangible assets, contingent consideration and deferred maintenance reserves are provisional pending completion of the necessary valuations and analysis. ASC 805 establishes a measurement period to provide companies with a reasonable amount of time to obtain the information necessary to identify and measure various items in a business combination and cannot extend beyond one year from the acquisition date. During the three months ended September 30, 2023, we identified a $20,130 adjustment to decrease the accounts payable assumed and inventory acquired which had no impact on goodwill balance.

The fair value of the contingent consideration was estimated using the income approach. The excess cash flow was discounted to present value using an appropriate rate of return to estimate the market value of the customer identifiable intangible asset and the risks associated with the future revenue forecasts due to potential changes in customer energy requirements or changes in the economic viability of these CHP sites which depend on the spread between natural gas fuel and electricity prices, all of which are not within our control. Key assumptions to value the customer identifiable intangible asset included a discount rate of 15%, anticipated existing contract run out and forecasted revenue.

On the date of acquisition, the fair value of the contingent consideration and the deferred maintenance reserve were calculated using a weighted average cost of capital of12%, discounting the future cash flows to present value and are subsequently remeasured to fair value at each reporting date until the fair value contingencies are resolved. Fair value adjustments which may be determined at subsequent reporting dates will be recorded in our consolidated statements of operations and will not impact the goodwill balance. As ofSeptember 30, 2023, we did not remeasure the contingent consideration and deferred maintenance reserves given the probability of achieving the revenue estimates and deferred maintenance costs were consistent with our initial valuation.

The contingent consideration is payable within forty-five (45) days following the end of each calendar quarter through the earlier of the expiration or termination of the relevant maintenance agreements, or the seventh (7th) anniversary of the acquisition date. The consideration is equal to the product of the revenues collected in a calendar quarter multiplied by an applicable percentage. The agreement stipulates quarterly aggregate revenue targets and an applicable percentage, and provides for a higher applicable percentage if revenues exceed the target revenues. The applicable percentage ranges from 5% to 10% over the agreement term. The deferred maintenance reserve represents costs, which are expected to be incurred over a three-year period from the date of acquisition, to repair customer equipment that had not been properly maintained prior to our acquisition of the maintenance service agreements.

Revenues and gross profit from the Aegis maintenance contracts since the acquisition date were $1,231,537 and $766,804, respectively, for the nine months ended September 30, 2023 and are included in our Services segment.

The purchase price of the acquisition was allocated to the tangible and intangible assets acquired and liabilities assumed and recognized at their fair value based on widely accepted valuation techniques in accordance with ASC 820, "Fair Value Measurement," as of the acquisition date. The process for estimating fair value requires the use of significant assumptions and estimates of future cash flows and developing appropriate discount rates. The excess of the purchase price over fair value of the net identified assets acquired and liabilities assumed was recorded as goodwill. Goodwill is primarily attributable to the going concern element of the Aegis business, including its assembled workforce and the long-term nature of the customer maintenance agreements, as well as anticipated cost synergies due primarily to the elimination of administrative overhead. Goodwill resulting from the Aegis acquisition is not expected to be deductible for income tax purposes.

Acquisition-related costs which consisted on recurring internal resources were de minimus and such costs were expensed as incurred (ASC 805-50-30-1).

The following table summarizes the contract-related liabilities assumed as ofSeptember 30, 2023:

		September 30, 2023
Acquisition liabilities, current		
Contingent consideration	$	205,246
Deferred maintenance reserve		570,745
		775,991
Acquisition liabilities, long-term		
Contingent consideration		1,206,077
Deferred maintenance reserve		279,600
	$	1,485,677

Note 9. Leases

Our leases principally consist of operating leases related to our corporate office, field offices, and our research, manufacturing, and storage facilities.

At inception, we determine if an arrangement constitutes a lease and whether that lease meets the classification criteria of a finance or operating lease. Some of our lease agreements contain lease components (e.g. minimum rent payments) and non-lease components (e.g. maintenance, labor charges, etc.). We account for each component separately based on the estimated standalone price of each component.

Operating leases are included in Right-of-use assets, Lease obligations, current and Long-term liabilities - Lease obligations, net of current portion, on the condensed consolidated balance sheets. These assets and liabilities are recognized at the commencement date based on the present value of remaining lease payments over the lease term and using an incremental borrowing rate consistent with the lease terms or implicit rates, when readily determinable. For those leases where it is reasonably certain at the commencement date that we will exercise the option to extend the lease, then the lease term will include the lease extension term. Short-term operating leases, which have an initial term of 12 months or less, are not recorded on the balance sheet.

Lease expense for operating leases, which principally consist of fixed payments for base rent, is recognized on a straight-line basis over the lease term. Lease expense for the three and nine months ended September 30, 2023 and 2022 was $209,506 and $616,062 and $201,578 and $608,652, respectively.

Supplemental information related to leases for the nine months ended September 30, 2023 and 2022 is as follows:

	Nine Months Ended September 30,	
	2023	2022
Cash paid for amounts included in the measurement of operating lease liabilities	$ 558,028	$ 549,402
Right-of-use assets obtained in exchange for operating lease liabilities	$ —	$ —
Weighted-average remaining lease term - operating leases	3.90 years	3.60 years
Weighted-average discount rate - operating leases	6 %	6 %

Supplemental information related to operating leases as of September 30, 2023 and December 31, 2022 is as follows:

	September 30, 2023	December 31, 2022
Operating leases		
Right-of-use assets	$ 754,957	$ 1,245,549
Operating lease liability, current	$ 367,938	$ 687,589
Operating lease liability, long-term	429,737	623,452
Total operating lease liability	$ 797,675	$ 1,311,041

Future minimum lease commitments under non-cancellable operating leases as of September 30, 2023 were as follows:

	Operating Leases
Year 1	$ 398,741
Year 2	127,092
Year 3	119,902
Year 4	61,044
Year 5	53,752
Thereafter	130,553
Total lease payments	891,084
Less: imputed interest	93,409
Total	$ 797,675

The lease for our headquarters located in Waltham, Massachusetts which consists of approximately 43,000 square feet of manufacturing, storage and office space, expires on March 31, 2024. Currently, our monthly base rent is $44,254. On March 31, 2023, we entered into two lease agreements for two adjoining buildings, located in Billerica, Massachusetts, containing approximately 26,412 square feet of manufacturing, storage and office space to serve as our headquarters and manufacturing facilities. The lease agreements provide for initial lease terms of five (5) years with two successive options to renew for additional terms of five (5) years. Both leases commence on January 1, 2024 and require payment of the base rent, real estate taxes, common maintenance expenses and aggregate deposits of $38,200. Our costs for initial improvements required to the leased premises is estimated to range between $1,000,000 and $1,250,000. The estimated straight-line monthly rent expense for the initial term of the lease is approximately $24,800 per month. In accordance with ASC 842-20-30-1, we will record the lease liability and right-of-use asset using the discount rate for the lease upon the lease commencement date.

Note 10. Stock-Based Compensation

Stock-Based Compensation

We adopted a 2006 Stock Option and Incentive Plan, or the Plan, under which the Board of Directors may grant incentive or non-qualified stock options and stock grants to employees, directors, advisors and consultants. The Plan was amended at various dates by the Board of Directors to increase number of shares of common stock authorized to be issued under the Plan to 3,838,750 as of September 30, 2023, and in June 2017 stockholders approved an amendment to extend the termination date of the Plan to January 1, 2026 and ratified and approved option grants issued after January 1, 2016 ("Amended Plan").

Stock options vest based upon the terms within the individual option grants, with an acceleration of the unvested portion of such options upon a change in control event, as defined in the Amended Plan. The options are not transferable except by will or by the laws of descent and distribution. The option price per share under the Amended Plan cannot be less than the fair market value of the underlying shares on the date of the grant. The number of shares remaining available for future issuance under the Amended Plan as of September 30, 2023 was 191,193.

During the nine months ended September 30, 2023, we did not grant any options to purchase shares of common stock under the Amended Plan.

We adopted the 2022 Stock Incentive Plan (the "2022 Plan"), under which the Board of Directors may grant incentive or non-qualified stock options and stock grants to employees, directors, advisors and consultants. Under the 2022 Plan, 3,800,000 shares of our shares of our common stock are authorized for issuance pursuant to awards under the 2022 Plan. The adoption of the 2022 Plan was approved by our shareholders on June 9, 2022.

Under the 2022 Plan, stock options vest based upon the terms within the individual option grants, with an acceleration of the unvested portion of such options upon a change in control event, as defined in the 2022 Plan. The options are not transferable except by will or domestic relations order. The option price per share under the 2022 Plan cannot be less than the fair market value of the underlying shares on the date of the grant. The number of shares remaining available for future issuance under the Plan as of September 30, 2023 was 3,025,000.

During the nine months ended September 30, 2023, we granted non-qualified options to purchase an aggregate of 575,000 shares of our common stock at exercise prices ranging between $0.88 - $1.10 per share to certain directors, officers and employees. These options have a vesting schedules of two or four years and expire in ten years. The fair value of the options issued in 2023 was $244,625. The weighted-average grant date fair value of stock options granted during 2023 was $0.43 per share.

Stock option activity for the nine months ended September 30, 2023 was as follows:

Common Stock Options	Number of Options	Exercise Price Per Share	Weighted Average Exercise Price	Weighted Average Remaining Life	Aggregate Intrinsic Value
Outstanding, December 31, 2022	3,204,297	$ 0.71 $ 10.33	$ 1.61	7.30 years	$ 882,074
Granted	575,000	$ 0.88 $ 1.10	$ 0.93		
Exercised	—				
Canceled and forfeited	(44,800)		$ 2.86		
Outstanding, September 30, 2023	3,734,497	$ 1.10 $ 3.20	$ 1.49	7.14 years	$ 188,529
Exercisable, September 30, 2023	1,931,322		$ 1.97		$ 112,578
Vested and expected to vest, September 30, 2023	3,462,521	$ 0.71 $ 10.33	$ 1.53		$ 177,136

Consolidated stock-based compensation expense for the three and nine months ended September 30, 2023 and 2022 was $68,775 and $174,711 and $69,118 and $254,718, respectively. No tax benefit was recognized related to the stock-based compensation recorded during the period.

At September 30, 2023 the total compensation cost related to unvested stock option awards not yet recognized is $568,334 and this amount will be recognized over a weighted average period of 2.64 years.

Note 11. Fair Value Measurements

The fair value topic of the FASB Accounting Standards Codification defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The accounting guidance also establishes a fair value hierarchy which requires an entity to maximize the use of observable inputs, where available, and minimize the use of unobservable inputs when measuring fair value. There are three levels of inputs that may be used to measure fair value:

Level 1 - Unadjusted quoted prices in active markets for identical assets or liabilities. We currently do not have any Level 1 financial assets or liabilities.

Level 2 - Observable inputs other than quoted prices included in Level 1. Level 2 inputs include quoted prices for identical assets or liabilities in non-active markets, quoted prices for similar assets or liabilities in active markets and inputs other than quoted prices that are observable for substantially the full term of the asset or liability. We have Level 2 financial assets and liabilities as provided below.

Level 3 - Unobservable inputs reflecting management's own assumptions about the input used in pricing the asset or liability. We do not currently have any Level 3 financial assets or liabilities.

The following tables present the asset reported in "other assets" in the consolidated balance sheet measured at its fair value on a recurring basis as of September 30, 2023 and 2022 by level within the fair value hierarchy.

September 30, 2023		Quoted prices in active markets for identical assets	Significant other observable inputs	Significant unobservable inputs	Unrealized
Description	**Total**	**Level 1**	**Level 2**	**Level 3**	**Gains /(Losses)**
Recurring fair value measurements					
Marketable equity securities					
EuroSite Power Inc.	$ 74,995	$ —	$ 74,995	$ —	$ (18,749)
Total recurring fair value measurements	$ 74,995	$ —	$ 74,995	$ —	$ (18,749)

September 30, 2022		Quoted prices in active markets for identical assets	Significant other observable inputs	Significant unobservable inputs	Unrealized
Description	**Total**	**Level 1**	**Level 2**	**Level 3**	**Gains /(Losses)**
Recurring fair value measurements					
Marketable equity securities					
EuroSite Power Inc.	$ 112,492	$ —	$ 112,492	$ —	$ 37,497
Total recurring fair value measurements	$ 112,492	$ —	$ 112,492	$ —	$ 37,497

We utilize a Level 2 category fair value measurement to value our investment in EuroSite Power, Inc. as a marketable equity security at period end. That measurement is equal to the quoted market closing price at period end. Since this security is not actively traded we classify it as Level 2.

The following table summarizes changes in Level 2 assets which are comprised of marketable equity securities for the nine months ended September 30, 2023 and 2022:

Fair value at December 31, 2022	$ 93,744
Unrealized losses	(18,749)
Fair value at September 30, 2023	$ 74,995
Fair value at December 31, 2021	$ 74,995
Unrealized gains	37,497
Fair value at September 30, 2022	$ 112,492

Note 12. Commitments and Contingencies

On November 23, 2022, we were served with a suit filed against us on August 24, 2022 in the Ontario Superior Court of Justice by The Corporation of the Town of Milton, Milton Energy Generation Solutions Inc. and Milton Hydro Distribution Inc (the "Plaintiffs"), all of whom are municipal corporations incorporated in the Province of Ontario. The plaintiffs sued for damages in the amount of CDN $1,000,000, pre-judgment and post-judgment interest, legal fees, and any further relief the court may deem, alleging breach of contract, breach of warranty, negligent misrepresentations and nuisance. Plaintiffs allege that on or about July 10, 2022, a Tecogen cogenerator installed by us at the plaintiffs facility caught fire, causing damage to the cogenerator and the plaintiff's facility. We have filed a response denying liability and are being represented by Canadian counsel. For the year ended December 31, 2022, we reserved $150,000 for anticipated damages which may not be covered by our insurance and continue to maintain the reserve at September 30, 2023.

Note 13. Segments

As of September 30, 2023, we were organized intothree (3) operating segments through which senior management evaluates our business. These segments, as described in more detail in Note 1, are organized around the products and services provided to customers and represent our reportable segments. The following table presents information by reportable segment for the three and nine months ended September 30, 2023 and 2022:

	Products	Services	Energy Production	Corporate, other and elimination (1)	Total
Three Months Ended September 30, 2023					
Revenue - external customers	$ 2,938,789	$ 3,842,600	$ 331,141	$ —	$ 7,112,530
Intersegment revenue	—	48,085	—	(48,085)	—
Total revenue	$ 2,938,789	$ 3,890,685	$ 331,141	$ (48,085)	$ 7,112,530
Gross profit	$ 1,269,042	$ 1,496,216	$ 160,763	$ —	$ 2,926,021
Identifiable assets	$ 10,591,087	$ 13,270,545	$ 3,203,776	$ 2,121,337	$ 29,186,745
Nine Months Ended September 30, 2023					
Revenue - external customers	$ 7,094,556	$ 10,931,744	$ 1,214,806	$ —	$ 19,241,106
Intersegment revenue	—	202,442	—	(202,442)	—
Total revenue	$ 7,094,556	$ 11,134,186	$ 1,214,806	$ (202,442)	$ 19,241,106
Gross profit	$ 2,593,785	$ 4,771,889	$ 486,682	$ —	$ 7,852,356
Identifiable assets	$ 10,591,087	$ 13,270,545	$ 3,203,776	$ 2,121,337	$ 29,186,745
Three Months Ended September 30, 2022					
Revenue - external customers	$ 3,206,732	$ 3,078,604	$ 332,774	$ —	$ 6,618,110
Intersegment revenue	—	41,390	—	(41,390)	—
Total revenue	$ 3,206,732	$ 3,119,994	$ 332,774	$ (41,390)	$ 6,618,110
Gross profit	$ 1,132,489	$ 1,596,249	$ 164,596	$ —	$ 2,893,334
Identifiable assets	$ 10,639,810	$ 10,308,988	$ 3,754,321	$ 5,368,204	$ 30,071,323
Nine Months Ended September 30, 2022					
Revenue - external customers	$ 10,156,328	$ 9,046,075	$ 1,268,623	$ —	$ 20,471,026
Intersegment revenue	—	199,059	—	(199,059)	—
Total revenue	$ 10,156,328	$ 9,245,134	$ 1,268,623	$ (199,059)	$ 20,471,026
Gross profit	$ 3,421,863	$ 4,723,382	$ 542,326	$ —	$ 8,687,571
Identifiable assets	$ 10,639,810	$ 10,308,988	$ 3,754,321	$ 5,368,204	$ 30,071,323

(1) Corporate, intersegment revenue, other and elimination includes various corporate assets.

Note 14. Subsequent Events

We have evaluated events through the date of the filing of this report and, except as described below, have determined that no material subsequent events occurred that would require disclosure in the unaudited consolidated financial statements for the period ended September 30, 2023 or in the financial notes thereto.

Related Party Loans

On October 9, 2023, we entered into an agreement with each of John N. Hatsopoulos, a director and principal shareholder of registrant, and Earl R. Lewis, III, a director of registrant, pursuant to which Mr. Hatsopoulos agreed to provide financing to us of up to $1 million, and Mr. Lewis agreed to provide financing to us of $500,000, and potentially, an additional $500,000 at his discretion. We have the right to determine the amount of the loans at the time of a draw down, subject to the conditions in our agreements with each of Mr. Hatsopoulos and Mr. Lewis discussed below. The loans and terms of the loan agreements were unanimously approved by our board of directors.

The loans bear interest on the outstanding principal at the Internal Revenue Service's Applicable Federal Rate to be determined at the time we issue a promissory note in connection with a loan drawdown. The principal amount and accrued interest of each loan is repayable one year from the date of issuance of the applicable promissory note. A note may be prepaid by us at any time. The principal amount of each loan and accrued interest is subject to mandatory prepayment in the event of a change of control of the registrant. The promissory notes are subject to customary events of default and are transferable provided the conditions to transfer set forth in the promissory notes are satisfied by the noteholder. The proceeds of the loans are expected to be used for general working capital purposes.

On October 10, 2023, we issued a promissory note and borrowed $500,000 from Mr. Hatsopoulos. The loan bears interest at 5.12% per annum.

Proposed Reverse Stock Split

On October 9, 2023, our board of directors authorized us to seek shareholder approval at a special meeting of our shareholders of an amendment to our Amended and Restated Certificate of Incorporation ("certificate of incorporation") that would enable us to effect a combination of our outstanding shares of common stock into a lesser number of shares, or a reverse stock split. We intend to seek stockholder approval for three alternative amendments to our certificate of incorporation and to effect the reverse stock split at the alternative ratios of 1 for 4, 1 for 5, or 1 for 6. The determination of the ratio, implementation, and timing of any reverse stock split will be subject to further approval by our board of directors following receipt of shareholder approval at a special meeting of our shareholders.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

This Management's Discussion and Analysis of Financial Condition and Results of Operations and other parts of this Quarterly Report on Form 10-Q (“Form 10-Q”) contain forward-looking statements, within the meaning of the Private Securities Litigation Reform Act of 1995, that involve risks and uncertainties. Any statements contained herein that are not statements of historical fact may be deemed to be forward-looking statements. Forward-looking statements provide current expectations of future events based on certain assumptions and include any statement that does not directly relate to any historical or current fact. For example, statements in this Form 10-Q regarding the potential future impact of the COVID-19 pandemic on our business and results of operations are forward-looking statements. Forward-looking statements can also be identified by words such as “future,” “anticipates,” “believes,” “estimates,” “expects,” “intends,” “plans,” “predicts,” “will,” “would,” “could,” “can,” “may,” and similar terms. Forward-looking statements are not guarantees of future performance and our actual results may differ significantly from the results discussed in the forward-looking statements. Such forward-looking statements include, among other things, statements regarding the impact of the coronavirus pandemic on demand for our products and services, the availability of incentives, rebates, and tax benefits relating to our products, changes in the regulatory environment relating to our products, competing technological developments, and the availability of financing to fund our operations and growth. Factors that might cause such differences include, but are not limited to, those discussed in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2022 (“2022 Form 10-K”), as supplemented, and Part II, Item 1A of this Form 10-Q, in each case under the heading “Risk Factors.” The following discussion should be read in conjunction with the 2022 Form 10-K filed with the Securities and Exchange Commission (“SEC”) and the condensed consolidated financial statements and accompanying notes included in Part I, Item 1 of this Form 10-Q. Each of the terms “Tecogen,” “we,” “our,” and “us” as used herein refer collectively to Tecogen Inc. and our wholly owned subsidiaries, unless otherwise stated. While we may elect to update forward-looking statements in the future, we specifically disclaim any obligation to do so, even if our estimates change, and you should not rely on those forward-looking statements as representing ours views as of any date subsequent to the date of the filing of this Form 10-Q.

Recent Developments

Acquisition and Assumption of Aegis Energy Services Maintenance Agreements

On March 15, 2023, we entered into an agreement ("Agreement") with Aegis Energy Services, LLC (“Aegis”) pursuant to which Aegis agreed to assign to us and we agreed to assume certain Aegis maintenance agreements, we agreed to purchase certain assets from Aegis, and related matters (“Acquisition”). On April 1, 2023, the Acquisition closed. Under the Agreement, we agreed to acquire from Aegis and assume Aegis’ rights and obligations arising on or after April 1, 2023, under maintenance agreements pursuant to which Aegis provided maintenance services to third parties for approximately 200 cogeneration systems and we agreed to acquire from Aegis certain vehicles and inventory used by Aegis in connection with the performance of its maintenance services. At closing, we acquired eight (8) Aegis vehicles for consideration consisting of $170,000 in cash. Also, we issued credits against outstanding accounts receivable due from Aegis in the amount of $300,000 for the acquisition of inventory that Aegis used to provide maintenance services. At closing, we hired eight (8) Aegis employees who, following the closing, have agreed to continue to provide maintenance services relating to the cogeneration systems covered by the maintenance agreements assumed pursuant to the Agreement. Following the closing and for a period of up to seven (7) years, we agreed to pay Aegis a percentage of the revenue collected for maintenance services provided pursuant to the maintenance agreements acquired from Aegis. Further, prior to December 31, 2023, we have the right to acquire and assume additional Aegis’ maintenance agreements for cogeneration systems on substantially similar terms and conditions. As of September 30, 2023, we have not acquired or assumed any additional maintenance agreements from Aegis. The Agreement contained certain indemnification provisions and agreements on the part of Aegis and for each party to cooperate with each other and provide certain transitional assistance. We acquired the Aegis maintenance agreements to expand our Service portfolio and to benefit from the long-term contract revenue stream generated by these agreements.

Tecochill Hybrid-Drive Air-Cooled Chiller Development

During the third quarter of 2021 we began development of the Tecochill Hybrid-Drive Air-Cooled Chiller. We recognized that there were many applications where the customer wanted an easy to install roof top chiller. Using the inverter design from our InVerde e+ cogeneration module, the system can simultaneously take two inputs, one from the grid or a renewable energy source and one from our natural gas engine. This allows a customer to seek the optimum blend of operational cost savings and greenhouse gas benefits while providing added resiliency from two power sources. We introduced the Tecochill Hybrid-Drive Air-Cooled Chiller at the AHR Expo in February 2023 and are expecting to start accepting orders for the product in the fourth quarter 2023. A patent application based on this concept has been filed with the US Patent and Trademark Office.

Controlled Environment Agriculture

On July 20, 2022, we announced our intention to increase our focus on opportunities relating to Controlled Environment Agriculture (CEA). Tecogen believes that CEA offers an exciting opportunity to apply the company's expertise in clean cooling, power generation, and greenhouse gas (GHG) reduction to address critical issues affecting food and energy security. In recent years our chiller and cogeneration equipment have been used in numerous cannabis cultivation facilities because our systems significantly reduce operating costs, reduce the facility GHG footprint and offer resiliency to grid outages.

CEA facilities enable multiple crop cycles (15 to 20 cycles) in one year compared to one or two crop cycles in conventional farming. In addition, growing produce close to the point of sale reduces food spoilage during transportation. Food crops grown in greenhouses typically have lower yields per square foot than in CEA facilities, and the push to situate facilities close to consumers in cities requires minimizing land area and maximizing yield per square foot. Yields are increased in CEA facilities by supplementing or replacing natural light with grow lights in a climate-controlled environment - which requires significant energy use.

Our experience providing clean energy solutions to cannabis cultivation facilities has given us significant insight into requirements relating to energy-intensive indoor agriculture applications that we expect to be transferable to CEA facilities for food production. Although we have no current plans to develop CEA facilities ourselves, we are working with other companies that are providing HVAC solutions, modular chiller plants, and controls to integrate and expand our solutions for CEA. Although there can be no assurance, we expect customers using the exhaust gas CO2 from our engines to boost plant growth both in food crop and cannabis facilities.

Employee Retention Credit

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act") was signed into law providing numerous tax provisions and other stimulus measures, including an employee retention credit ("ERC"), which is a refundable tax credit against certain employment taxes. The Taxpayer Certainty and Disaster Tax Relief Act of 2020 and the American Rescue Plan Act of 2021 extended and expanded the availability of the ERC.

As a result of our election to use an alternative quarter, we qualified for the ERC in the first, second and third quarters of 2021 because our gross receipts decreased by more than 20% from the first, second and third quarters of 2019. As a result of averaging 100 or fewer full-time employees in 2019, all wages paid to employees in the first, second and third quarters of 2021, excluding the wages applied to the Paycheck Protection Program Second Draw Loan, were eligible for the ERC.

During the three months ended June 30, 2021, we recorded an ERC benefit for the first and second quarters of 2021 of $713,269 and, in the three months ended September 30, 2021 we recorded an ERC benefit for the third quarter of 2021 of $562,752, respectively, in other income (expense), net in the our condensed consolidated statements of operations. On April 14, 2022, we received $564,027 from the Internal Revenue Service representing the ERC claim for the third quarter of 2021 and $1,275 of accrued interest. We received $667,121 from the Internal Revenue Service on January 12, 2023 representing a partial payment of the ERC claimed from the first and second quarters of 2021 and $15,775 of accrued interest, which is reported in other income (expense) in our condensed consolidated statements of operations for the nine months ended September 30, 2023. A current receivable in the amount of $46,148 is included in our condensed consolidated balance sheet as of September 30, 2023.

Impact of the Russian Invasion of Ukraine and Recent Events in the Middle East

Presently, we have no operations or customers in Russia, the Ukraine or in the Middle East. The higher energy prices for natural gas as a result of the invasion of Ukraine and the conflict in the Middle East may affect the performance of our Energy Production segment. However, we have also seen higher electricity prices as much of the electricity production in the United States is generated from fossil fuels. If the electricity prices continue to rise, the economic savings generated by our products are likely to increase. In addition to the direct result of changes in natural gas and electricity prices, the war in Ukraine and the conflict in the Middle East may result in higher cybersecurity risks, increased or ongoing supply chain challenges, and volatility related to the trading prices of commodities.

Overview

Tecogen designs, manufactures and sells industrial and commercial cogeneration systems that produce combinations of electricity, hot water and air conditioning using automotive engines that have been adapted to run on natural gas. Cogeneration systems are efficient because, in addition to supplying mechanical energy to power electric generators or compressors – displacing utility supplied electricity – they provide an opportunity for the facility to incorporate the engine's waste heat into onsite processes, such as space and potable water heating. We produce standardized, modular, small-scale products, with a limited number of product configurations that are adaptable to multiple applications. We refer to these combined heat and power products as CHP (electricity plus heat) and Engine driven chillers (cooling plus heat).

Our products are sold directly to end-users by our in-house marketing team and by established sales agents and representatives. We have agreements in place with distributors and sales representatives. Our existing customers include hospitals and nursing homes, colleges and universities, health clubs and spas, hotels and motels, office and retail buildings, food and beverage processors, multi-unit residential buildings, laundries, ice rinks, swimming pools, factories, municipal buildings, military installations and indoor growing facilities. We have an installed base of more than 3,000 units. Our products have long useful lives with proper maintenance. Some of our units have been operating for over 35 years.

With the acquisition of American DG Energy Inc. ("ADGE") in May 2017, we added an additional source of revenue. Through ADGE, we install, own, operate and maintain complete distributed generation electricity systems, or DG systems or energy systems, and other complementary systems at customer sites, and sell electricity, hot water, heat and cooling energy under long-term contracts at prices guaranteed to the customer to be below conventional utility rates. Each month we obtain readings from our energy meters to determine the amount of energy produced for each customer. We use a contractually defined formula to multiply these readings by the appropriate published price of energy (electricity, natural gas or oil) from each customer's local energy utility, to derive the value of our monthly energy sale, which includes a negotiated discount. Our revenues per customer on a monthly basis vary based on the amount of energy produced by our energy systems and the published price of energy (electricity, natural gas or oil) from our customer's local energy utility that month.

Our operations are comprised of three business segments. Our Products segment designs, manufactures and sells industrial and commercial cogeneration systems. Our Services segment provides operation and maintenance services for our products under long term service contracts. Our Energy Production segment installs, operates and maintains distributed generation electricity systems that we own and sells energy generated by such systems in the form of electricity, heat, hot water and cooling to our customers under long-term sales agreements.

Results of Operations

Third Quarter of 2023 Compared to Third Quarter of 2022

The following table sets forth for the periods indicated, the percentage of net sales represented by certain items reflected in our condensed consolidated statements of operations:

	Three Months Ended	
	September 30, 2023	September 30, 2022
Revenues	100.0%	100.0%
Cost of sales	58.9%	56.3%
Gross profit	41.1%	43.7%
Operating expenses		
General and administrative	38.1%	35.4%
Selling	6.0%	8.6%
Research and development	2.3%	3.1%
Gain on disposition of assets	— %	(0.1)%
Total operating expenses	46.3%	47.0%
Loss from operations	(5.2) %	(3.2) %
Total other income (expense), net	(1.1) %	(0.1) %
Consolidated net loss	(6.3) %	(3.5) %
Income attributable to the non-controlling interest	(0.5) %	(0.4) %
Net loss attributable to Tecogen, Inc.	(6.8) %	(3.9) %

Revenues

The following table presents revenue for the periods indicated, by segment and the change from the prior year:

	Three Months Ended			
	September 30, 2023	September 30, 2022	Increase (Decrease) $	Increase (Decrease) %
REVENUES:				
Products				
Cogeneration	$ 898,692	$ 1,547,761	$ (649,069)	(41.9) %
Chiller	1,935,165	1,642,478	292,687	17.8 %
Engineered accessories	104,932	16,493	88,439	536.2 %
Total products	2,938,789	3,206,732	(267,943)	(8.4) %
Services	3,842,600	3,078,604	763,996	24.8 %
Energy Production	331,141	332,774	(1,633)	(0.5) %
Total revenues	$ 7,112,530	$ 6,618,110	$ 494,420	7.5 %

Total revenues for the three months ended September 30, 2023 were $7,112,530 compared to $6,618,110 for the same period in 2022, an increase of $494,420 or 7.5% year over year.

Products

Products revenues in the three months ended September 30, 2023 were $2,938,789 compared to $3,206,732 for the same period in 2022, a decrease of $267,943, or 8.4%. The decrease in Products revenue during the three months ended September 30, 2023 is due to a $649,069, or 41.9% decrease in cogeneration sales, offset partially by an increase in chiller sales of $292,687, or 17.8% and an increase in sales of engineered accessories of $88,439, or 536.2%. Our Products sales mix, as well as Products revenue, can vary significantly from period to period as our products are high dollar, low volume sales.

Services

Service revenues in the three months ended September 30, 2023 were $3,842,600, compared to $3,078,604 for the same period in 2022, an increase of $763,996, or 24.8%. The increase in revenue during the three months ended September 30, 2023 is due primarily to the addition of $602,724 in revenue from the acquired Aegis maintenance contracts and a $161,272, or 5.2%, increase in service contract revenues from existing contracts.

Energy Production

Energy Production revenues in the three months ended September 30, 2023 were $331,141, compared to $332,774 for the same period in 2022, a decrease of $1,633, or 0.5%. The decrease in energy production revenue is a consequence of certain energy production sites that have permanently closed and seasonality.

Cost of Sales

Cost of sales in the three months ended September 30, 2023 was $4,186,509 compared to $3,724,776 for the same period in 2022, an increase of $461,733, or 12.4%. The increase in cost of sales is due to increased Services revenue and the impact of inflation on material costs. During the three months ended September 30, 2023 our gross margin decreased to 41.1% compared to 43.7% for the same period in 2022, a 2.6% percentage point decrease.

Products

Cost of sales for Products in the three months ended September 30, 2023 was $1,669,747 compared to $2,074,243 for the same period in 2022, a decrease of $404,496, or 19.5% due to decreased product revenue volume. During the three months ended September 30, 2023, our Products gross margin was 43.2% compared to 35.3% for the same period in 2022, an 7.9% percentage point increase due to price increases instituted in 2023.

Services

Cost of sales for Services in the three months ended September 30, 2023 was $2,346,384 compared to $1,482,355 for the same period in 2022, an increase of $864,029, or 58.3%, due primarily to increased labor and material costs as a consequence of acquiring the Aegis customer maintenance contracts and increased material usage at existing sites. During the three months ended September 30, 2023, our Services gross margin decreased to 38.9% compared to 51.8% for the same period in 2022, a 12.9% percentage point decrease due to increased labor and material costs incurred to replace engines at certain sites.

Energy Production

Cost of sales for Energy Production in the three months ended September 30, 2023 was $170,378 compared to $168,178 for the same period in 2022, a decrease of $2,200, or 1.3%. During the three months ended September 30, 2023 our Energy Production gross margin was 48.6% compared to 49.5% for the same period in 2022, a 0.9% percentage point decrease.

Operating Expenses

Operating expenses increased $186,685, or 6.0%, to $3,294,315 in the three months ended September 30, 2023 compared to $3,107,630 in the same period in 2022. The total operating expenses were higher primarily due to additional costs resulting from the acquisition of Aegis contracts and related assets.

	Three Months Ended			
Operating Expenses	**September 30, 2023**	**September 30, 2022**	**Increase (Decrease) $**	**Increase (Decrease) %**
General and administrative	$ 2,708,817	$ 2,343,449	$ 365,368	15.6 %
Selling	425,465	567,529	(142,064)	(25.0) %
Research and development	160,033	202,138	(42,105)	(20.8) %
Gain on disposition of assets	—	$ (5,486)	5,486	(100.0) %
Total	$ 3,294,315	$ 3,107,630	$ 186,685	6.0 %

General and administrative expenses consist of executive staff, accounting and legal expenses, office space, general insurance and other administrative expenses. General and administrative expenses for the three months ended September 30, 2023 were $2,708,817 compared to $2,343,449 for the same period in 2022, an increase of $365,368 or 15.6%, due primarily to a $229,955 increase in bad debt expense, due to the settlement achieved in 2022 with a former customer, a $58,963 increase in depreciation and amortization expense, a $50,101 increase in travel expenses and a $20,272 increase in business insurance costs.

Selling expenses consist of sales staff, commissions, marketing, travel and other selling related expenses. Selling expenses for the three months ended September 30, 2023 were $425,465 compared to $567,529 for the same period in 2022, a decrease of $142,064 or 25.0%, due primarily to a $120,788 decrease in sales commissions and an $19,341 decrease in payroll costs.

Research and development expenses consist of engineering and technical staff, materials, outside consulting and other related expenses. Research and development expenses for the three months ended September 30, 2023 were $160,033 compared to $202,138 for the same period in 2022, a decrease of $42,105 or 20.8%.

Loss from Operations

Loss from operations for the three months ended September 30, 2023 was $368,294 compared to a loss of $214,296 for the same period in 2022, an increase of $153,998. The increase is due primarily to increased Service material costs.

Other Income (Expense), net

Other expense, net for the three months ended September 30, 2023 was $78,933 compared to other expense, net of $9,420 for the same period in 2022, an increase of $69,513. The increase in other expense is due primarily to the unrealized loss on marketable securities recognized in the three months ended September 30, 2023.

Provision for State Income Taxes

The provision for state income taxes for the three months ended September 30, 2023 and 2022 was $0 and $5,922, respectively and represents estimated income tax payments, net of refunds, to various states.

Non-controlling Interest

Income attributable to the non-controlling interest was $34,346 for the three months ended September 30, 2023 which represents the non-controlling interest portion of American DG Energy's 51% owned subsidiary, American DG New York, LLC. For the same period in 2022, income attributable to the non-controlling interest was $27,074. The increase in income attributable to the non-controlling interest is due to increased revenue and lower costs at the energy production sites.

Net Loss Attributable to Tecogen Inc

The net loss attributable to Tecogen for the three months ended September 30, 2023 was $481,573 compared to a net loss of $256,712 for the same period in 2022, an increase of $224,861, or 87.6%. The increase in the net loss is due primarily to increased operating expenses and an increase in other expense in the three months ended September 30, 2023.

Nine Months Ended September 30, 2023 compared to the Nine Months Ended September 30, 2022

The following table sets forth for the periods indicated, the percentage of net sales represented by certain items reflected in our condensed consolidated statements of operations:

	Nine Months Ended	
	September 30, 2023	September 30, 2022
Revenues	100.0%	100.0%
Cost of sales	59.2%	57.6%
Gross profit	40.8%	42.4%
Operating expenses		
General and administrative	43.8%	37.3%
Selling	7.4%	7.7%
Research and development	3.3%	2.6%
Gain on disposition of assets	(0.1) %	(0.2) %
Gain on termination of unfavorable contract liability	— %	(0.3) %
Total operating expenses	54.3 %	47.1 %
Loss from operations	(13.5) %	(4.7) %
Total other income (expense), net	(0.3) %	— %
Consolidated net loss	(14.0) %	(4.7) %
Income attributable to the non-controlling interest	(0.3) %	(0.3) %
Net loss attributable to Tecogen, Inc.	(14.3) %	(5.0) %

Revenues

The following table presents revenue for the periods indicated, by segment and the change from the prior year:

	Nine Months Ended			
	September 30, 2023	September 30, 2022	Increase (Decrease) $	Increase (Decrease) %
REVENUES:				
Products				
Cogeneration	$ 1,869,699	$ 4,675,629	$ (2,805,930)	(60.0) %
Chiller	4,692,080	4,987,937	(295,857)	(5.9) %
Engineered accessories	532,777	492,762	40,015	8.1 %
Total products	7,094,556	10,156,328	(3,061,772)	(30.1) %
Services				
Maintenance services	10,931,744	9,025,966	1,905,778	21.1 %
Installation services	—	20,109	(20,109)	(100.0) %
Total Services	10,931,744	9,046,075	1,885,669	20.8 %
Energy Production	1,214,806	1,268,623	(53,817)	(4.2) %
Total revenues	$ 19,241,106	$ 20,471,026	$ (1,229,920)	(6.0) %

Total revenues for the nine months ended September 30, 2023 were $19,241,106 compared to $20,471,026 for the same period in 2022, a decrease of $1,229,920 or 6.0% year over year.

Products

Products revenues in the nine months ended September 30, 2023 were $7,094,556 compared to $10,156,328 for the same period in 2022, a decrease of $3,061,772, or 30.1%. The decrease in Products revenue during the nine months ended September 30, 2023 is due to a decrease in cogeneration sales of $2,805,930, or 60.0%, and a decrease in chiller sales of $295,857, or 5.9%, offset partially by a $40,015, or 8.1%, increase in sales of engineered accessories. Our Products sales mix, as well as Products revenue, can vary significantly from period to period as our products are high dollar, low volume sales.

Services

Services revenues in the nine months ended September 30, 2023 were $10,931,744, compared to $9,046,075 for the same period in 2022, an increase of $1,885,669, or 20.8%. The increase in revenue during the nine months ended September 30, 2023 is due primarily to the addition of $1,225,497 in revenue from the acquired Aegis maintenance contracts and a $660,172 or 7.3%, increase in service contract revenues from existing contracts.

Energy Production

Energy Production revenues in the nine months ended September 30, 2023 were $1,214,806, compared to $1,268,623 for the same period in 2022, a decrease of $53,817, or 4.2%. The decrease in Energy Production revenue is a consequence of certain Energy Production sites that were down for maintenance and system upgrades in 2023 and seasonality.

Cost of Sales

Cost of sales in the nine months ended September 30, 2023 was $11,388,750 compared to $11,783,455 for the same period in 2022, a decrease of $394,705, or 3.3%. The decrease in cost of sales is due to decreased Products revenue volume, offset partially by increased labor and material costs as a consequence of acquiring the Aegis customer maintenance contracts and increased material usage at existing Service sites. During the nine months ended September 30, 2023 our gross margin decreased to 40.8% compared to 42.4% for the same period in 2022, a 1.6% percentage point decrease due to higher labor and material costs.

Products

Cost of sales for Products in the nine months ended September 30, 2023 was $4,500,771 compared to $6,734,465 for the same period in 2022, a decrease of $2,233,694, or 33.2% due to decreased Products revenue volume, offset partially by higher material costs. During the nine months ended September 30, 2023, our Products gross margin was 36.6% compared to 33.7% for the same period in 2022, an 2.9% percentage point decrease. The increase in margin is primarily a function of price increases instituted in 2023.

Services

Cost of sales for Services in the nine months ended September 30, 2023 was $6,159,855 compared to $4,322,693 for the same period in 2022, an increase of $1,837,162, or 42.5%, due primarily to increased labor and material costs as a consequence of acquiring the Aegis customer maintenance contracts and increased material usage at existing sites. During the nine months ended September 30, 2023, our Services gross margin decreased to 43.7% compared to 52.2% for the same period in 2022, a 8.5% percentage point decrease due to increased labor and material costs incurred to replace engines at certain sites.

Energy Production

Cost of sales for Energy Production in the nine months ended September 30, 2023 was $728,124 compared to $726,297 for the same period in 2022, an increase of $1,827, or 0.3%. During the nine months ended September 30, 2023 our Energy Production gross margin was 40.1% compared to 42.7% for the same period in 2022, a 2.6% percentage point decrease. The decrease in the Energy Production gross margin is due to decreased runtime at our Energy Production sites in the nine months ended September 30, 2023 compared to the same period in 2022.

Operating Expenses

Operating expenses increased $806,933, or 8.4%, to $10,450,643 in the nine months ended September 30, 2023 compared to $9,643,710 in the same period in 2022. The total operating expenses were higher primarily due to higher salary costs, increased travel expenses, higher insurance premiums and costs related to the acquisition of Aegis contracts and related assets.

Operating Expenses	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022	Increase (Decrease) $	Increase (Decrease) %
General and administrative	$ 8,418,581	$ 7,642,183	$ 776,398	10.2 %
Selling	1,426,321	1,572,221	(145,900)	(9.3) %
Research and development	625,691	537,126	88,565	16.5 %
Gain on disposition of assets	(19,950)	(36,445)	16,495	(45.3) %
Gain on termination of unfavorable contract liability	—	(71,375)	71,375	(100.0) %
Total	$ 10,450,643	$ 9,643,710	$ 806,933	8.4 %

General and administrative expenses consist of executive staff, accounting and legal expenses, office space, general insurance and other administrative expenses. General and administrative expenses for the nine months ended September 30, 2023 were $8,418,581 compared to $7,642,183 for the same period in 2022, an increase of $776,398 or 10.2%, due primarily to a $229,955 increase in bad debt expense, due to the settlement achieved in 2022 with a former customer, a $206,912 increase in travel costs, a $182,012 increase in business insurance costs, a $125,123 increase in depreciation and amortization expense and, a $109,773 increase in consulting costs, offset partially by a $80,007 decrease in stock-based compensation.

Selling expenses consist of sales staff, commissions, marketing, travel and other selling related expenses. Selling expenses for the nine months ended September 30, 2023 were $1,426,321 compared to $1,572,221 for the same period in 2022, a decrease of $145,900 or 9.3%, due to a $211,237 decrease in sales commissions, offset partially by $62,731 increase in trade show expense.

Research and development expenses consist of engineering and technical staff, materials, outside consulting and other related expenses. Research and development expenses for the nine months ended September 30, 2023 were $625,691 compared to $537,126 for the same period in 2022, an increase of $88,565 or 16.5%, due to increased payroll costs.

We recognized a gain on termination of unfavorable contract liability of $71,375 in the nine months ended September 30, 2022 due to the closing of certain energy production sites. There were no energy production sites closed in the nine months ended September 30, 2023.

Loss from Operations

Loss from operations for the nine months ended September 30, 2023 was $2,598,287 compared to a loss of $950,653 for the same period in 2022, an increase of $1,647,634. The increase in the loss from operations is due primarily to lower Products revenue and gross profit in the nine months ended September 30, 2023 and a $806,933 increase in operating expenses.

Other Income (Expense), net

Other expense, net for the nine months ended September 30, 2023 was $63,940 compared to other expense of $900 for the same period in 2022, an increase of $63,040. Other expense increased in the nine months ended September 30, 2023
due primarily to a $56,246 increase in unrealized losses on investment securities.

Provision for State Income Taxes

The provision for state income taxes for the nine months ended September 30, 2023 and 2022 was $32,252 and $16,352, respectively and represents estimated income tax payments, net of refunds, to various states.

Non-controlling Interest

Income attributable to the non-controlling interest was $57,232 for the nine months ended September 30, 2023 which represents the non-controlling interest portion of American DG Energy's 51% owned subsidiary, American DG New York, LLC. For the same period in 2022, income attributable to the non-controlling interest was $55,616.

Net Income (Loss) Attributable to Tecogen Inc

The net loss attributable to Tecogen for the nine months ended September 30, 2023 was $2,751,711 compared to a net loss of $1,023,521 for the same period in 2022, an increase of $1,728,190, or 168.8%. The increase in the net loss is due primarily to lower Products revenue and gross profit and increased operating expenses in the nine months ended September 30, 2023.

Liquidity and Capital Resources

The following table presents a summary of our net cash flows from operating, investing and financing activities:

	Nine Months Ended		
Cash Provided by (Used in)	**September 30, 2023**	**September 30, 2022**	**Increase (Decrease)**
Operating activities	$ (1,020,250)	$ (433,810)	$ (586,440)
Investing activities	(247,558)	(300,493)	52,935
Financing activities	—	—	—
Change in cash and cash equivalents	$ (1,267,808)	$ (734,303)	$ (533,505)

Consolidated working capital at September 30, 2023 was $11,467,725 compared to $14,344,288 at December 31, 2022, a decrease of $2,876,563, or 19.5%. Included in working capital were cash and cash equivalents of $646,161 at September 30, 2023, compared to $1,913,969 at December 31, 2022, a decrease of $1,267,808, or 66.2%.

Cash Flows from Operating Activities

Cash used in operating activities for the nine months ended September 30, 2023 was $1,020,250 compared to $433,810 of cash used by operating activities for the same period in 2022, an increase of $586,440, or 135.2%. Our accounts receivable and unbilled revenue balances were $7,694,571 and $1,748,336, respectively, at September 30, 2023 compared to $6,714,122 and $1,805,330 at December 31, 2022, which reduced cash by $1,324,448 and increased cash by $56,994, respectively. Inventories increased $165,537 during the nine months ended September 30, 2023 due to acquiring inventory based on forecasted revenue. During the three months ended March 31, 2023 we collected the majority of the outstanding Employee Retention Credit receivables, providing $667,121 of cash from operations.

Accounts payable increased to $4,493,758 as of September 30, 2023 from $3,261,952 at December 31, 2022, providing $1,140,759 in cash flow from operations. The increase in accounts payable was due to increased inventory procured in the nine months ended September 30, 2023. Deferred revenue increased as of September 30, 2023 compared to December 31, 2022, providing $458,512 of cash from operations. We expect accounts payable and deferred revenue to fluctuate with routine changes in operations.

Cash Flows from Investing Activities

During the nine months ended September 30, 2023 we used $247,558 in cash from investing activities. We used $170,000 of cash to acquire certain assets as part of the Aegis acquisition, used $31,728 of cash to purchase property, plant and equipment, and distributed $62,693 to the 49% non-controlling interest holders of American DG New York LLC, partially offset by the receipt of $16,863 in proceeds from the disposition of assets.

For the nine months ended September 30, 2022 cash used in investing activities was $300,493. During the nine months ended September 30, 2022 we used $286,820 of cash to purchase property, plant and equipment, $29,505 to acquire intangible assets, and distributed $56,823 to the non-controlling interest holders of American DG New York LLC, partially offset by receipt of $72,655 in insurance and other proceeds from the disposition of assets.

Cash Flows from Financing Activities

During the nine months ended September 30, 2023 and 2022, there were no cash flows from financing activities.

Backlog

As of September 30, 2023, our backlog of product and installation projects, excluding service contracts, was $7,515,922, consisting of $6,515,323 of purchase orders received by us and $1,000,599 of projects in which the customer's internal approval process is complete, financial resources have been allocated and the customer has made a firm verbal commitment that the order is in the process of execution. Backlog at the beginning of any period is not necessarily indicative of future performance. Our presentation of backlog may differ from other companies in our industry.

Liquidity

At September 30, 2023, we had cash and cash equivalents of $646,161, a decrease of $1,267,808 or 66.2% from the cash and cash equivalents balance at December 31, 2022. During the nine months ended September 30, 2023, our Products revenue was negatively impacted. Our Products have long sales cycles and the reduced business development activity in the aftermath of COVID-19 resulted in what we believe is a temporary reduction in Products revenue.

Based on our current operating plan, we believe existing resources, including existing cash, cash flows from operations and the funds available to us under loans from certain related parties will be sufficient to meet our working capital requirements for the next twelve months. However, we may need to generate sufficient additional cash from operations to finance the company during the periods beyond twelve months.

On October 9, 2023, we entered into an agreement with each of John N. Hatsopoulos, a director and principal shareholder of registrant, and Earl R. Lewis, III, a director, pursuant to which Mr. Hatsopoulos agreed to provide financing to us of up to $1 million, and Mr. Lewis agreed to provide financing to us of $500,000, and potentially an additional $500,000 at his discretion. On October 10, 2023, we issued a promissory note and borrowed $500,000 from Mr. Hatsopoulos. The loan bears interest at 5.12% per annum and is repayable one year from the date of the issuance of the related promissory note. The proceeds of the loans are expected to be used for general working capital purposes.

If sufficient funds from operating activities are not available to finance our business and operations, we may need to raise additional capital through debt financing or an equity offering to meet our operating and capital needs. There can be no assurance we will be able to raise such additional debt or equity financing or upon terms that are acceptable to us.

Significant Accounting Policies and Critical Estimates

Our significant accounting policies are discussed in the Notes to our Consolidated Financial Statements in our Annual Report on Form 10-K for the year ended December 31, 2022. The accounting policies and estimates that can have a significant impact upon our operating results, financial position and footnote disclosures are described in the above notes and in the Annual Report.

Significant New Accounting Standards or Updates Not Yet Effective

The Company's critical accounting policies have remained consistent as discussed in our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on March 23, 2023.

See Note 1, *Description of Business and Basis of Presentation*, to the Condensed Consolidated Financial Statements included elsewhere in this Quarterly Report on Form 10-Q.

Seasonality

The majority of our chilling systems sold will be operational for the summer. Demand for our service team is higher in the warmer months when cooling is required. Chiller units are generally shut down in the winter and started up again in the spring. The chiller "busy season' for the service team generally runs from May through the end of September. Our cogeneration sales are not generally affected by seasonality.

Off-Balance Sheet Arrangements

Currently, we do not have any material off-balance sheet arrangements, including any outstanding derivative financial instruments, off-balance sheet guarantees, interest rate swap transactions or foreign currency contracts. We do not engage in trading activities involving non-exchange traded contracts.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

Not applicable.

Item 4. Controls and Procedures.

Management's Evaluation of Disclosure Controls and Procedures:

As of the end of the period covered by this Report, our Chief Executive Officer and Chief Financial Officer ("Certifying Officer") conducted evaluations of our disclosure controls and procedures. As defined in Rule 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended ("Securities Exchange Act"), the term "disclosure controls and procedures" means controls and procedures of an issuer that are designed to ensure the information required to be disclosed by the issuer in the reports that it files or submits under the Section 13(a) or 15(d) is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's ("SEC") rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under Section 13(a) or 15(d) of the Securities Exchange Act is accumulated and communicated to the issuer's management, including the Certifying Officers, to allow timely decisions regarding required disclosure.

Our disclosure controls and procedures are designed to provide reasonable assurance that the control system's objectives will be met. Our management, including our Chief Executive Officer and Chief Financial Officer, after evaluating the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Report, have concluded that our disclosure controls and procedures were not effective due to a material weakness with respect to a small number of individuals dealing with general controls over information technology. Management is taking steps to remediate the weaknesses as resources become available.

Changes in Internal Control over Financial Reporting:

There were no changes in our internal controls over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act) during the period covered by this Report that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

PART II - OTHER INFORMATION

Item 1. Legal Proceedings

Except as set forth below, we are not a party to any material pending legal proceedings.

On November 23, 2022, we were served with a suit filed against us on August 24, 2022 in the Ontario Superior Court of Justice by The Corporation of the Town of Milton, Milton Energy Generation Solutions Inc. and Milton Hydro Distribution Inc (the "Plaintiffs"), all of whom are municipal corporations incorporated in the Province of Ontario. The plaintiffs sued for damages in the amount of CDN $1,000,000, pre-judgment and post-judgment interest, legal fees, and any further relief the court may deem, alleging breach of contract, breach of warranty, negligent misrepresentations and nuisance. Plaintiffs allege that on or about July 10, 2022, a Tecogen cogenerator installed by us at the plaintiffs facility caught fire, causing damage to the cogenerator and the plaintiff's facility. We have filed a response denying liability and are being represented by Canadian counsel. For the year ended December 31, 2022, we reserved $150,000 for anticipated damages which may not be covered by our insurance and continue to maintain the reserve at September 30, 2023.

Item 1A. Risk Factors

In addition to the other information set forth in this report, you should carefully consider the factors discussed under "Item1A - Risk Factors" and elsewhere in our Annual Report on Form 10-K for our fiscal year ended December 31, 2022 ("2022 Form 10-K") The risks discussed in our 2022 Form 10-K could materially affect our business, financial condition and future results. The risks described in our 2022 Form 10-K are not the only risks we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially and adversely affect our business, financial condition or operating results. The following material change to our risk factors since filing our 2022 Form 10-K is as follows:

Losses or unauthorized access to or releases of confidential information, including personal information, could subject us to significant reputational, financial, legal and operational consequences.

Our business requires us to use and store confidential information, including personal information, with respect to our customers and employees and also requires us to share confidential information with suppliers and other third parties. We rely on suppliers that are also exposed to ransomware and other malicious attacks that can disrupt business operations. Although we take steps to secure confidential information that is provided to or accessible by third parties working on our behalf, such measures may not always be effective and losses or unauthorized access to or releases of confidential information occur. Such incidents and other malicious attacks could materially adversely affect our business, reputation, results of operations and financial condition.

We have experienced malicious attacks and other attempts to gain unauthorized access to our systems, including the ransomware attack on our computer network which occurred on April 28, 2023 which required that we limit user access, remove the hard drives from two affected workstations from service and restore network files from systems backups. Our network returned to full operation on May 1, 2023. Since this incident, we have implemented changes to user access passwords, conducted a full audit of user accounts and implemented multi-factor authentication for network and workstation access. These attacks seek to compromise the confidentiality, integrity or availability of confidential information or disrupt normal business operations, and could, among other things, impair our ability to attract and retain customers for its products and services, impact our stock price, materially damage commercial relationships, and expose us to litigation or government investigations, which could result in penalties, fines or judgments against us. Globally, attacks are expected to continue accelerating in both frequency and sophistication with increasing use by actors of tools and techniques that are designed to circumvent controls, avoid detection, and remove or obfuscate forensic evidence, all of which hinders our ability to identify, investigate and recover from incidents. In addition, attacks against us and our customers can escalate during periods of severe diplomatic or armed conflict.

We have implemented systems and processes intended to secure our information technology systems and prevent unauthorized access to or loss of sensitive data, and mitigate the impact of unauthorized access, including through the use of encryption and authentication technologies and we continue to undertake regular reviews of our IT infrastructure and have investigated improved software and hardware cyber threat protection solutions. But these measures cannot provide absolute security, and losses or unauthorized access to or releases of confidential information occur and could materially adversely affect our business, reputation, results of operations and financial condition.

Item 2. Unregistered Sales of equity Securities and Use of Proceeds

None.

Item 3. Defaults in Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

Exhibit No.	Description of Exhibit
10.1	Note Subscription Agreement dated October 9, 2023 by John H. Hatsopoulos, incorporated herein by reference to Exhibit 99.01 to the registrant's Current Report on Form 8-K filed with the SEC on October 10, 2023
10.2	Note Subscription Agreement dated October 9, 2023 by Earl R. Lewis, III, incorporated herein by reference to Exhibit 99.02 to the registrant's Current Report on Form 8-K filed with the SEC on October 10, 2023
31.1*	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1**	Certification of Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. 1350, as adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS**	XBRL Instance Document
101.SCH**	XBRL Taxonomy Extension Schema
100.CAL**	XBRL Taxonomy Extension Calculation Linkbase
100.DEF**	XBRL Taxonomy Extension Definition Linkbase
101.LAB**	XBRL Taxonomy Extension Label Linkbase
101.PRE**	XBRL Taxonomy Extension Presentation Linkbase

* Filed herewith
** Furnished herewith
\+ Compensatory plan or arrangement

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned.

TECOGEN INC.
(Registrant)

Dated: November 9, 2023

By: /s/ Abinand Rangesh
Abinand Rangesh
Chief Executive Officer and Chief Financial Officer
(Principal Executive Officer and Principal Financial Officer)

EXHIBIT 31.1

TECOGEN INC.
CERTIFICATION REQUIRED BY EXCHANGE ACT RULES 13a-14(a) and 15d-14(a),
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Abinand Rangesh, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Tecogen Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   c. Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   d. Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting.
5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: November 9, 2023

/s/ Abinand Rangesh
Abinand Rangesh
Chief Executive Officer and Chief Financial Officer

EXHIBIT 32.1

TECOGEN INC.
CERTIFICATION REQUIRED BY EXCHANGE ACT RULES 13a-14(b) and 15d-14(b),
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Abinand Rangesh, Chief Executive Officer and Chief Financial Officer, of Tecogen Inc., or the Company, certify, pursuant to Section 1350, Chapter 63 of Title 18, United States Code that, to his knowledge:

1. The Quarterly Report on Form 10-Q of the Company for the quarter ended September 30, 2023 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78 m or 78o(d)); and
2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 9, 2023

/s/ Abinand Rangesh
Abinand Rangesh
Chief Executive Officer and Chief Financial Officer