

ALBANY COUNTY BUSINESS
DEVELOPMENT CORPORATION
AL TECH LOAN FUND
FINANCING TO FUEL BUSINESS GROWTH

Albany County Business Development Corporation

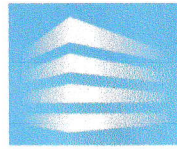
Board of Directors Meeting
Virtual – Microsoft Teams

May 19, 2022
8:30 AM

AGENDA

Welcome

- | | |
|---|-----------------------------------|
| 1. Review of April 21, 2022 Minutes | Allen Maikels |
| 2. Review of April 2022 Financials | Amy Thompson and
Allen Maikels |
| 3. Signing Resolution / Loan Approval Resolution | Madeline Kauffman |
| 4. New Loan Request
Pivotal Optics
Energy Catalyst Technologies | Kevin Catalano |
| 5. Renewal
Indra Holdings | Kevin Catalano |
| 6. Alliance CEO Report | Kevin O'Connor |
| 7. Other Business | |
| 8. Adjournment | Allen Maikels |



ALBANY COUNTY BUSINESS
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**Board of Directors Meeting Minutes
April 25, 2022**

DIRECTORS PRESENT	Allen Maikels, Marcus Pryor, Pamela Lansing, Jeffrey Stone, George Penn
DIRECTORS ABSENT	Andrew Joyce
COUNSEL PRESENT	Madeline Kauffman
AACA STAFF PRESENT	Kevin O'Connor, Melanie LaRose, Kevin Catalano, Luc Rogers
GUEST PRESENT	Caitlin O'Brien, representing Albany County Legislature Chairman- Andrew Joyce Amy Thompson- CFO-For Hire/BST

Mr. Maikels called the meeting to order at 8:39 a.m.

Mr. Maikels presented the Minutes from the March 17, 2022, meeting. Ms. Lansing motioned to approve, Mr. Stone seconded, and all were in favor.

Ms. Thompson presented March 2022, Financials. Ms. Lansing motioned to approve, Mr. Pryor seconded, and all were in favor.

Ms. Thompson presented Agency Voucher to reimburse the Alliance for first quarter expenses. Mr. Stone motioned to approve, Ms. Lansing seconded, and all were in favor.

Mr. Catalano presented New Loan Request for 1020 Adventures, LLC. Mr. Maikels motioned to approve, Ms. Lansing seconded, and all were in favor. Once all conditions precedent to closing have been satisfied, the ACBDC is authorized to fund and close the loan transaction, including the execution by the Advance Albany County Alliance, as agent of ACBDC, of all documents required to be executed in connection therewith.

Mr. Catalano presented Renewal for The Two Betty's. Ms. Lansing motioned to approve, Mr. Pryor seconded, and all were in favor.

Mr. Catalano started Other Business providing the Board an update on some new request as well as current interest rates. Mr. O'Connor gave an update on Advance Albany County Alliance- STAGE Act, 2022 IPF Conference, Albany County Shovel Ready Site Analysis, and the Broadband project.

Ms. Lansing motioned to adjourn the meeting at 9:05 a.m., Mr. Pryor seconded, and all were in favor.

Respectfully submitted,

Allen Maikels, Secretary/Treasurer

Albany County Business Development Corporation
Statement of Net Position
As of April 30, 2022

	<u>Total</u>
ASSETS	
Current Assets	
Bank Accounts	
Restricted Cash	
10220 - M&T MM 3324 ALTECH ACBDC	4,514,201.57
10250 - M&T 4113 AI Tech Operating	3,267,763.21
Total Restricted Cash	<u>\$ 7,781,964.78</u>
Unrestricted Cash	
10210 - M&T ACBDC Corp Checking 4105	21,354.82
10255 - M&T 3994 CRAF Operating	3.00
Total Unrestricted Cash	<u>\$ 21,357.82</u>
Total Bank Accounts	<u>\$ 7,803,322.60</u>
Accounts Receivable	
14615 - Loans Receivable-AI Tech LT	11,774,458.21
14620 - Bad Debt Allowance	-88,594.00
15150 - Accrued Loan Interest	32,262.00
Total Accounts Receivable	<u>\$ 11,718,126.21</u>
Total Current Assets	<u>\$ 19,521,448.81</u>
Fixed Assets	
16000 - Furniture & Fixtures	6,588.00
16999 - Accumulated Depreciation	-6,588.00
Total Fixed Assets	<u>\$ 0.00</u>
TOTAL ASSETS	<u>\$ 19,521,448.81</u>
LIABILITIES AND EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
1-20150 - Accrued Expenses	5,000.00
20015 - Deferred Loan Interest	277.00
20050 - Due to the Chamber	2.74
20051 - Due to Advance Albany Co Alliance	79,712.28
Total Accounts Payable	<u>\$ 84,992.02</u>
Total Current Liabilities	<u>\$ 84,992.02</u>
Total Liabilities	<u>\$ 84,992.02</u>
Net Position	
28615 - Trust Assets	15,650,961.00
30000 - Net Assets	6,176,905.00
Retained Earnings	-2,437,548.24
Net Operating Revenues	46,139.03
Total Net Position	<u>\$ 19,436,456.79</u>
TOTAL LIABILITIES & NET POSITION	<u>\$ 19,521,448.81</u>

***These financial statements omit the statement of cash flow and substantially all disclosures required by US GAAP.
They have not been subjected to an audit, review or compilation agreement, and therefore no assurance is provided on them.***

Albany County Business Development Corporation
Statement of Revenue, Expenses and Changes in Net Position
YTD April 2022

	Total
Operating Revenues	
41000 - Application Fees	500.00
44000 - Bank Interest	391.88
44050 - Loan Interest Earned	124,959.43
Total Operating Revenues	\$ 125,851.31
Gross Profit	\$ 125,851.31
Operating Expenses	
50035 - Agency Fee	79,712.28
Total Operating Expenses	\$ 79,712.28
Net Operating Income	\$ 46,139.03
Change in Net Position	\$ 46,139.03
Net Position (Beginning of Period)	19,421,807
Net Position (End of Period)	19,467,946

Albany County Business Development Corporation
Budget vs. Actuals: 2022 Budget - FY22 P&L
YTD April 2022

	Actual	Budget	Budget Variance	% of Budget
Operating Revenues				
41000 - Application Fees	500.00	1,000.00	(500.00)	0.00%
44000 - Bank Interest	391.88	1,300.00	(908.12)	30.14%
44050 - Loan Interest Earned	124,959.43	130,000.00	(5,040.57)	96.12%
Total Operating Revenues	\$ 125,851.31	\$ 132,300.00	-\$ 6,448.69	95.13%
Operating Expenses				
50035 - Agency Fee	79,712.28	100,000.00	(20,287.72)	79.71%
Bad Debt Writeoff	0.00	30,000.00	(30,000.00)	0.00%
Total Operating Expenses	\$ 79,712.28	\$ 130,000.00	-\$ 50,287.72	61.32%
Change in Net Position	\$ 46,139.03	2,300.00	\$ 43,839.03	2006.04%

***These financial statements omit the statement of cash flow and substantially all disclosures required by US GAAP.

They have not been subjected to an audit, review or compilation agreement, and therefore no assurance is provided on them.***

ALBANY COUNTY BUSINESS DEVELOPMENT CORPORATION

BOARD OF DIRECTORS RESOLUTION

WHEREAS, pursuant to a certain Grant Agreement dated February 16, 1976 (the “**Grant Agreement**”) by and between the New York State Department of Commerce – Trust Fund 226-01, and the United States Department of Commerce, Economic Development Administration (the “**EDA**”), a \$10 million grant under Title IV of the Public Works and Economic Development Act (the “**Grant**”) was awarded to the New York State Department of Commerce to make a loan to the Al Tech Specialty Steel Corporation to purchase two steel manufacturing plants in each of Albany County and Chautauqua County in New York State, which loan funds were, upon repayment, to be used to make loans for economic development in these two counties; and

WHEREAS, the New York State Job Development Authority (“**JDA**”) was designated by the New York State Department of Commerce to receive the aforesaid loan repayments from the Albany County steel manufacturing plant purchase, which thereafter used the repayment monies to capitalize a revolving loan fund for Albany County businesses (the “**Al Tech Fund**”), to be administered under and subject to the terms of the Grant Agreement and the applicable EDA regulations; and

WHEREAS, by Transfer Agreement dated August 15, 2006 between JDA and Albany County Business Development Corporation (the “**ACBDC**” or the “**Corporation**”), with the consent of EDA, the Al Tech Loan Revolving Loan Fund (both funds and Outstanding Loans (as defined in the Transfer Agreement)) and all rights and obligations under the Grant Agreement were transferred and assigned to and assumed by the ACBDC; and

WHEREAS, the ACBDC entered into a certain Agency Agreement effective as of July 1, 2006 with Albany-Colonie Regional Chamber of Commerce, Inc. (the “**A-C Chamber**”) providing for the A-C Chamber to perform certain loan administration and management functions for the Al Tech Fund (the “**Prior Agency Agreement**”); and

WHEREAS, with the consent of the ACBDC, the rights and obligations of the A-C Chamber under the Prior Agency Agreement were assigned to and assumed by the Capital Region Chamber of Commerce, Inc. (the “**Regional Chamber**”) by Assignment and Assumption of Agency Agreement dated as of July 21, 2016; and

WHEREAS, the Prior Agency Agreement expired and terminated as of June 30, 2021; and

WHEREAS, the ACBDC entered into an Agency Agreement effective as of July 1, 2021 with the Advance Albany County Alliance Local Development Corporation (the “**Advance Albany County Alliance**”) providing for administration of the Al Tech Fund by the Advance Albany County Alliance commencing on that date (the “**Agency Agreement**”); and

WHEREAS, pursuant to that certain Agreement to Release the EDA Federal Interest in a Revolving Loan Fund Award, executed by the EDA on March 9, 2022 and the ACBDC thereafter, the EDA released its interest in the Al Tech Fund, subject to the terms thereof; and

WHEREAS, the Board of Directors of the Corporation desires to ratify and confirm the authority of the Chairperson, Vice Chairperson, Treasurer, or Secretary of the Corporation, and the Chief Executive Officer, Chief Operating Officer, and/or Director of Commercial Lending of the Advance Albany County Alliance, as agents of the Corporation, to sign, execute, and acknowledge certain documents, to take certain actions, and to sign, execute, and acknowledge under seal of the Corporation, as applicable, any and all other instruments in writing necessary or desirable in connection with the usual business of the Corporation.

NOW, THEREFORE, BE IT RESOLVED, that the Chairperson, Vice Chairperson, Treasurer, or Secretary of the Corporation, and the Chief Executive Officer, Chief Operating Officer, or the Director of Commercial Lending of the Advance Albany County Alliance, as agents of the Corporation, be and each hereby are authorized in the name and on behalf of the Albany County Business Development Corporation, to (a) sign, execute, and acknowledge, under seal of the Corporation as and where applicable, warranty deeds, foreclosure deeds, other deeds transferring real estate, and discharges of mortgages; (b) take action as necessary, in the acquiring, possessing, selling, transferring, exchanging or otherwise disposing of any and all forms of securities, certificates of deposit, financial instruments, mortgages, or security agreements (including, without limitation, bonds, notes, options, pledges, and certificates of indebtedness and interest of any and every kind or nature, whether secured or unsecured or evidenced by certificates or otherwise); (c) institute proceedings to foreclosure mortgages; (d) make entry to foreclose real estate mortgages; (d) sign certificates of entry and to do all necessary acts to complete mortgage foreclosure actions and proceedings; (e) take action as necessary in the acquiring, possessing, selling, transferring, exchanging or otherwise disposing of any and all forms of securities, certificates of deposit, financial instruments, mortgages, or security agreements (including, without limitation, bonds, notes, options, pledges, and certificates of indebtedness and interest of any and every kind or nature, whether secured or unsecured or evidenced by certificates or otherwise); and (f) sign, execute, and acknowledge, under seal of the Corporation as and where applicable, any and all other instruments in writing necessary or desirable in connection with the usual business of the Albany County Business Development Corporation.

**ADVANCE ALBANY COUNTY ALLIANCE
LOCAL DEVELOPMENT CORPORATION**

MEMORANDUM

To:	
From:	Kevin Catalano, Senior Vice President & Director of Commercial Lending
Date:	
Re:	Loan to <i>[fill in Applicant/Borrower Name]</i>

Reference is made to the loan application submitted by _____ *[fill in name of Applicant/Borrower]* and approved by the Board of Directors of the Albany County Business Development Corporation on _____ *[fill in date]*. A copy of the Minutes of the Meeting of the Board of Directors approving this loan application accompany this Memo.

Please be advised that all conditions precedent to the closing of the loan transaction have been satisfied as of the date hereof, and funding of the loan is requested.

Please let me know if you have any questions or need any further information.

Albany County Business Development Corp.
Al Tech Loan Fund
Loan Proposal
May 19, 2022

BORROWER: Pivotal Optics, Inc.

REQUEST: \$300,000 (Three-Hundred Thousand Dollars)

TERM: 5-year term and amortization

RATE: 75% of the prime rate at time of closing.

PROJECT: Funds will be used for working capital and inventory to a new technology / hardware company in the telecom space.

The sources and uses of the proposed project financing are follows:

SOURCES		USES	
Al Tech Funds	\$300,000	Inventory	\$200,000
Owners Equity	220,000	Sales Staff	320,000
Bank Financing			
Total	\$520,000	Total	\$520,000

- The \$220,000 is in addition to \$187,000 the owners put in to start the business
- Inventory growth is significant as turnaround times for clients is most important

COLLATERAL: Collateral for the Al Tech loan will be a first UCC Lien on all business assets of Pivotal Optics, Inc.

GUARANTORS: The Loan will require the unlimited personal guarantees of both James Pascarell and Thomas Adamec.

BACKGROUND: (provided as part of Application)

Pivotal Optics manufactures Fiber Optic Transceivers (Optics) for Telecom and Enterprise customers. The Pivotal leadership team consists of industry experts with 100+ years combined experience operating technology companies focused on working with customers to develop solutions to save significant money while helping to future proof their network.

Pivotal is a US based company that has been built to scale. From day one we have invested in the technology and people required to support the company's growth. We implemented an ERP system from day one to automate production, shipping, and inventory control. Using our tools and expertise we have streamlined operations to maximize output while minimizing cost. We also have developed a comprehensive reseller program to assist in the support of customers.

Pivotal's fiber solutions enable companies to grow network capacity and keep pace with network demands driven by the ever-growing bandwidth requirements of evolving IT applications, IoT, and new communications technologies like 5G. We provide a variety of fiber optic solutions with different capabilities from 1G to 800G and beyond.

Our products are coded to operate exactly like the transceivers sold by the OEM network hardware vendors. They come with a lifetime warranty and are priced to save customers significant money over the OEM optic solutions.

Pivotal Optics has built a robust supply chain based on long standing relationships with major first-in-class suppliers from diverse countries and geographies to ensure product availability and volumes required to meet customers' requirements. This protects against geographical incidents that may impact lead times and cost. Our proactive supplier qualification streamlines and improves response time and helps to ensure quality.

We work with our customers to support them in the evolution of their network with the highest quality products and at a price that will save them money.

- Ⓟ **Key Resources** - 100+ years combined experience operating technology company. Executive leadership, sales & marketing, finance, third engineering and operations.
- Ⓟ **Quality Product** – Use only Tier 1 quality raw materials purchased from known suppliers. All new suppliers are fully vetted prior to being onboarded. QA testing is completed prior to shipping.
- Ⓟ **Supplier Diversification** – Long standing relationship with major first-in-class suppliers from diverse countries and geographies to ensure product availability and volumes required to meet customers' requirements. Protects against geographical incidents that may impact lead times and cost. Proactive supplier qualification streamlines and improves response time.
- Ⓟ **Warranty And Support** – Limited lifetime warranty with tiered replacement timeframe of failed part-based criticality of network. Engineer support 24x7.

- ④ **Reliable Coding to Specification** – Transceivers coded to the specific platform requirements to ensure interoperability. Multi-platform and custom coding solutions are available. Coded to MSA specification at a minimum.
- ④ **Engineering Support** – Remote, on-site, and resident engineering support. Customer facing engineers to help in the development and validation of solutions. Knowledgeable customer support team to help track orders, product delivery, and RMA processing.
- ④ **Inventory When You Need It** – Stock inventory of high runner products to ensure quick delivery. Standard lead time 5-7 days. Will work with customers to develop inventory management programs to meet their specific requirements and help mitigate project risk.
- ④ **Scalability** – US based coding, testing, and certification. ERP system implemented from day one to automate production, labeling, shipping, and inventory control. Optimized operations process to maximize output while minimizing cost. Comprehensive reseller program to assist in the support of customers.
- ④ **Fair Pricing** – credited to low overhead, streamlined operations, and diverse mature supply chain.
- ④ **Mature Company Capabilities** – Experience supporting large customers using structure and governance without the overhead that usually comes with it.

FINANCIALS:

See attached financial information:

2-years of projections for Pivotal Optics

2021 Tax Returns for Pivotal Optics

2020 Personal tax returns and PFS for James Pascarell

2020 Personal tax returns and PFS for Thomas Adamec

ECONOMIC IMPACT: The borrower was referred to ACBDC by Key Bank, due to the company being a startup (under 2 years old). The Borrower feels they can double their workforce to 14 within 3 years, 2 positions will be entry-level starting around \$40K annually plus bonus. 5 positions will exceed \$75K annually plus commission.

STRENGTHS

- Sales are improving, funds will be used to expand inventory and increase the sales team
- Fits the mission of the fund
- Growing company with good client base and experience in the industry

WEAKNESS:

- While the company is a start-up, 3 owners have been in the industry for years
- Limited collateral, loan is based on owner's knowledge and combined experience
- Client concentration, 5 Companies currently represent 70% of revenues

OTHER TERMS AND CONDITIONS

- Assignment of life insurance on the lives of James Pascarell and Thomas Adamec in the amount of \$150,000 each

Pivotal Optics, Inc.
Profit & Loss Projection
2022-2023

	Actual												
	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	TOTAL
Sales	17,497	26,799	18,008	24,638	60,000	100,000	125,000	150,000	200,000	300,000	350,000	400,000	1,771,942
Returns & Allowances													
Total Sales Revenue	17,497	26,799	18,008	24,638	60,000	100,000	125,000	150,000	200,000	300,000	350,000	400,000	1,771,942
Freight Revenue	32	163	127	223									545
Total Other Revenue	32	163	127	223	-	-	-	-	-	-	-	-	545
Cost of Sales	10,272	13,418	10,342	11,888	28,200	47,000	58,750	70,500	94,000	141,000	164,500	188,000	837,870
Purchase Price Variance	868	(50)	240	(46)									1,012
Freight Expense	1,074	702	567	618	720	1,200	1,500	1,800	2,400	3,600	4,200	4,800	23,181
Tariff/ Custom Fees	1,673	2,898	1,840	730	1,380	2,300	2,875	3,450	4,600	6,900	8,050	9,200	45,896
Packaging & Shipping Materials					300	500	625	750	1,000	1,500	1,750	2,000	8,425
Total COGS	13,887	16,968	12,989	13,190	30,600	51,000	63,750	76,500	102,000	153,000	178,500	204,000	916,384
Gross Profit	3,642	9,994	5,146	11,671	29,400	49,000	61,250	73,500	98,000	147,000	171,500	196,000	856,103
Gross Margin	20.8%	37.3%	28.6%	47.4%	49.0%	49.0%	49.0%	49.0%	49.0%	49.0%	49.0%	49.0%	48.3%
Salary & Wages- Executive					-	-	-	-	-	-	-	-	-
Salary & Wages- Admin	3,462	3,635	3,808	3,635	3,808	3,808	3,635	3,981	3,808	3,635	3,808	3,808	44,828
Salary & Wages- Engineering	7,083	7,083	7,083	7,083	13,333	13,333	13,333	13,333	13,333	13,333	13,333	13,333	134,999
Salary & Wages- Sales	3,462	5,000	5,000	17,272	18,750	31,250	31,250	31,250	31,250	31,250	31,250	31,250	268,234
Commissions		2,000			4,800	8,000	10,000	12,000	16,000	24,000	28,000	32,000	136,800
Bonuses													-
Payroll Taxes	1,684	1,983	1,384	2,687	2,995	4,151	4,285	4,458	4,740	5,316	5,623	5,918	45,224
Medical & Dental	9,239	10,959	10,031	10,723	11,450	11,450	11,450	11,450	11,450	11,450	11,450	11,450	132,552
NYS Mandated DBL & PFL	122	103	112	50	120	120	120	120	120	120	120	120	1,347
Legal			291		200	200	200	200	200	200	200	200	1,891
Accounting												4,500	4,500
Consultants		5,145	45		75	75	75	75	75	75	75	75	5,790
Travel & Lodging	297	406		449	2,500	5,000	5,000	5,000	5,000	5,000	5,000	5,000	38,652
Meals & Entertainment	437	724	704	1,278	2,000	2,500	2,500	2,500	2,500	2,500	2,500	2,500	22,643
IT & Lab Equipment (Not Capitalized)	6,189	447	1,100		500	500	500	500	500	500	500	500	11,736
Software & Services	1,851	1,871	1,871	1,871	2,250	2,500	2,500	2,500	2,500	2,500	2,500	2,500	27,214
Promotional Items				162									162
Rent	4,533	4,533	4,533	4,533	4,535	4,535	4,535	4,535	4,535	4,535	4,535	4,535	54,412
Internet & Telephone	230	230	230	230	250	250	250	250	250	250	250	250	2,920
Cell Phones	150	150	150	225	150	150	150	150	150	150	150	150	1,875
Office Supplies	937	387	1,147	49	750	750	750	750	750	750	750	750	8,520
Insurance- Business	661	691	691	452	661	661	661	661	661	661	661	661	7,786
Postage & Shipping	126	31	175	53	50	50	50	50	50	50	50	50	785
R&D Expense					200	200	200	200	200	200	200	200	1,600
Bank/ ADP Processing Fees	239	562	199	277	300	300	300	300	300	300	300	300	3,677
Other Income / Expense													-
Total Operating Expenses	40,702	45,940	38,554	51,029	69,678	89,783	91,745	94,264	98,372	106,775	111,255	120,050	958,147
EBITDA	(37,060)	(35,946)	(33,408)	(39,358)	(40,278)	(40,783)	(30,495)	(20,764)	(372)	40,225	60,245	75,950	(102,044)
EBITDA Margin	-211.8%	-134.1%	-185.5%	-159.7%	-67.1%	-40.8%	-24.4%	-13.8%	-0.2%	13.4%	17.2%	19.0%	-5.8%
Depreciation	597	648	648	676	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	22,569
EBIT	(37,657)	(36,594)	(34,056)	(40,034)	(42,778)	(43,283)	(32,995)	(23,264)	(2,872)	37,725	57,745	73,450	(124,613)
Net Interest Expense/Income			173										173
Income Taxes- Federal	-	-	-	-	-	-	-	-	-	-	-	-	-
Income Taxes- State													-
Sales Tax	292	223	239	135	100	100	100	100	100	100	100	100	1,689
Net Income (Loss)	(37,949)	(36,817)	(34,468)	(40,169)	(42,878)	(43,383)	(33,095)	(23,364)	(2,972)	37,625	57,645	73,350	(126,475)
NI %	-216.9%	-137.4%	-191.4%	-163.0%	-71.5%	-43.4%	-26.5%	-15.6%	-1.5%	12.5%	16.5%	18.3%	-7.1%

Pivotal Optics, Inc.
Profit & Loss Projection
2022-2023

	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	TOTAL
Sales	425,000	450,000	500,000	550,000	600,000	600,000	750,000	750,000	750,000	750,000	750,000	750,000	7,625,000
Returns & Allowances													
Total Sales Revenue	425,000	450,000	500,000	550,000	600,000	600,000	750,000	750,000	750,000	750,000	750,000	750,000	7,625,000
Freight Revenue													
Total Other Revenue	-	-	-	-	-	-	-	-	-	-	-	-	-
Cost of Sales	191,250	202,500	225,000	247,500	270,000	270,000	337,500	337,500	337,500	337,500	337,500	337,500	3,431,250
Purchase Price Variance													
Freight Expense	5,100	5,400	6,000	6,600	7,200	7,200	9,000	9,000	9,000	9,000	9,000	9,000	91,500
Tariff/ Custom Fees	9,775	10,350	11,500	12,650	13,800	13,800	17,250	17,250	17,250	17,250	17,250	17,250	175,375
Packaging & Shipping Materials	2,125	2,250	2,500	2,750	3,000	3,000	3,750	3,750	3,750	3,750	3,750	3,750	38,125
Total COGS	208,250	220,500	245,000	269,500	294,000	294,000	367,500	367,500	367,500	367,500	367,500	367,500	3,736,250
Gross Profit	216,750	229,500	255,000	280,500	306,000	306,000	382,500	382,500	382,500	382,500	382,500	382,500	3,888,750
Gross Margin	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%	51.0%
Salary & Wages- Executive	-	-	-	-	-	-	-	-	-	-	-	-	-
Salary & Wages- Admin	6,865	6,538	7,519	6,865	10,577	10,577	10,096	11,058	10,577	10,096	10,577	10,577	111,923
Salary & Wages- Engineering	13,333	13,333	13,333	13,333	13,333	21,667	21,667	21,667	21,667	21,667	21,667	21,667	218,333
Salary & Wages- Sales	37,917	37,917	37,917	37,917	37,917	44,583	44,583	44,583	44,583	44,583	44,583	44,583	501,667
Commissions	34,000	36,000	40,000	44,000	48,000	48,000	60,000	60,000	60,000	60,000	60,000	60,000	610,000
Bonuses													
Payroll Taxes	11,054	11,255	11,852	7,517	8,084	9,189	10,036	10,107	10,072	10,036	10,072	10,072	119,346
Medical & Dental	11,450	11,450	11,450	11,450	11,450	11,450	11,450	11,450	11,450	11,450	11,450	11,450	137,400
NYS Mandated DBL & PFL	120	120	120	120	120	120	120	120	120	120	120	120	1,440
Legal	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Accounting			6,000										6,000
Consultants	100	100	100	100	100	100	100	100	100	100	100	100	1,200
Travel & Lodging	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	96,000
Meals & Entertainment	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	42,000
IT & Lab Equipment (Not Capitalized)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	12,000
Software & Services	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	48,000
Promotional Items													
Rent	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	66,000
Internet & Telephone	230	230	230	230	230	230	230	230	230	230	230	230	2,760
Cell Phones	150	150	150	150	150	150	150	150	150	150	150	150	1,800
Office Supplies	750	750	750	750	750	750	750	750	750	750	750	750	9,000
Insurance- Business	575	575	575	575	575	575	575	575	575	575	575	575	6,899
Postage & Shipping	50	50	50	50	50	50	50	50	50	50	50	50	600
R&D Expense	200	200	200	200	200	200	200	200	200	200	200	200	2,400
Bank/ ADP Processing Fees	300	300	300	300	300	300	300	300	300	300	300	300	3,600
Other Income / Expense													
Total Operating Expenses	139,294	141,168	152,746	145,757	154,036	170,140	182,507	183,540	183,024	182,507	183,024	183,024	2,000,768
EBITDA	77,456	88,332	102,254	134,743	151,964	135,860	199,993	198,960	199,476	199,993	199,476	199,476	1,887,982
EBITDA Margin	18.2%	19.6%	20.5%	24.5%	25.3%	22.6%	26.7%	26.5%	26.6%	26.7%	26.6%	26.6%	24.8%
Depreciation	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	30,000
EBIT	74,956	85,832	99,754	132,243	149,464	133,360	197,493	196,460	196,976	197,493	196,976	196,976	1,857,982
Net Interest Expense/Income													
Income Taxes- Federal	23,237	26,500	30,676	40,423	45,589	40,758	59,998	59,688	59,843	59,998	59,843	59,843	566,395
Income Taxes- State													
Sales Tax	100	100	100	100	100	100	100	100	100	100	100	100	1,200
Net Income (Loss)	51,619	59,232	68,977	91,720	103,775	92,502	137,395	136,672	137,033	137,395	137,033	137,033	1,290,388
NI %	12.1%	13.2%	13.8%	16.7%	17.3%	15.4%	18.3%	18.2%	18.3%	18.3%	18.3%	18.3%	16.9%

Form **1120****U.S. Corporation Income Tax Return**

OMB No. 1545-0123

Department of the Treasury
Internal Revenue Service

For calendar year 2021 or tax year beginning _____, ending _____

▶ Go to www.irs.gov/Form1120 for instructions and the latest information.**2021**

A Check if: 1a Consolidated return (attach Form 951) <input type="checkbox"/> b Life/nonlife consolidated return <input type="checkbox"/> 2 Personal holding co. (attach Sch. PH) <input type="checkbox"/> 3 Personal service corp. (see instructions) <input type="checkbox"/> 4 Schedule M-3 attached <input type="checkbox"/>		TYPE OR PRINT Name PIVOTAL OPTICS INC. Number, street, and room or suite no. If a P.O. box, see instructions. 125 WOLF ROAD, SUITE 315 City or town, state or province, country, and ZIP or foreign postal code ALBANY, NY 12205	B Employer identification number 85-3753123 C Date incorporated 11/04/2020 D Total assets (see instructions) \$ 360,919.
E Check if: (1) <input type="checkbox"/> Initial return (2) <input type="checkbox"/> Final return (3) <input type="checkbox"/> Name change (4) <input type="checkbox"/> Address change			

Income	1a Gross receipts or sales	1a	598,983.	
	b Returns and allowances	1b		
	c Balance. Subtract line 1b from line 1a	1c	598,983.	
	2 Cost of goods sold (attach Form 1125-A)	2	277,377.	
	3 Gross profit. Subtract line 2 from line 1c	3	321,606.	
	4 Dividends and inclusions (Schedule C, line 23)	4		
	5 Interest	5		
	6 Gross rents	6		
	7 Gross royalties	7		
	8 Capital gain net income (attach Schedule D (Form 1120))	8		
	9 Net gain or (loss) from Form 4797, Part II, line 17 (attach Form 4797)	9		
	10 Other income (attach statement)	10		
11 Total income. Add lines 3 through 10	11	321,606.		
Deductions (See instructions for limitations on deductions.)	12 Compensation of officers (attach Form 1125-E)	12	60,030.	
	13 Salaries and wages (less employment credits)	13	63,101.	
	14 Repairs and maintenance	14		
	15 Bad debts	15	449.	
	16 Rents	16	28,240.	
	17 Taxes and licenses	17	13,276.	
	18 Interest (see instructions)	18		
	19 Charitable contributions	19		
	20 Depreciation from Form 4562 not claimed on Form 1125-A or elsewhere on return (attach Form 4562)	20	3,293.	
	21 Depletion	21		
	22 Advertising	22	6,688.	
	23 Pension, profit-sharing, etc., plans	23		
	24 Employee benefit programs	24	89,547.	
	25 Reserved for future use	25		
	26 Other deductions (attach statement)	26	90,293.	
	27 Total deductions. Add lines 12 through 26	27	354,917.	
	28 Taxable income before net operating loss deduction and special deductions. Subtract line 27 from line 11	28	-33,311.	
29a Net operating loss deduction (see instructions)	29a			
b Special deductions (Schedule C, line 24)	29b			
c Add lines 29a and 29b	29c			
Tax, Refundable Credits, and Payments	30 Taxable income. Subtract line 29c from line 28. See instructions	30	-33,311.	
	31 Total tax (Schedule J, Part I, line 11)	31	0.	
	32 Reserved for future use	32		
	33 Total payments and credits (Schedule J, Part III, line 23)	33		
	34 Estimated tax penalty. See instructions. Check if Form 2220 is attached	34		
	35 Amount owed. If line 33 is smaller than the total of lines 31 and 34, enter amount owed	35	0.	
	36 Overpayment. If line 33 is larger than the total of lines 31 and 34, enter amount overpaid	36		
	37 Enter amount from line 36 you want: Credited to 2022 estimated tax ▶ Refunded ▶	37		

Sign Here

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. Declaration of preparer (other than taxpayer) is based on all information of which preparer has any knowledge.

Signature of officer

Date

PRESIDENT

May the IRS discuss this return with the preparer shown below?

☒ Yes ☐ No**Paid**

Print/Type preparer's name

JEFFREY R. KLAHR, CPA

Preparer's signature

JEFFREY R. KLAHR,

Date

04/08/22Check if self-employed ☐

PTIN

P01654923**Preparer Use Only**

Firm's name

LUTZ, SELIG & ZERONDA, CPAS, L.L.P.

Firm's EIN

14-1745230

Firm's address

**33 CENTURY HILL DRIVE
LATHAM, NY 12110-2113**

Phone no.

(518) 783-7200111601
12-22-21

LHA For Paperwork Reduction Act Notice, see separate instructions.

Form 1120 (2021)

Schedule L Balance Sheets per Books		Beginning of tax year		End of tax year	
Assets		(a)	(b)	(c)	(d)
1 Cash			68,415.		86,427.
2a Trade notes and accounts receivable	420,000.			86,692.	
b Less allowance for bad debts	()	420,000.	()		86,692.
3 Inventories			1,520.		111,274.
4 U.S. government obligations					
5 Tax-exempt securities					
6 Other current assets (att. stmt.) STMT 3			2,164.		21,585.
7 Loans to shareholders					
8 Mortgage and real estate loans					
9 Other investments (att. stmt.)					
10a Buildings and other depreciable assets	3,770.			21,018.	
b Less accumulated depreciation	(105.)	3,665.	(5,683.)		15,335.
11a Depletable assets					
b Less accumulated depletion	()		()		
12 Land (net of any amortization)					
13a Intangible assets (amortizable only)					
b Less accumulated amortization	()		()		
14 Other assets (att. stmt.) STMT 4			0.		39,606.
15 Total assets		495,764.			360,919.
Liabilities and Shareholders' Equity					
16 Accounts payable			1,618.		17,616.
17 Mortgages, notes, bonds payable in less than 1 year					
18 Other current liabilities (att. stmt.) STMT 5			49,392.		7,125.
19 Loans from shareholders			80,000.		0.
20 Mortgages, notes, bonds payable in 1 year or more					
21 Other liabilities (att. stmt.)					
22 Capital stock: a Preferred stock					
b Common stock	3.	3.	7.	7.	
23 Additional paid-in capital			187,213.		187,220.
24 Retained earnings - Appropriated (attach statement)					
25 Retained earnings - Unappropriated			177,538.		148,951.
26 Adjustments to shareholders' equity (attach statement)					
27 Less cost of treasury stock		()	()	()	
28 Total liabilities and shareholders' equity		495,764.			360,919.

Schedule M-1 Reconciliation of Income (Loss) per Books With Income per Return

Note: The corporation may be required to file Schedule M-3. See instructions.

1 Net income (loss) per books	-28,587.	7 Income recorded on books this year not included on this return (itemize):	
2 Federal income tax per books	-15.	Tax-exempt interest \$	
3 Excess of capital losses over capital gains		STMT 6	6,995.
4 Income subject to tax not recorded on books this year (itemize):			6,995.
5 Expenses recorded on books this year not deducted on this return (itemize):		8 Deductions on this return not charged against book income this year (itemize):	
a Depreciation \$	2,286.	a Depreciation \$	
b Charitable contributions \$		b Charitable contributions \$	
c Travel and entertainment \$			
	2,286.	9 Add lines 7 and 8	6,995.
6 Add lines 1 through 5	-26,316.	10 Income (page 1, line 28) - line 6 less line 9	-33,311.

Schedule M-2 Analysis of Unappropriated Retained Earnings per Books (Schedule L, Line 25)

1 Balance at beginning of year	177,538.	5 Distributions: a Cash	
2 Net income (loss) per books	-28,587.	b Stock	
3 Other increases (itemize):		c Property	
		6 Other decreases (itemize):	
4 Add lines 1, 2, and 3	148,951.	7 Add lines 5 and 6	
		8 Balance at end of year (line 4 less line 7)	148,951.

FORM 1120	TAXES AND LICENSES	STATEMENT 1
DESCRIPTION		AMOUNT
PAYROLL TAXES		11,419.
SALES TAX		1,482.
NEW YORK TAXES - BASED ON INCOME		375.
TOTAL TO FORM 1120, LINE 17		13,276.

FORM 1120	OTHER DEDUCTIONS	STATEMENT 2
DESCRIPTION		AMOUNT
BANK CHARGES		1,507.
COMPUTER		31,253.
DUES & SUBSCRIPTIONS		3,221.
INSURANCE EXPENSE		7,313.
MEALS NOT SUBJECT TO LIMITATION		5,626.
OFFICE EXPENSE		7,441.
OUTSIDE SERVICES		16,015.
POSTAGE		533.
PROFESSIONAL FEES		11,219.
RESEARCH AND DEVELOPMENT		2,452.
TELEPHONE		2,255.
TRADESHOWS		789.
TRAVEL		669.
TOTAL TO FORM 1120, LINE 26		90,293.

SCHEDULE L	OTHER CURRENT ASSETS	STATEMENT 3
DESCRIPTION	BEGINNING OF TAX YEAR	END OF TAX YEAR
PREPAID EXPENSES	2,164.	2,286.
SUPPLIER PREPAYMENTS	0.	19,299.
TOTAL TO SCHEDULE L, LINE 6	2,164.	21,585.

SCHEDULE L	OTHER ASSETS	STATEMENT 4
DESCRIPTION	BEGINNING OF TAX YEAR	END OF TAX YEAR
DEFERRED TAX ASSET	0.	6,995.
DEPOSITS	0.	32,611.
TOTAL TO SCHEDULE L, LINE 14	0.	39,606.

SCHEDULE L	OTHER CURRENT LIABILITIES	STATEMENT 5
DESCRIPTION	BEGINNING OF TAX YEAR	END OF TAX YEAR
ACCRUED EXPENSES	3,000.	6,750.
FEDERAL ACCRUED TAXES	46,261.	0.
STATE ACCRUED TAXES	131.	375.
TOTAL TO SCHEDULE L, LINE 18	49,392.	7,125.

SCHEDULE M-1	OTHER INCOME RECORDED ON BOOKS NOT INCLUDED IN THIS RETURN	STATEMENT 6
DESCRIPTION		AMOUNT
DEFERRED TAX BENEFIT		6,995.
TOTAL TO SCHEDULE M-1, LINE 7		6,995.

FORM 1125-A	OTHER COSTS	STATEMENT 7
DESCRIPTION		AMOUNT
FREIGHT		10,716
TARIFFS		13,726
TOTAL TO LINE 5		24,442

Filing Status ☐ Single ☒ Married filing jointly ☐ Married filing separately (MFS) ☐ Head of household (HOH) ☐ Qualifying widow(er) (QW)
 Check only one box. If you checked the MFS box, enter the name of your spouse. If you checked the HOH or QW box, enter the child's name if the qualifying person is a child but not your dependent ▶

Your first name and middle initial THOMAS J. ADAMEC		Last name ADAMEC		Your social security number 064-62-3209	
If joint return, spouse's first name and middle initial PENNY S. ADAMEC		Last name ADAMEC		Spouse's social security number 122-68-2438	
Home address (number and street). If you have a P.O. box, see instructions. 3 CARRIAGE HILL LANE				Apt. no.	
City, town, or post office. If you have a foreign address, also complete spaces below. SCHENECTADY, NY 12303				State ZIP code	
Foreign country name		Foreign province/state/county		Foreign postal code	
				Presidential Election Campaign Check here if you, or your spouse if filing jointly, want \$3 to go to this fund. Checking a box below will not change your tax or refund. <input type="checkbox"/> You <input type="checkbox"/> Spouse	

At any time during 2020, did you receive, sell, exchange, or otherwise acquire any financial interest in any virtual currency? ☐ Yes ☒ No

Standard Deduction **Someone can claim:** ☐ You as a dependent ☐ Your spouse as a dependent
☐ Spouse itemizes on a separate return or you were a dual-status alien

Age/Blindness **You:** ☐ Were born before January 2, 1956 ☐ Are blind **Spouse:** ☐ Was born before January 2, 1956 ☐ Is blind

Dependents (see instructions):		(2) Social security number	(3) Relationship to you	(4) <input checked="" type="checkbox"/> if qualifies for (see instructions):	
If more than four dependents, see instructions and check here ▶ <input type="checkbox"/>	(1) First name Last name			Child tax credit	Credit for other dependents
	MATTHEW T ADAMEC	892-96-7514	Son	<input checked="" type="checkbox"/>	

1 Wages, salaries, tips, etc. Attach Form(s) W-2		1	203,095.
2a Tax-exempt interest	2a 570.	2b Taxable interest	2b 451.
3a Qualified dividends	3a 742.	3b Ordinary dividends	3b 905.
4a IRA distributions	4a	4b Taxable amount	4b
5a Pensions and annuities	5a 263,490.	5b Taxable amount	5b 0.
6a Social security benefits	6a	6b Taxable amount	6b
7 Capital gain or (loss). Attach Schedule D if required. If not required, check here <input type="checkbox"/>		7	362.
8 Other income from Schedule 1, line 9		8	10,848.
9 Add lines 1, 2b, 3b, 4b, 5b, 6b, 7, and 8. This is your total income		9	215,661.
10 Adjustments to income:			
a From Schedule 1, line 22	10a		
b Charitable contributions if you take the standard deduction. See instructions	10b		
c Add lines 10a and 10b. These are your total adjustments to income	10c		
11 Subtract line 10c from line 9. This is your adjusted gross income		11	215,661.
12 Standard deduction or itemized deductions (from Schedule A)		12	34,243.
13 Qualified business income deduction. Attach Form 8995 or Form 8995-A		13	
14 Add lines 12 and 13		14	34,243.
15 Taxable income. Subtract line 14 from line 11. If zero or less, enter -0-		15	181,418.

BAA For Disclosure, Privacy Act, and Paperwork Reduction Act Notice, see separate instructions.

Form **1040** (2020)

16 Tax (see instructions). Check if any from Form(s): 1 <input type="checkbox"/> 8814 2 <input type="checkbox"/> 4972 3 <input type="checkbox"/> _____	16	31,632.
17 Amount from Schedule 2, line 3.....	17	
18 Add lines 16 and 17.....	18	31,632.
19 Child tax credit or credit for other dependents.....	19	2,000.
20 Amount from Schedule 3, line 7.....	20	
21 Add lines 19 and 20.....	21	2,000.
22 Subtract line 21 from line 18. If zero or less, enter -0-.....	22	29,632.
23 Other taxes, including self-employment tax, from Schedule 2, line 10.....	23	
24 Add lines 22 and 23. This is your total tax ▶	24	29,632.
25 Federal income tax withheld from:		
a Form(s) W-2.....	25a	37,919.
b Form(s) 1099.....	25b	
c Other forms (see instructions).....	25c	60.
d Add lines 25a through 25c.....	25d	37,979.
26 2020 estimated tax payments and amount applied from 2019 return.....	26	
27 Earned income credit (EIC).....	27	
28 Additional child tax credit. Attach Schedule 8812.....	28	
29 American opportunity credit from Form 8863, line 8.....	29	
30 Recovery rebate credit. See instructions.....	30	
31 Amount from Schedule 3, line 13.....	31	
32 Add lines 27 through 31. These are your total other payments and refundable credits ▶	32	
33 Add lines 25d, 26, and 32. These are your total payments ▶	33	37,979.
34 If line 33 is more than line 24, subtract line 24 from line 33. This is the amount you overpaid	34	8,347.
35a Amount of line 34 you want refunded to you . If Form 8888 is attached, check here. ▶ <input type="checkbox"/>	35a	8,347.
▶ b Routing number..... 021000322 ▶ c Type: <input checked="" type="checkbox"/> Checking <input type="checkbox"/> Savings		
▶ d Account number..... 483023657866		
36 Amount of line 34 you want applied to your 2021 estimated tax ▶ 36		
37 Subtract line 33 from line 24. This is the amount you owe now ▶	37	
Note: Schedule H and Schedule SE filers, line 37 may not represent all of the taxes you owe for 2020. See Schedule 3, line 12e, and its instructions for details.		
38 Estimated tax penalty (see instructions)..... ▶ 38		

Refund

Direct deposit? See instructions.

Amount You Owe

For details on how to pay, see instructions.

Third Party Designee

Do you want to allow another person to discuss this return with the IRS? See instructions..... ▶ ☒ **Yes. Complete below.** ☐ **No**

Designee's name ▶ Joseph M Sicilia CPA	Phone no. ▶ 518-346-5100	Personal identification number (PIN) ▶ 37238
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Sign Here

Under penalties of perjury, I declare that I have examined this return and accompanying schedules and statements, and to the best of my knowledge and belief, they are true, correct, and complete. Declaration of preparer (other than taxpayer) is based on all information of which preparer has any knowledge.

Your signature	Date	Your occupation	If the IRS sent you an Identity Protection PIN, enter it here (see inst.) ▶
▶ _____	_____	Consultant	_____
Spouse's signature. If a joint return, both must sign.		Date	Spouse's occupation
_____		_____	Homemaker
Phone no. (518) 355-5994		Email address	

Paid Preparer Use Only

Preparer's name	Preparer's signature	Date	PTIN	Check if: <input type="checkbox"/> Self-employed
Joseph M Sicilia CPA	Joseph M Sicilia CPA	4/14/22	P00237238	
Firm's name ▶ Sicilia & Associates, PC			Phone no. 518-346-5100	
Firm's address ▶ 2312 Broadway Schenectady, NY 12306			Firm's EIN ▶ 14-1751832	

Name Thomas J Adamec	Business Phone (xxx-xxx-xxxx) (518) 977-3523
Home Address 3 Carriage Hill Lane	Home Phone (xxx-xxx-xxxx) (518) 355-5994
City, State, & Zip Code Schenectady NY 12303	
Business Name of Applicant/Borrower Pivotal Optics Inc	
Business Address (if different than home address) 125 Wolf Road Albany NY 12205	
Business Type: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> S-Corp. <input type="checkbox"/> LLC <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor (does not apply to ODA applicant)	
This information is current as of [month/day/year] 03/12/2022 (within 90 days of submission for 7(a)/504/DBG/ODA/WOSB or within 30 days of submission for 8(a) BD)	
WOSB applicant only, Married <input type="checkbox"/> Yes <input type="checkbox"/> No	

ASSETS (Omit Cents)	LIABILITIES (Omit Cents)
Cash on Hand & in banks..... \$ 50,000	Accounts Payable..... \$ 0
Savings Accounts..... \$ 1,000,000	Notes Payable to Banks and Others..... \$ 0
IRA or Other Retirement Account..... \$ 450,000	(Describe in Section 2)
(Describe in Section 5)	Installment Account (Auto)..... \$ 0
Accounts & Notes Receivable..... \$ 0	Mo. Payments _____
(Describe in Section 5)	Installment Account (Other)..... \$ 0
Life Insurance – Cash Surrender Value Only..... \$ 0	Mo. Payments _____
(Describe in Section 8)	Loan(s) Against Life Insurance..... \$ 0
Stocks and Bonds..... \$ 0	Mortgages on Real Estate..... \$ 416,000
(Describe in Section 3)	(Describe in Section 4)
Real Estate..... \$ 700,000	Unpaid Taxes..... \$ 0
(Describe in Section 4)	(Describe in Section 6)
Automobiles..... \$ 50,000	Other Liabilities..... \$ 0
(Describe in Section 5, and include	(Describe in Section 7)
Year/Make/Model)	Total Liabilities..... \$ 416,000
Other Personal Property..... \$ 0	Net Worth.....
(Describe in Section 5)	
Other Assets..... \$ 0	
(Describe in Section 5)	
Total \$ 2,250,000	Total \$ 416,000
	Must equal total in assets column.

Section 1. Source of Income.	Contingent Liabilities
Salary..... \$ 0.00	As Endorser or Co-Maker..... \$ 0.00
Net Investment Income..... \$ 0.00	Legal Claims & Judgments..... \$ 0.00
Real Estate Income..... \$ 0.00	Provision for Federal Income Tax..... \$ 0.00
Other Income (Describe below)..... \$ 0.00	Other Special Debt..... \$ 0.00

Description of Other Income in Section 1 (Alimony or child support payments should not be disclosed in "Other Income" unless it is desired to have such payments counted toward total income)
Use savings

Section 2. Notes Payable to Banks and Others. (Use attachments if necessary. Each attachment must be identified as part of this statement and signed.)

Names and Addresses of Noteholder(s)	Original Balance	Current Balance	Payment Amount	Frequency (monthly, etc.)	How Secured or Endorsed Type of Collateral
N/A					

Section 3. Stocks and Bonds. (Use attachments if necessary. Each attachment must be identified as part of this statement and signed.)

Number of Shares	Name of Securities	Cost	Market Value Quotation/Exchange	Date of Quotation/Exchange	Total Value

Section 4. Real Estate Owned. (List each parcel separately. Use attachment if necessary. Each attachment must be identified as a part of this statement and signed.)

	Property A	Property B	Property C
Type of Real Estate (e.g. Primary Residence, Other Residence, Rental Property, Land, etc.)	Primary Residence		
Address	3 Carriage Hill Lane Schenectady NY 12303		
Date Purchased	08/12/2018		
Original Cost	\$ 600,000.00		
Present Market Value	\$ 650,000.00		
Name & Address of Mortgage Holder	SEFCU		
Mortgage Account Number	1706103627		
Mortgage Balance	\$ 416,000.00		
Amount of Payment per Month/Year	\$ 1,928.00		
Status of Mortgage			

Section 5. Other Personal Property and Other Assets. (Describe, and, if any is pledged as security, state name and address of lien holder, amount of lien, terms of payment and, if delinquent, describe delinquency.)

Section 6. Unpaid Taxes. (Describe in detail as to type, to whom payable, when due, amount, and to what property, if any, a tax lien attaches.)

N/A

Section 7. Other Liabilities. (Describe in detail.)

N/A

Section 8. Life Insurance Held. (Give face amount and cash surrender value of policies – name of insurance company and Beneficiaries.)

\$2M
\$100,000 Cash Value

I authorize the SBA/Lender/Surety Company to make inquiries as necessary to verify the accuracy of the statements made and to determine my creditworthiness.

CERTIFICATION: (to be completed by each person submitting the information requested on this form and the spouse of any 20% or more owner when spousal assets are included)

By signing this form, I certify under penalty of criminal prosecution that all information on this form and any additional supporting information submitted with this form is true and complete to the best of my knowledge. I understand that SBA or its participating Lenders or Certified Development Companies or Surety Companies will rely on this information when making decisions regarding an application for a loan, surety bond, or participation in the WOSB or 8(a) BD program. I further certify that I have read the attached statements required by law and executive order.-

Signature _____

Date 04/11/2022

Print Name Thomas Adamec

Social Security No. 064-62-3209

Signature _____

Date _____

Print Name _____

Social Security No. _____



COPY

Filing Status ☐ Single ☒ Married filing jointly ☐ Married filing separately (MFS) ☐ Head of household (HOH) ☐ Qualifying widow(er) (QW)

Check only one box. If you checked the MFS box, enter the name of your spouse. If you checked the HOH or QW box, enter the child's name if the qualifying person is a child but not your dependent ▶

Your first name and middle initial JAMES A		Last name PASCARELL		Your social security number 064-66-2915	
If joint return, spouse's first name and middle initial JENNIFER A		Last name PASCARELL		Spouse's social security number 013-52-0444	
Home address (number and street). If you have a P.O. box, see instructions. 455 SNYDERS CORNER ROAD				Apt. no.	
City, town, or post office. If you have a foreign address, also complete spaces below. POESTENSKILL			State NY	ZIP code 12140	Presidential Election Campaign Check here if you, or your spouse if filing jointly, want \$3 to go to this fund. Checking a box below will not change your tax or refund. <input type="checkbox"/> You <input type="checkbox"/> Spouse
Foreign country name		Foreign province/state/county		Foreign postal code	

At any time during 2020, did you receive, sell, send, exchange, or otherwise acquire any financial interest in any virtual currency? ☐ Yes ☒ No

Standard Deduction **Someone can claim:** ☐ You as a dependent ☐ Your spouse as a dependent
☐ Spouse itemizes on a separate return or you were a dual-status alien

Age/Blindness **You:** ☐ Were born before January 2, 1956 ☐ Are blind **Spouse:** ☐ Was born before January 2, 1956 ☐ Is blind

Dependents (see instructions):		(2) Social security number	(3) Relationship to you	(4) <input checked="" type="checkbox"/> if qualifies for (see instructions):	
(1) First name	Last name			Child tax credit	Credit for other dependents
OLIVIA P	PASCARELL	093-94-6996	Daughter	<input checked="" type="checkbox"/>	<input type="checkbox"/>
JAMES R	PASCARELL	066-96-5181	Son	<input checked="" type="checkbox"/>	<input type="checkbox"/>
BRIDGET M	PASCARELL	067-22-0880	Parent	<input type="checkbox"/>	<input checked="" type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>

Attach Sch. B if required.	1	Wages, salaries, tips, etc. Attach Form(s) W-2	1	152,675.
	2a	Tax-exempt interest	2a	20,304.
	3a	Qualified dividends	3a	18,144.
	4a	IRA distributions	4a	
	5a	Pensions and annuities	5a	
	6a	Social security benefits	6a	
Standard Deduction for— • Single or Married filing separately, \$12,400 • Married filing jointly or Qualifying widow(er), \$24,800 • Head of household, \$18,650 • If you checked any box under Standard Deduction, see instructions.	7	Capital gain or (loss). Attach Schedule D if required. If not required, check here <input type="checkbox"/>	7	-3,000.
	8	Other income from Schedule 1, line 9	8	37,423.
	9	Add lines 1, 2b, 3b, 4b, 5b, 6b, 7, and 8. This is your total income	9	238,718.
	10	Adjustments to income:		
	a	From Schedule 1, line 22	10a	557.
	b	Charitable contributions if you take the standard deduction. See instructions	10b	300.
	c	Add lines 10a and 10b. These are your total adjustments to income	10c	857.
	11	Subtract line 10c from line 9. This is your adjusted gross income	11	237,861.
	12	Standard deduction or itemized deductions (from Schedule A)	12	24,800.
	13	Qualified business income deduction. Attach Form 8995 or Form 8995-A	13	1,485.
14	Add lines 12 and 13	14	26,285.	
15	Taxable income. Subtract line 14 from line 11. If zero or less, enter -0-	15	211,576.	

For Disclosure, Privacy Act, and Paperwork Reduction Act Notice, see separate instructions.

Form 1040 (2020)

Form 1040 (2020)

Name James Pascarell	Business Phone (xxx-xxx-xxxx) (518) 977-3523
Home Address 455 Snyders Corners Road	Home Phone (xxx-xxx-xxxx) (518) 281-9714
City, State, & Zip Code Poestenkill NY 12140	
Business Name of Applicant/Borrower Pivotal Optics Inc	
Business Address (if different than home address) 125 Wolf Road Albany NY 12205	
Business Type: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> S-Corp. <input type="checkbox"/> LLC <input type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor (does not apply to ODA applicant)	
This information is current as of [month/day/year] 03/12/2022 (within 90 days of submission for 7(a)/504/SBG/ODAWOSB or within 30 days of submission for 8(a) BD)	
WOSB applicant only, Married <input type="checkbox"/> Yes <input type="checkbox"/> No	

ASSETS (Omit Cents)	LIABILITIES (Omit Cents)
Cash on Hand & in banks..... \$ 100,000	Accounts Payable..... \$ 0
Savings Accounts..... \$ 40,000	Notes Payable to Banks and Others..... \$ 0
IRA or Other Retirement Account..... \$ 1,200,000	(Describe in Section 2)
(Describe in Section 5)	Installment Account (Auto)..... \$ 23,000
Accounts & Notes Receivable..... \$ 0	Mo. Payments \$ 515
(Describe in Section 5)	Installment Account (Other)..... \$ 8,000
Life Insurance – Cash Surrender Value Only..... \$ 0	Mo. Payments \$ 540
(Describe in Section 8)	Loan(s) Against Life Insurance..... \$ 0
Stocks and Bonds..... \$ 3,000,000	Mortgages on Real Estate..... \$ 0
(Describe in Section 3)	(Describe in Section 4)
Real Estate..... \$ 1,000,000	Unpaid Taxes..... \$ 0
(Describe in Section 4)	(Describe in Section 6)
Automobiles..... \$ 75,000	Other Liabilities..... \$ 0
(Describe in Section 5, and include Year/Make/Model)	(Describe in Section 7)
Other Personal Property..... \$ 0	Total Liabilities..... \$ 31,000
(Describe in Section 5)	Net Worth.....
Other Assets..... \$ 0	
(Describe in Section 5)	
Total \$ 5,415,000	Total \$ 31,000 Must equal total in assets column.

Section 1. Source of Income.	Contingent Liabilities
Salary..... \$ 0.00	As Endorser or Co-Maker..... \$ 0.00
Net Investment Income..... \$ 0.00	Legal Claims & Judgments..... \$ 0.00
Real Estate Income..... \$ 0.00	Provision for Federal Income Tax..... \$ 0.00
Other Income (Describe below)..... \$ 0.00	Other Special Debt..... \$ 0.00

Description of Other Income in Section 1 (Alimony or child support payments should not be disclosed in "Other Income" unless it is desired to have such payments counted toward total income)
Adjunct Professor Use savings

Section 2. Notes Payable to Banks and Others. (Use attachments if necessary. Each attachment must be identified as part of this statement and signed.)

Names and Addresses of Noteholder(s)	Original Balance	Current Balance	Payment Amount	Frequency (monthly, etc.)	How Secured or Endorsed Type of Collateral
N/A					

Section 3. Stocks and Bonds. (Use attachments if necessary. Each attachment must be identified as part of this statement and signed.)

Number of Shares	Name of Securities	Cost	Market Value Quotation/Exchange	Date of Quotation/Exchange	Total Value

Section 4. Real Estate Owned. (List each parcel separately. Use attachment if necessary. Each attachment must be identified as a part of this statement and signed.)

	Property A	Property B	Property C
Type of Real Estate (e.g. Primary Residence, Other Residence, Rental Property, Land, etc.)	Primary Residence		
Address	455 Snyders Corners Road		
Date Purchased			
Original Cost	\$ 500,000.00		
Present Market Value	\$ 700,000.00		
Name & Address of Mortgage Holder	n/a		
Mortgage Account Number	n/a		
Mortgage Balance			
Amount of Payment per Month/Year			
Status of Mortgage			

Section 5. Other Personal Property and Other Assets. (Describe, and, if any is pledged as security, state name and address of lien holder, amount of lien, terms of payment and, if delinquent, describe delinquency.)

Section 6. Unpaid Taxes. (Describe in detail as to type, to whom payable, when due, amount, and to what property, if any, a tax lien attaches.)

N/A

Section 7. Other Liabilities. (Describe in detail.)

N/A

Section 8. Life Insurance Held. (Give face amount and cash surrender value of policies – name of insurance company and Beneficiaries.)

N/A

I authorize the SBA/Lender/Surety Company to make inquiries as necessary to verify the accuracy of the statements made and to determine my creditworthiness.

CERTIFICATION: (to be completed by each person submitting the information requested on this form and the spouse of any 20% or more owner when spousal assets are included)

By signing this form, I certify under penalty of criminal prosecution that all information on this form and any additional supporting information submitted with this form is true and complete to the best of my knowledge. I understand that SBA or its participating Lenders or Certified Development Companies or Surety Companies will rely on this information when making decisions regarding an application for a loan, surety bond, or participation in the WOSB or 8(a) BD program. I further certify that I have read the attached statements required by law and executive order.-

Signature _____

Date 04/11/2022

Print Name James Pascarell

Social Security No. 064-66-2915

Signature _____

Date _____

Print Name _____

Social Security No. _____

Albany County Business Development Corp.
AI Tech Loan Fund
Loan Proposal
May 19, 2022

BORROWER: Energy Catalyst Technologies, LLC

REQUEST: \$150,000 (One-Hundred and Fifty Thousand Dollars)

TERM: 5-year term and year amortization

RATE: 75% of the Current Prime Rate

PROJECT: Energy Catalyst is looking to borrow funds to purchase the components for their revolutionary heat-pump product to place up to 20 more units in the field for efficiency testing.

The sources and uses of the proposed project financing are follows:

SOURCES			USES	
AI Tech Funds	\$150,000		Purchase Components	\$150,000
Owners Equity				
Total	\$150,000		Total	\$150,000

COLLATERAL: Collateral for the AI Tech loan will be a first UCC Lien on all business assets of Energy Catalyst Technologies, LLC.

GUARANTORS: The loan will require the personal guarantee on the majority owner, Matthew Desmarais (94%). To date Matthew and his spouse have invested over \$70,000 in the company and significant sweat equity to get the company to this stage.

BACKGROUND: (provided by borrower)

In their 2021 Strategic Outlook, NYSERDA noted their plans to convert millions of homes to heat pumps in the next 10 years, yet the millions of homes in NY that are currently heated by a boiler will be left behind because retrofitting is very costly and specialized. Energy Catalyst Technologies (ECT) hopes to capitalize on this untapped market with their patent pending technology which can transform a fossil fuel heating system to a high efficiency geothermal system for 40% lower cost and with 30% better efficiency. Their product will enable millions of homes to be converted to geothermal at a cost that is approachable and reasonable for a middle-income homeowner.

Product

Their patent pending “Double Hybrid” heat pump will be able to produce hot water for heating, domestic hot water (pre-heated to 115 degrees), hot air and chilled air for AC. Based on the performance of the 5 NYSERDA sponsored demonstration sites, they are seeing a 55-60% improvement in efficiency compared to a typical air source heat pump. ECT’s heat pump also eliminates the need for external buffer tanks, supplemental fan coils, complicated controls, or extensive duct retrofits by seamlessly providing the required BTUs through hot water and hot air at the same time. Their hybrid system leverages established refrigeration principles to reuse a home's existing heating infrastructure (even baseboards and fin-tube radiators) without being limited by the reduced thermal capacity of lower temperature hot water.

Their novel technology will enable large-scale deployment of high efficiency, geothermal heat pumps for homes with existing boilers, which can reduce GHG emissions by roughly 20,000 lbs of CO2 annually for a typical home.

ECT’s new Double Hybrid heat pumps are available for sale currently in 36,000, 48,000 and 66,000 BTU sizes. One of the best advantages of these units is that they can be used in homes with forced hot air or hot water heating systems without any unnecessary components.

Story

ECT started as a geothermal contractor that specialized in thorough assessments and retrofits of homes with hot water boilers. The original concept was to provide a novel method of financing these projects through a utility-like payment method. However, it quickly became clear that these projects are too labor intensive and costly for this type of financing. When the pandemic hit, ECT started building prototypes of a new design in the founder’s basement that leveraged some of the lesser-known energy extraction methods that founder Matt Desmarais had learned in Europe. By mid-summer 2021, ECT had a working prototype that showed enormous promise.

By that Fall, ECT had 5 customers willing to pay \$33,500 for them to install a demonstration unit in their homes. The results conclusively show that the patent pending hybrid hot water and air improves efficiency significantly while also filling the gap left by lower hydronic water temperature. In April, ECT were a NY-GEO Top Job Finalist, which is a national geothermal excellence competition.

Team

Matt Desmarais CEM, EIT – Matt has 9 years of thermal engineering experience and international experience working in Europe. He came up with the concept of the double hybrid heat pump after working in the industrial heat recovery industry in France from 2017-2019.

David Giza- David has over 25 years of HVAC, commercial refrigeration, and heat pump technician experience.

Sam Chapin – Sam has 30 years of business development experience. He was previously the VP of Sales for PlugIn Stations Online.

Advisors:

Mel Chudzik - Professor at the Clarkson Reh School of Business. Mel is a senior business expert and angel investor based in the Capital Region. He helped hundreds of companies over his career. Energy Catalyst worked with the Clarkson Reh School and 4 of his MBA students to build a business plan.

Larry Krause- A retired controls engineer from GE in Schenectady; Larry works with SCORE to help startup companies like ours succeed.

FINANCIALS:

See attached financial information:

ECONOMIC IMPACT: Al Tech will be working with First Niagara Bank to assist in the financing and providing 90% LTV for the borrower.

STRENGTHS

- New technology gaining interest in the geothermal community
- Fits the mission of the fund to support technology companies
- Fits the mission of Albany County trying to establish itself as a green energy hub
- Team is working closely with NYSERDA and NY Geothermal Energy Organization

WEAKNESS:

- New company and new technology
- Limited cash-flow to repay the debt

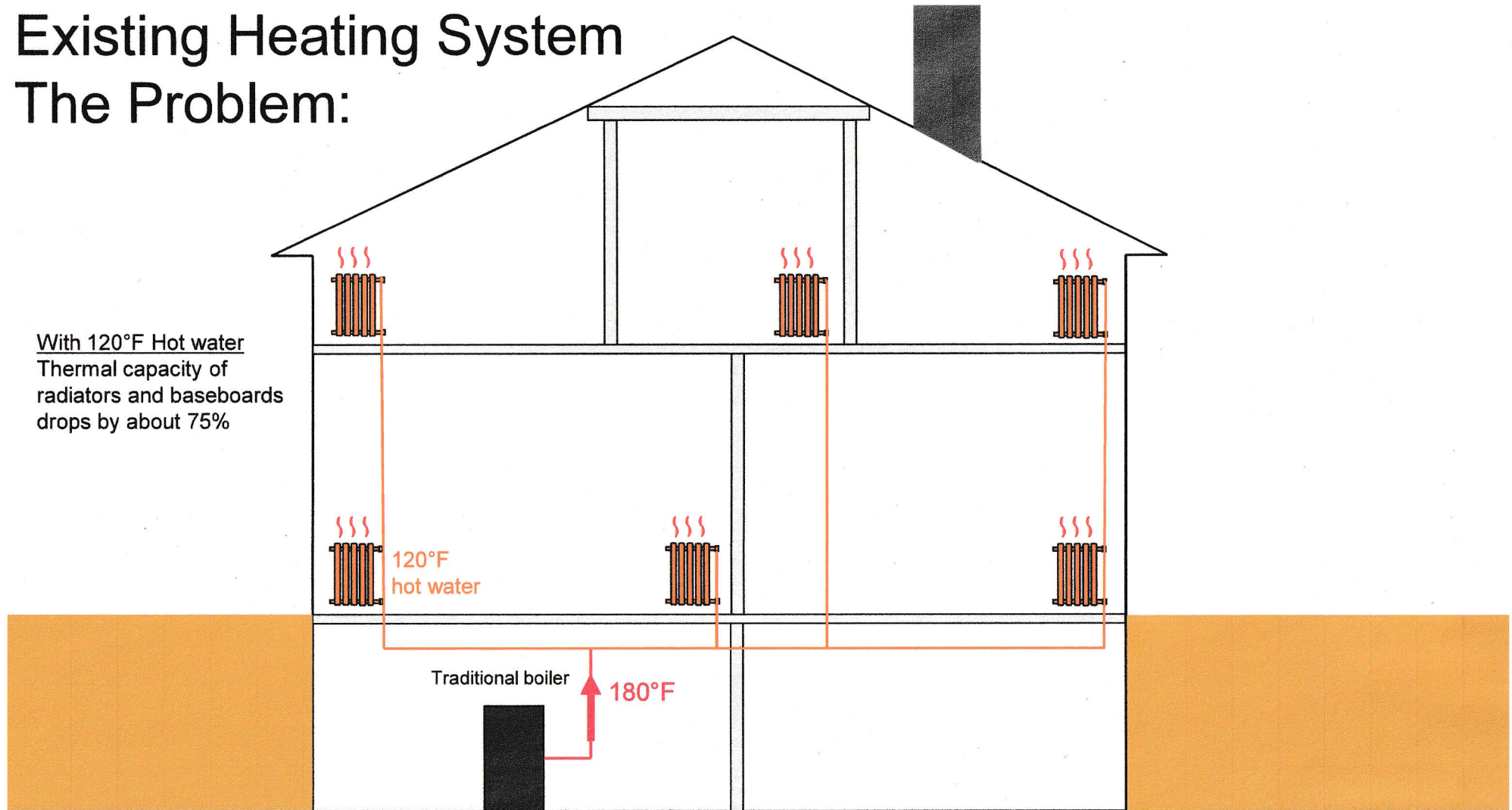
OTHER TERMS AND CONDITIONS

- Assignment of life insurance on the life of Matthew Desmarais

Existing Heating System

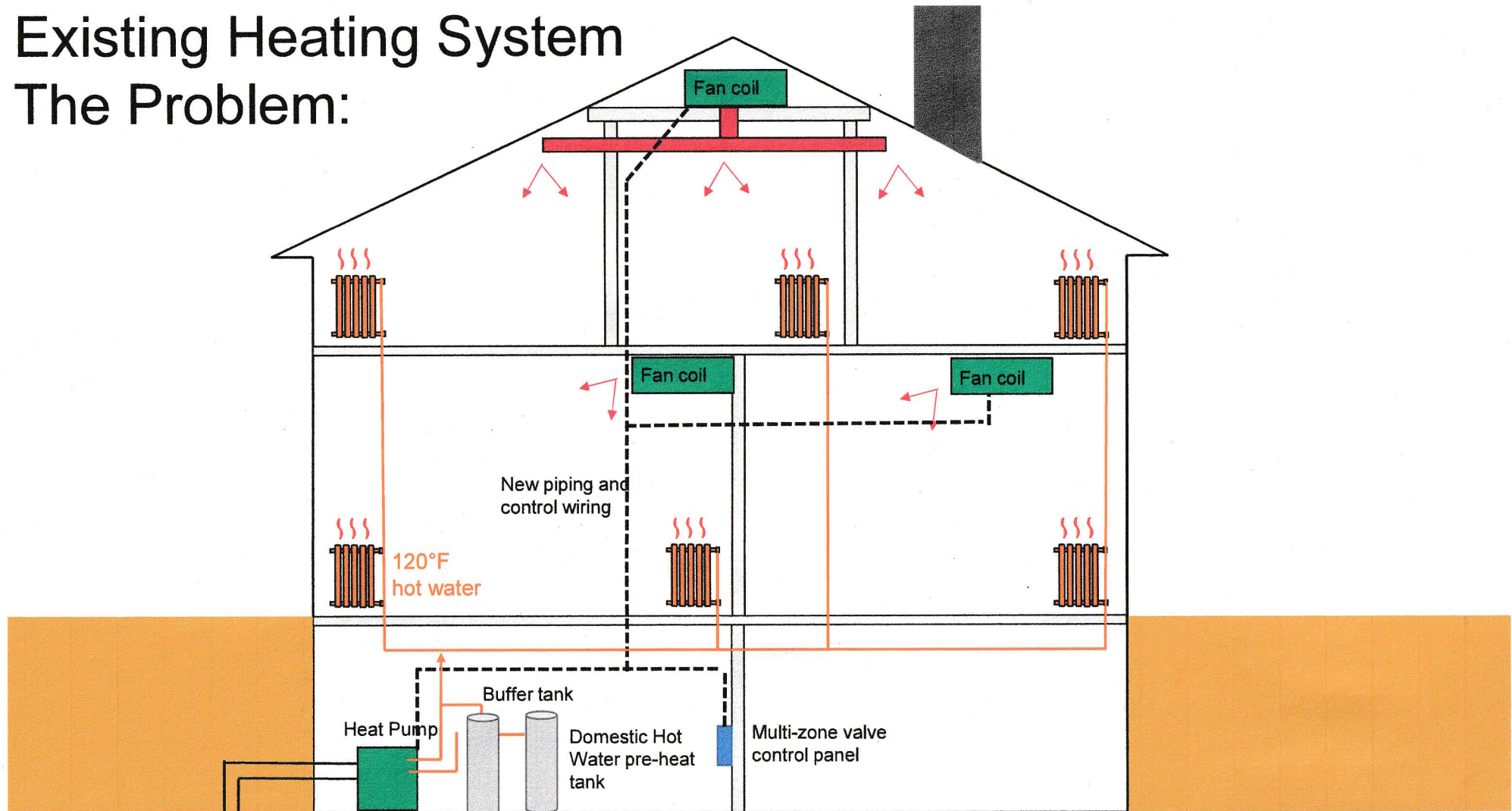
The Problem:

With 120°F Hot water
Thermal capacity of
radiators and baseboards
drops by about 75%



Existing Heating System

The Problem:



Energy Catalyst Heat Pump:

A Simple, Scalable Solution

- ✓ Built-in hot air eliminates need for wall heaters
- ✓ Our blower is variable speed, no cold blow
- ✓ Built-in DHW heater
- ✓ Fast to install
- ✓ Works with nearly any home

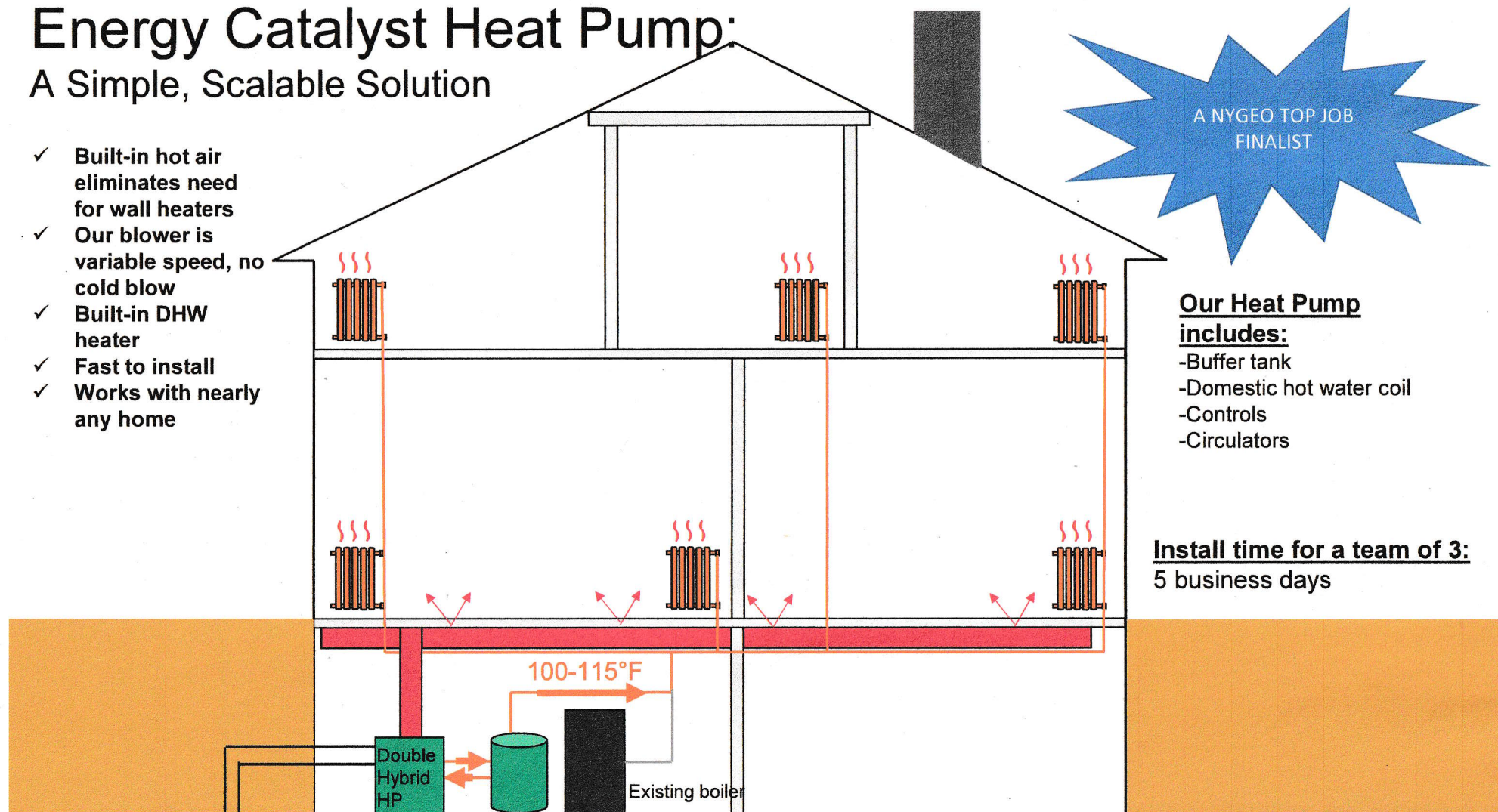
A NYGEO TOP JOB
FINALIST

Our Heat Pump

includes:

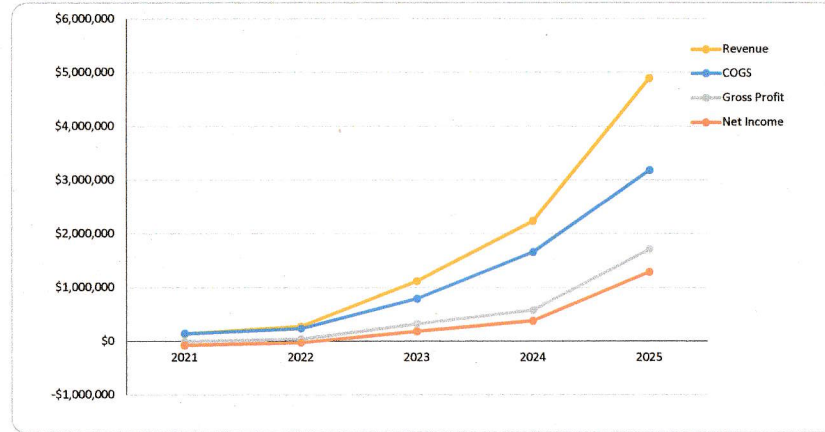
- Buffer tank
- Domestic hot water coil
- Controls
- Circulators

Install time for a team of 3:
5 business days



Energy Catalyst Income Statement

	2021	2022	2023	2024	2025
Units Sold	5	20	80	160	350
Price per Unit	-	\$14,000	\$14,000	\$14,000	\$14,000
Price per System	\$30,000	-	-	-	-
Revenue	\$141,000	\$280,000	\$1,120,000	\$2,240,000	\$4,900,000
Material Cost per Unit	\$10,985	\$8,500	\$8,330	\$7,914	\$7,518
Total Material Cost	\$54,925	\$170,000	\$666,400	\$1,266,160	\$2,631,239
Test Equipment	\$3,000	-	-	-	-
Labor and Overhead	\$0	\$52,000	\$92,000	\$310,600	\$436,772
Fringe Benefits (20% of wages)	-	\$10,400	\$18,400	\$62,120	\$87,354
Tools and Equipment	\$5,605	\$3,655	\$8,765	\$8,365	\$8,365
Packaging	-	\$1,417	\$5,553	\$10,551	\$21,927
Total Installation (HVAC contractor, drilling & ground loop)	\$80,000	-	-	-	-
COGS	\$143,530	\$237,472	\$791,118	\$1,657,796	\$3,185,657
COGS per Unit	\$28,706	\$11,874	\$9,889	\$10,361	\$9,102
Gross Profit	-\$2,530	\$42,528	\$328,882	\$582,204	\$1,714,343
Warehouse Lease Expense	\$2,400	\$6,000	\$12,000	\$18,000	\$18,000
Utility Expense	-	\$1,200	\$1,200	\$1,200	\$1,200
property, auto, liability, WC)	-	\$6,500	\$7,000	\$8,000	\$8,500
Marketing Expense	\$6,655	\$9,324	\$8,355	\$8,509	\$8,666
Wage Expense - Outsourced	\$500	\$20,540	\$16,540	\$16,540	\$16,540
Other Expenses for Installations	\$60,000	-	-	-	-
QuickBooks	-	\$600	\$1,080	\$1,080	\$1,080
Fringe Benefits (20% of wages)	-	\$0	\$0	\$0	\$0
Operating Expense	\$69,555	\$44,164	\$46,175	\$53,329	\$53,986
EBITDA	-\$72,085	-\$1,636	\$282,706	\$528,874	\$1,660,357
Tax (19.8%)	-	-	\$55,976	\$104,717	\$328,751
Patent Amortization	\$854	\$1,139	\$1,139	\$1,139	\$1,139
Depreciation Expense	-	-	-	-	-
Interest Expense	\$870	\$21,392	\$37,564	\$37,564	\$37,564
Net Income	-\$73,809	-\$24,167	\$188,028	\$385,454	\$1,292,904



Assumptions

- (1) Year 2021 is the only year selling a system, so the price includes drilling, contractors, and installing the prototype.
- (2) In 2021 the cost of developing the prototype will be much higher due to R&D. The parts and process are standardized in the year 2022 to decrease cost.
- (3) The test equipment is \$1,800 each and will be used to monitor the prototypes.
- (4) Assembly depends on the number of high skill (\$30/hr) and low skill workers (\$20/hr) needed to manufacture heat pumps in the year.
- (5) The benefits for workers would not apply to the year 2021 since it was temporary work for the technician working on the prototype.
- (6) The initial cost for equipment, such as transportation tools, is higher in the initial years of launch to setup manufacture and delivery of product.
- (7) Average packaging expense is about \$350 per unit.
- (8) The cost of installing is \$35,500 per heat pump, which would include the cost of drilling and the contractor's labor.
- (9) In 2021, a small workspace will be rented for \$400/month, including utilities. The warehouse needs to be 3,000 sq ft so the lease would begin in the 2nd quarter of 2022. The monthly rate is \$1.10 per sq ft.
- (10) The insurance expenses are assumptions to cover property, worker compensation, and general business liabilities.
- (11) The patent amortization is calculated with the expectation of 20 year life for the patent.
- (12) This cost assumes a five-year straight line depreciation for the equipment.
- (13) This expense accounts for the \$200,000 debt with a repayment plan of 30 years at 3.25% interest.
- (14) The marketing expense assumes that there will be investments in strategies that can vary each year.
- (15) The outsourced wage expense is for HR, finance, and legal services, which would be external workforce.
- (16) The insourced wage includes the salary for the CEO, customer service, marketing, operation manager, tech support, and R&D.
- (17) The fringe benefits only apply to the insourced employees and are estimated to be 20% of wages.
- (18) Annual inventory assumes some products are remaining from the previous year, so it is calculated based on multiplying the number of units by the cost of materials per heat pump.

Energy Catalyst LLC
Profit and Loss
January - December 2021

	<u>Total</u>
Income	
Sales of Product Income	10,000.00
Services	74,401.60
Uncategorized Income	10,728.06
Total Income	\$ 95,129.66
Gross Profit	\$ 95,129.66
Expenses	
Advertising & Marketing	585.00
Bank Charges & Fees	297.19
Car & Truck	542.31
Contractors	75,880.41
Job Supplies	70,835.83
Legal & Professional Services	52,832.00
Meals & Entertainment	209.46
Office Supplies & Software	1,895.92
Other Business Expenses	145.98
QuickBooks Payments Fees	445.30
Reimbursable Expenses	-30.49
Rent & Lease	258.50
Taxes & Licenses	255.00
Total Expenses	\$ 204,152.41
Net Operating Income	-\$ 109,022.75
Net Income	-\$ 109,022.75

Notes to 2021 P&L

Spent about \$50,000 on December 30th 2021 on services that ECT could prepay in tax year 2021 instead of 2022. About \$45,000 of this was Energy Star certification costs for our heat pumps and the rest was pre purchasing materials or professional subscriptions (for instance NY-GEO).

As a multi-member LLC, the company taxes pass through Matt's personal taxes and he made over \$160k in 2021 because I working 9 months for Blake Equipment

By the end of the 2021, ECT had received none of the \$50,000 in support from NYSERDA and there was \$67,000 in income from demonstration projects that had not been collected. ECT had an issue with a Geothermal driller and couldn't get another driller until February '22, so about half of the demonstration income was still pending, while ECT had already felt most of the costs.

SCHEDULE C
(Form 1040)

Department of the Treasury
Internal Revenue Service (99)

Profit or Loss From Business

(Sole Proprietorship)

► Go to www.irs.gov/ScheduleC for instructions and the latest information.

► Attach to Form 1040, 1040-SR, 1040-NR, or 1041; partnerships generally must file Form 1065.

OMB No. 1545-0074

2020

Attachment
Sequence No. **09**

Name of proprietor

MATTHEW DESMARAI

Social security number (SSN)

009-74-6641

A Principal business or profession, including product or service (see instructions)

Geothermal energy

B Enter code from instructions
999999

C Business name. If no separate business name, leave blank.

ENERGY CATALYST LLC

D Employer ID number (EIN) (see instr.)

E Business address (including suite or room no.) ► **90 HACKETT BLVD APT 2**

City, town or post office, state, and ZIP code **Albany, NY 12203**

F Accounting method: (1) ☒ Cash (2) ☐ Accrual (3) ☐ Other (specify) ►

G Did you "materially participate" in the operation of this business during 2020? If "No," see instructions for limit on losses ☒ Yes ☐ No

H If you started or acquired this business during 2020, check here

I Did you make any payments in 2020 that would require you to file Form(s) 1099? See instructions Yes ☒ No

J If "Yes," did you or will you file required Form(s) 1099? Yes ☐ No

Part I Income

1 Gross receipts or sales. See instructions for line 1 and check the box if this income was reported to you on Form W-2 and the "Statutory employee" box on that form was checked	<input type="checkbox"/>	1	27,043
2 Returns and allowances		2	0
3 Subtract line 2 from line 1		3	27,043
4 Cost of goods sold (from line 42)		4	18,045
5 Gross profit. Subtract line 4 from line 3.		5	8,998
6 Other income, including federal and state gasoline or fuel tax credit or refund (see instructions)		6	
7 Gross income. Add lines 5 and 6		7	8,998

Part II Expenses. Enter expenses for business use of your home **only** on line 30.

8 Advertising	8		18 Office expense (see instructions)	18	125
9 Car and truck expenses (see instructions)	9	985	19 Pension and profit-sharing plans	19	
10 Commissions and fees	10		20 Rent or lease (see instructions):		
11 Contract labor (see instructions)	11		a Vehicles, machinery, and equipment	20a	
12 Depletion	12		b Other business property	20b	
13 Depreciation and section 179 expense deduction (not included in Part III) (see instructions)	13	332	21 Repairs and maintenance	21	1,186
14 Employee benefit programs (other than on line 19)	14		22 Supplies (not included in Part III)	22	
15 Insurance (other than health)	15		23 Taxes and licenses	23	
16 Interest (see instructions):			24 Travel and meals:		
a Mortgage (paid to banks, etc.)	16a		a Travel	24a	
b Other	16b		b Deductible meals (see instructions)	24b	16
17 Legal and professional services	17	135	25 Utilities	25	
28 Total expenses before expenses for business use of home. Add lines 8 through 27a.	28		26 Wages (less employment credits)	26	
29 Tentative profit or (loss). Subtract line 28 from line 7	29		27a Other expenses (from line 48)	27a	1,111
30 Expenses for business use of your home. Do not report these expenses elsewhere. Attach Form 8829 unless using the simplified method. See instructions.			b Reserved for future use	27b	
Simplified method filers only: Enter the total square footage of (a) your home: _____ and (b) the part of your home used for business: _____. Use the Simplified Method Worksheet in the instructions to figure the amount to enter on line 30	30				3,384
31 Net profit or (loss). Subtract line 30 from line 29.					
• If a profit, enter on both Schedule 1 (Form 1040), line 3 , and on Schedule SE, line 2 . (If you checked the box on line 1, see instructions). Estates and trusts, enter on Form 1041, line 3 .					1,724
• If a loss, you must go to line 32.					
32 If you have a loss, check the box that describes your investment in this activity. See instructions.					
• If you checked 32a, enter the loss on both Schedule 1 (Form 1040), line 3 , and on Schedule SE, line 2 . (If you checked the box on line 1, see the line 31 instructions). Estates and trusts, enter on Form 1041, line 3 .					
• If you checked 32b, you must attach Form 6198 . Your loss may be limited.					

32a ☐ All investment is at risk.
32b ☐ Some investment is not at risk.

For Paperwork Reduction Act Notice, see the separate instructions.

Schedule C (Form 1040) 2020

Name(s)

SSN

MATTHEW DESMARAIS

009-74-6641

Part III Cost of Goods Sold (see instructions)

33	Method(s) used to value closing inventory: a <input checked="" type="checkbox"/> Cost b <input type="checkbox"/> Lower of cost or market c <input type="checkbox"/> Other (attach explanation)	
34	Was there any change in determining quantities, costs, or valuations between opening and closing inventory? If "Yes," attach explanation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
35	Inventory at beginning of year. If different from last year's closing inventory, attach explanation.	35 3,321
36	Purchases less cost of items withdrawn for personal use	36 14,724
37	Cost of labor. Do not include any amounts paid to yourself	37
38	Materials and supplies	38
39	Other costs	39
40	Add lines 35 through 39	40 18,045
41	Inventory at end of year	41 0
42	Cost of goods sold. Subtract line 41 from line 40. Enter the result here and on line 4	42 18,045

Part IV Information on Your Vehicle. Complete this part **only** if you are claiming car or truck expenses on line 9 and are not required to file Form 4562 for this business. See the instructions for line 13 to find out if you must file Form 4562.

43	When did you place your vehicle in service for business purposes? (month/day/year) ▶				
44	Of the total number of miles you drove your vehicle during 2020, enter the number of miles you used your vehicle for:				
a	Business	b	Commuting (see instructions)	c	Other
45	Was your vehicle available for personal use during off-duty hours?	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
46	Do you (or your spouse) have another vehicle available for personal use?	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
47a	Do you have evidence to support your deduction?	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
b	If "Yes," is the evidence written?	<input type="checkbox"/> Yes	<input type="checkbox"/> No		

Part V Other Expenses. List below business expenses not included on lines 8-26 or line 30.

SMALL TOOLS & EQUIPMENT	1,090
BANK SERVICE CHARGES	10
COMPUTER EXP	11
48 Total other expenses. Enter here and on line 27a	48 1,111

2021-W2

Copy B--To Be Filed With Employee's FEDERAL Tax Return			OMB No. 1545-0008		
This information is being furnished to the Internal Revenue Service.					
a. Employee's social security number XXX-XX-6641	1. Wages, tips, other compensation 124744.90	2. Federal income tax withheld 22143.15			
b. Employer ID number (EIN) 06-0691005	3. Social security wages 129831.58	4. Social security tax withheld 8049.56			
d. Control number HRBLEQ-70637	5. Medicare wages and tips 129831.58	6. Medicare tax withheld 1882.56			
c. Employer's name, address, and ZIP code Blake Group Holdings Inc 4 New Park Road East Windsor, CT 06088					
e. Employee's name, address, and ZIP code Matthew Desmarais 491 State Street Apartment 2A Albany, NY 12203					
7. Social security tips	8. Allocated tips	9.			
10. Dependent care benefits	11. Nonqualified plans	12a. Code See inst. for Box 12 DD 5375.98			
13. Statutory employee	14. Other NYPFL 385.34 Auto Allow 1653.84	12b. Code AA 11941.37			
Retirement plan Y		12c. Code D 5086.68			
Third-party sick pay		12d. Code W 1080.00			
15. State NY	Employer's state ID number 060691005	16. State wages, tips, etc. 124744.90	17. State income tax 8738.73		
18. Local wages, tips, etc.	19. Local income tax	20. Locality name			

Form W-2 Wage and Tax Statement

2021

Department of the Treasury - Internal Revenue Service

Copy 2--To Be Filed With Employee's State, City, or Local Income Tax Return			OMB No. 1545-0008		
a. Employee's social security number XXX-XX-6641	1. Wages, tips, other compensation 124744.90	2. Federal income tax withheld 22143.15			
b. Employer ID number (EIN) 06-0691005	3. Social security wages 129831.58	4. Social security tax withheld 8049.56			
d. Control number HRBLEQ-70637	5. Medicare wages and tips 129831.58	6. Medicare tax withheld 1882.56			
c. Employer's name, address, and ZIP code Blake Group Holdings Inc 4 New Park Road East Windsor, CT 06088					
e. Employee's name, address, and ZIP code Matthew Desmarais 491 State Street Apartment 2A Albany, NY 12203					
7. Social security tips	8. Allocated tips	9.			
10. Dependent care benefits	11. Nonqualified plans	12a. Code See inst. for Box 12 DD 5375.98			
13. Statutory employee	14. Other NYPFL 385.34 Auto Allow 1653.84	12b. Code AA 11941.37			
Retirement plan Y		12c. Code D 5086.68			
Third-party sick pay		12d. Code W 1080.00			
15. State NY	Employer's state ID number 060691005	16. State wages, tips, etc. 124744.90	17. State income tax 8738.73		
18. Local wages, tips, etc.	19. Local income tax	20. Locality name			

Form W-2 Wage and Tax Statement

2021

Department of the Treasury - Internal Revenue Service

Copy C--For EMPLOYEE'S RECORDS(See Notice to Employee.) This information is being furnished to the Internal Revenue Service. If you are required to file a tax return, a negligence penalty or other sanction may be imposed on you if this income is taxable and you fail to report it.			OMB No. 1545-0008		
a. Employee's social security number XXX-XX-6641	1. Wages, tips, other compensation 124744.90	2. Federal income tax withheld 22143.15			
b. Employer ID number (EIN) 06-0691005	3. Social security wages 129831.58	4. Social security tax withheld 8049.56			
d. Control number HRBLEQ-70637	5. Medicare wages and tips 129831.58	6. Medicare tax withheld 1882.56			
c. Employer's name, address, and ZIP code Blake Group Holdings Inc 4 New Park Road East Windsor, CT 06088					
e. Employee's name, address, and ZIP code Matthew Desmarais 491 State Street Apartment 2A Albany, NY 12203					
7. Social security tips	8. Allocated tips	9.			
10. Dependent care benefits	11. Nonqualified plans	12a. Code See inst. for Box 12 DD 5375.98			
13. Statutory employee	14. Other NYPFL 385.34 Auto Allow 1653.84	12b. Code AA 11941.37			
Retirement plan Y		12c. Code D 5086.68			
Third-party sick pay		12d. Code W 1080.00			
15. State NY	Employer's state ID number 060691005	16. State wages, tips, etc. 124744.90	17. State income tax 8738.73		
18. Local wages, tips, etc.	19. Local income tax	20. Locality name			

Form W-2 Wage and Tax Statement

2021

Department of the Treasury - Internal Revenue Service

Copy 2--To Be Filed With Employee's State, City, or Local Income Tax Return			OMB No. 1545-0008		
a. Employee's social security number XXX-XX-6641	1. Wages, tips, other compensation 124744.90	2. Federal income tax withheld 22143.15			
b. Employer ID number (EIN) 06-0691005	3. Social security wages 129831.58	4. Social security tax withheld 8049.56			
d. Control number HRBLEQ-70637	5. Medicare wages and tips 129831.58	6. Medicare tax withheld 1882.56			
c. Employer's name, address, and ZIP code Blake Group Holdings Inc 4 New Park Road East Windsor, CT 06088					
e. Employee's name, address, and ZIP code Matthew Desmarais 491 State Street Apartment 2A Albany, NY 12203					
7. Social security tips	8. Allocated tips	9.			
10. Dependent care benefits	11. Nonqualified plans	12a. Code See inst. for Box 12 DD 5375.98			
13. Statutory employee	14. Other NYPFL 385.34 Auto Allow 1653.84	12b. Code AA 11941.37			
Retirement plan Y		12c. Code D 5086.68			
Third-party sick pay		12d. Code W 1080.00			
15. State NY	Employer's state ID number 060691005	16. State wages, tips, etc. 124744.90	17. State income tax 8738.73		
18. Local wages, tips, etc.	19. Local income tax	20. Locality name			

Form W-2 Wage and Tax Statement

2021

Department of the Treasury - Internal Revenue Service

Filing Status ☐ Single ☒ Married filing jointly ☐ Married filing separately (MFS) ☐ Head of household (HOH) ☐ Qualifying widow(er) (QW)
 Check only one box. If you checked the MFS box, enter the name of your spouse. If you checked the HOH or QW box, enter the child's name if the qualifying person is a child but not your dependent ▶

Your first name and middle initial MATTHEW		Last name DESMARAIS		Your social security number 009-74-6641	
If joint return, spouse's first name and middle initial EMILY		Last name DESMARAIS		Spouse's social security number 003-78-8111	
Home address (number and street). If you have a P.O. box, see instructions. 90 HACKETT BLVD				Apt. no. 2	
City, town, or post office. If you have a foreign address, also complete spaces below. Albany			State NY		ZIP code 12203
Foreign country name		Foreign province/state/county		Foreign postal code	

Presidential Election Campaign
 Check here if you, or your spouse if filing jointly, want \$3 to go to this fund. Checking a box below will not change your tax or refund.
☐ You ☐ Spouse

At any time during 2020, did you receive, sell, send, exchange, or otherwise acquire any financial interest in any virtual currency? ☐ Yes ☒ No

Standard Deduction Someone can claim: ☐ You as a dependent ☐ Your spouse as a dependent
☐ Spouse itemizes on a separate return or you were a dual-status alien

Age/Blindness You: ☐ Were born before January 2, 1956 ☐ Are blind **Spouse:** ☐ Was born before January 2, 1956 ☐ Is blind

(1) First name Last name		(2) Social security number	(3) Relationship to you	(4) Check if qualifies for (see instructions):	
				Child tax credit	Credit for other dependents
If more than four dependents, see instructions and check here ▶ <input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>

Attach Sch. B if required.	1 Wages, salaries, tips, etc. Attach Form(s) W-2	1 115,534		
	2a Tax-exempt interest	2b Taxable interest	2b 104	
	3a Qualified dividends	3a 31	3b Ordinary dividends	3b 32
	4a IRA distributions	4a	b Taxable amount	4b
Standard Deduction for- • Single or Married filing separately, \$12,400 • Married filing jointly or Qualifying widow(er), \$24,800 • Head of household, \$18,650 • If you checked any box under Standard Deduction, see instructions.	5a Pensions and annuities	5a 5,159	b Taxable amount	5b 0
	6a Social security benefits	6a	b Taxable amount	6b
	7 Capital gain or (loss). Attach Schedule D if required. If not required, check here ▶ <input type="checkbox"/>		7	
	8 Other income from Schedule 1, line 9		8 12,465	
	9 Add lines 1, 2b, 3b, 4b, 5b, 6b, 7, and 8. This is your total income ▶		9 128,135	
	10 Adjustments to income:			
	a From Schedule 1, line 22	10a 122		
	b Charitable contributions if you take the standard deduction. See instructions	10b 300		
	c Add lines 10a and 10b. These are your total adjustments to income ▶		10c 422	
	11 Subtract line 10c from line 9. This is your adjusted gross income ▶		11 127,713	
12 Standard deduction or itemized deductions (from Schedule A)		12 24,800		
13 Qualified business income deduction. Attach Form 8995 or Form 8995-A		13		
14 Add lines 12 and 13		14 24,800		
15 Taxable income. Subtract line 14 from line 11. If zero or less, enter -0-.		15 102,913		

16	Tax (see instructions). Check if any from Form(s): 1 <input type="checkbox"/> 8814 2 <input type="checkbox"/> 4972 3 <input type="checkbox"/> _____	16	14,219
17	Amount from Schedule 2, line 3	17	
18	Add lines 16 and 17	18	14,219
19	Child tax credit or credit for other dependents	19	
20	Amount from Schedule 3, line 7	20	
21	Add lines 19 and 20	21	0
22	Subtract line 21 from line 18. If zero or less, enter -0-	22	14,219
23	Other taxes, including self-employment tax, from Schedule 2, line 10	23	243
24	Add lines 22 and 23. This is your total tax .	24	14,462
25	Federal income tax withheld from:		
a	Form(s) W-2	25a	13,264
b	Form(s) 1099	25b	
c	Other forms (see instructions)	25c	
d	Add lines 25a through 25c	25d	13,264
26	2020 estimated tax payments and amount applied from 2019 return	26	
27	Earned income credit (EIC)	27	
28	Additional child tax credit. Attach Schedule 8812	28	
29	American opportunity credit from Form 8863, line 8	29	
30	Recovery rebate credit. See instructions	30	0
31	Amount from Schedule 3, line 13	31	
32	Add lines 27 through 31. These are your total other payments and refundable credits .	32	0
33	Add lines 25d, 26, and 32. These are your total payments .	33	13,264
34	If line 33 is more than line 24, subtract line 24 from line 33. This is the amount you overpaid .	34	0
35a	Amount of line 34 you want refunded to you . If Form 8888 is attached, check here. <input type="checkbox"/>	35a	0
▶ b	Routing number	▶ c Type:	<input type="checkbox"/> Checking <input type="checkbox"/> Savings
▶ d	Account number		
36	Amount of line 34 you want applied to your 2021 estimated tax .	36	
37	Subtract line 33 from line 24. This is the amount you owe now . Note: Schedule H and Schedule SE filers, line 37 may not represent all of the taxes you owe for 2020. See Schedule 3, line 12e, and its instructions for details.	37	1,198
38	Estimated tax penalty (see instructions)	38	

• If you have a qualifying child, attach Sch. EIC.
• If you have nontaxable combat pay, see instructions.

Refund

Direct deposit?
See instructions.

Amount You Owe

For details on how to pay, see instructions.

Third Party Designee

Do you want to allow another person to discuss this return with the IRS? See instructions

☐ Yes. Complete below.

☒ No

Designee's name ▶

Phone no. ▶

Personal identification number (PIN) ▶

Sign Here

Under penalties of perjury, I declare that I have examined this return and accompanying schedules and statements, and to the best of my knowledge and belief, they are true, correct, and complete. Declaration of preparer (other than taxpayer) is based on all information of which preparer has any knowledge.

Your signature

Date

Your occupation

If the IRS sent you an Identity Protection PIN, enter it here (see inst.) ▶

89654

03-26-2021

Spouse's signature. If a joint return, **both** must sign.

Date

Spouse's occupation

If the IRS sent your spouse an Identity Protection PIN, enter it here (see inst.) ▶

09580

03-26-2021

Phone no.

Email address

Paid Preparer Use Only

Preparer's signature

Date

PTIN

Check if:

03-26-2021

P00030063

☒ Self-employed

Preparer's name **Stephen C Quinones**

Phone no. **518-272-6069**

Firm's name ▶ **Taxperts**

Firm's address ▶ **406 Fulton Street**

Troy, NY 12180

Firm's EIN ▶

Go to www.irs.gov/Form1040 for instructions and the latest information.

Form **1040** (2020)

EEA

Name Matthew Desmarais	Business Phone (xxx-xxx-xxxx) (802) 793-0863
Home Address 68 Sycamore Street	Home Phone (xxx-xxx-xxxx) (802) 793-0863
City, State, & Zip Code Albany, NY 12208	
Business Name of Applicant/Borrower Energy Catalyst Technologies	
Business Address (if different than home address)	
Business Type: <input type="checkbox"/> Corporation <input type="checkbox"/> S-Corp. <input type="checkbox"/> LLC <input checked="" type="checkbox"/> Partnership <input type="checkbox"/> Sole Proprietor (does not apply to ODA applicant)	
This information is current as of [month/day/year] 05/05/2022 (within 90 days of submission for 7(a)/504/SBG/ODAWOSB or within 30 days of submission for 8(a) BD)	
WOSB applicant only, Married <input type="checkbox"/> Yes <input type="checkbox"/> No	

ASSETS (Omit Cents)	LIABILITIES (Omit Cents)
Cash on Hand & in banks..... \$ 29,954	Accounts Payable.....
Savings Accounts.....	Notes Payable to Banks and Others.....
IRA or Other Retirement Account..... \$ 71,822	(Describe in Section 2)
(Describe in Section 5)	Installment Account (Auto).....
Accounts & Notes Receivable.....	Mo. Payments
(Describe in Section 5)	Installment Account (Other).....
Life Insurance – Cash Surrender Value Only.....	Mo. Payments
(Describe in Section 8)	Loan(s) Against Life Insurance.....
Stocks and Bonds..... \$ 41,816	Mortgages on Real Estate..... \$ 298,135
(Describe in Section 3)	(Describe in Section 4)
Real Estate..... \$ 440,000	Unpaid Taxes.....
(Describe in Section 4)	(Describe in Section 6)
Automobiles.....	Other Liabilities.....
(Describe in Section 5, and include	(Describe in Section 7)
Year/Make/Model)	Total Liabilities..... \$ 298,135
Other Personal Property.....	Net Worth.....
(Describe in Section 5)	
Other Assets.....	
(Describe in Section 5)	
Total \$ 583,592	Total \$ 298,135 Must equal total in assets column.

Section 1. Source of Income.	Contingent Liabilities
Salary..... \$ 17,280.00	As Endorser or Co-Maker.....
Net Investment Income.....	Legal Claims & Judgments.....
Real Estate Income..... \$ 39,000.00	Provision for Federal Income Tax.....
Other Income (Describe below).....	Other Special Debt.....

Description of Other Income in Section 1 (Alimony or child support payments should not be disclosed in "Other Income" unless it is desired to have such payments counted toward total income)

I do not receive a regular salary from Energy Catalyst. I've been working without pay since its inception. For the first two years of Energy Catalyst's existence, I worked a full time job at Blake Equipment as a thermal sales engineer. In 2021, I received a large bonus for being the 2nd best salesperson in the company out of 50+ others. Most of that bonus went into stocks, so that I can pay myself as needed.

In addition, my wife makes \$60k per year as a teacher at Chatham HS, her employment provides steady income and high quality health care coverage.

Section 2. Notes Payable to Banks and Others. (Use attachments if necessary. Each attachment must be identified as part of this statement and signed.)

Names and Addresses of Noteholder(s)	Original Balance	Current Balance	Payment Amount	Frequency (monthly, etc.)	How Secured or Endorsed Type of Collateral

Section 3. Stocks and Bonds. (Use attachments if necessary. Each attachment must be identified as part of this statement and signed.)

Number of Shares	Name of Securities	Cost	Market Value Quotation/Exchange	Date of Quotation/Exchange	Total Value
	Multiple index funds			05/05/2022	\$ 41,816.00

Section 4. Real Estate Owned. (List each parcel separately. Use attachment if necessary. Each attachment must be identified as a part of this statement and signed.)

	Property A	Property B	Property C
Type of Real Estate (e.g. Primary Residence, Other Residence, Rental Property, Land, etc.)	Investment, 3 family	Primary Residence	
Address	408 Hamilton Street, Albany, NY 12210	68 Sycamore st. Albany, NY 12208	
Date Purchased	12/15/2014	10/15/2020	
Original Cost	\$ 201,286.00	\$ 148,756.00	
Present Market Value	\$ 220,000.00	\$ 220,000.00	
Name & Address of Mortgage Holder	Matthew Desmarais	Matthew Desmarais	
Mortgage Account Number	Wells Fargo	Homestead Funding Co.	
Mortgage Balance	\$ 156,638.00	\$ 141,497.00	
Amount of Payment per Month/Year	\$ 1,875.00	\$ 1,336.00	
Status of Mortgage	Good	Good	

Section 5. Other Personal Property and Other Assets. (Describe, and, if any is pledged as security, state name and address of lien holder, amount of lien, terms of payment and, if delinquent, describe delinquency.)

--

Section 6. Unpaid Taxes. (Describe in detail as to type, to whom payable, when due, amount, and to what property, if any, a tax lien attaches.)

\$0

Section 7. Other Liabilities. (Describe in detail.)

Section 8. Life Insurance Held. (Give face amount and cash surrender value of policies – name of insurance company and Beneficiaries.)

I authorize the SBA/Lender/Surety Company to make inquiries as necessary to verify the accuracy of the statements made and to determine my creditworthiness.

CERTIFICATION: (to be completed by each person submitting the information requested on this form and the spouse of any 20% or more owner when spousal assets are included)

By signing this form, I certify under penalty of criminal prosecution that all information on this form and any additional supporting information submitted with this form is true and complete to the best of my knowledge. I understand that SBA or its participating Lenders or Certified Development Companies or Surety Companies will rely on this information when making decisions regarding an application for a loan, surety bond, or participation in the WOSB or 8(a) BD program. I further certify that I have read the attached statements required by law and executive order.-

Signature Matthew Desmarais

Digitally signed by Matthew Desmarais
DN: cn=Matthew Desmarais, o=Energy Catalyst LLC,
ou, email=energy.catalyst.tech@gmail.com, c=US
Date: 2022.05.05 09:31:23 -04'00'

Date 05/05/2022

Print Name Matthew Desmarais

Social Security No. 009-74-6641

Signature _____

Date _____

Print Name _____

Social Security No. _____

May 9, 2022

To Whom It May Concern,

It is my pleasure to write a letter in support of Matthew Desmarais and his company, Energy Catalyst. As the President of the Capital Region chapter of the Association of Energy Engineers, I have recruited Mr. Desmarais to present three times since 2019 on clean energy topics (twice on geothermal) and he is a thought leader in this field. I've personally seen his demonstration units operate in very cold conditions and was impressed by the efficiency and design of the system.

The Energy Catalyst team has our full support and we are confident that they will be successful.

Sincerely,

Matt Arisohn

Matt Arisohn, CEM/CMVP

518-588-8815
matt.arisohn@gmail.com

CONTRACTORS ARE CALLING IT A GAME CHANGER FOR GEOTHERMAL

G.E.T. Staff

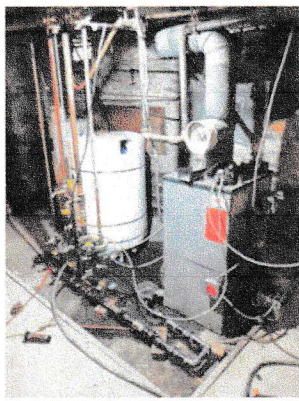
Energy Catalyst is an Albany-based manufacturer of geothermal heat pumps specializing in boiler-to-geothermal conversions. Founded in 2019, Energy Catalyst developed a heat pump that is lower cost and high efficiency for residential hot water heating systems. In the first of a two-part series, founder Matthew Desmarais sits down to talk us through their progress.

How did you get into geothermal heating and cooling?

Energy Catalyst started as a specialty geothermal contractor in converting homes with baseboard or radiators, but I quickly realized that this is a lot of work! After doing my first conversion "the hard way," I knew that the real problem was the technology and product limitations. When our installation work slowed down during the pandemic, I knew it was time to start designing a better solution. Now our "double hybrid" heat pump allows any home, with any system, to switch to geothermal without a full overhaul.

What makes your heat pump different from other heat pumps?

A traditional boiler supplies heat at 180 degrees. If you switch directly to a heat pump, which has a maximum temperature of 120 degrees, the heating system (baseboards, radiators) loses about 75% of its thermal capacity (i.e., its ability to heat the room). We solve this problem by producing hot water and hot air at the same time, with the same machine. This



Installation of an Energy Catalyst heat pump on a huge 6,000 sq ft house with old baseboards.

is our "double hybrid" patent pending design. Now, we can reuse the existing infrastructure without being limited by it. By passing cold air across the refrigerant, we significantly increase the efficiency of the system by 30 to 40%.

You mentioned hot air, how does the hot air get into the house?

When installing our system in a typical house, we run ductwork in between the



Heat pump with panels removed at Averill Park. (Photos: Matthew Desmarais)

joists to supply hot air to the first finished floor. In most cases, we add three to four supply registers and one return. In heating mode, we blow a small volume of hot air so that the building does not feel drafty. Keep in mind, 85% or more of the heat is still coming from the home's baseboards or radiators. The ductwork typically takes one to two days to install and allows us to provide the home with air filtration, air conditioning, and heating.

Many thanks to our section sponsor:



Your system does air conditioning too?

Yes, during the summer, the heat pump is very efficient at producing air conditioning. When our heat pump runs, hot water is a by-product and we use this to pre-heat the domestic hot water.

So, customers basically get free domestic hot water in the summertime?

Pre-heated hot water, but yes, it's a nice bonus for our customers. A typical geothermal system might be able to do that, but it would require a separate tank and additional components. This feature is built into every one of our products. Our product is designed by contractors, for contractors.

Tell us about your demo sites.

We have five fully installed demonstration sites in the New York Capital Region. These range from 1,500 square feet to 6,000 square feet. We have a range of homes from new construction to a home built in the 1840s. Our first demo site is in a new construction residential property in Saratoga. It is the only home of our five sites that is new construction. Our prototype has exceeded our expectations for efficiency and performance.

Where do you go from here?

Our five demo sites are NYSERDA-sponsored. We will be receiving third-party verification of performance and efficiency from KVV Engineering. We are officially launching our product in March 2022 for retail sale and offering contractor training sessions Q1 and Q2. *Continued on p. 27*

The Market Opportunity: In the customers words



Scott Mansfield <scott.m.mansfield1@gmail.com>
to Matthew

3:49 PM (1 hour ago) ☆ ↩ ⋮

Hi Matthew,

Thank you for getting back to me. We are planning a remodeling project on our house in Vestal, NY and I have been doing quite a lot of research into heating and cooling systems. We are currently using an oil fired boiler for hot water baseboard and DHW, while generally only using window units for air conditioning. I would really like to convert all of that to geothermal, but am finding it surprisingly difficult to find a system capable of satisfying those requirements. It looks like this is an area you specialize in and I'd be very interested to hear more about your system and to get an estimate on an installation here. Would you be willing to take on a project in Broome County? There seems to be almost no geothermal installers in the Southern Tier and the other HVAC companies I've spoken with are all just pushing mini-splits. There might be opportunities to expand down here.

I look forward to hearing from you,
Scott



Thomas Geothermal <thomasgeothermal@gmail.com>
to me

Thu, Aug 19, 2021, 8:53 AM ☆ ↩ ⋮

I watched this over coffee this morning. Definitely a new approach to an old problem. While most people see the radiator heat pump conversion problem as having to serve up 180-degree water (or something close to it) that a boiler can, the realization is most boilers are way oversized even for that zero-degree day. So, we do have quite a bit of latitude to successfully deliver lower temperature water on most days. Even our "high temp" water to water heat pumps like the WF 504W11 OptiHeat units - that promise water temps up to 150 degrees - can't quite make it and are down at a COP of 2.6 (on their 040 unit) at 147.5 degrees in the best case. I'm attaching their spec catalog in case you haven't seen it.

There is indeed a very large market, especially in NYS, for radiator conversions so you seem to be on the right track. I guess the other factor here is the relative unwillingness of our mainstream geo manufacturers to innovate. They seem to be stuck on the forced air conversions with mostly large and heavy unitary boxes and will often argue that these will produce the best efficiency. This may make them a possible choice for propane or oil forced air systems - but for the most part the existing ductwork in those systems is almost always too small for best performance. These are really not bolt-ins but it is pretty much the approach that Dandelion is taking. It would seem that most customers who like the cozy warmth of a radiator-based system on cold winter nights may not like a purely forced air system that blows prodigious amounts of air at something less than 100 degrees when it's zero out.

As I mentioned, maybe we can get up your way in October. Would love to see one of your test cases in action. I did mention to John C that he should think about giving you a slot on one the NY-GEO Tuesday webinars when they restart. They seemed to be booked though. He seemed to think something at the next conference in March could work. I think we're all looking forward to an in-person event for a change. In the meantime, keep innovating!



Horace <ronaldj@emond.com>
to me

Hello,

I read the article in Green Energy Times about your Geo-Thermal system. I live in Newfields, New Hampshire and would like to have the energy audit performed on our home here at 28 Finn Avenue. We just purchased this home built in 1996 that has base board hot water heating. Our previous home in CT had forced hot air. This house has no air conditioning currently. Before we start adding electric powered heating/cooling pumps to add air conditioning, it seems like your Geo-Thermal unit may be better to help heat our home efficiently and cool it also through the duct work?

Please email me or here is my cell 203-948-5172

Sincerely,

Ronald J Emond DVM
28 Finn Avenue
Newfields, NH 03858



Bob Haring-Smith <rharingsmith@gmail.com>
to Energy.catalyst.tech

Sat, Nov 13, 2021, 11:53 AM ☆ ↩ ⋮

Hi,

Thanks very much for your presentation today. As I indicated in my chat comment, we have an oil boiler running hot water to baseboards throughout the house. The boiler is about 25 years old and at our annual maintenance visits the past few years, the technician has made noises about its age and the difficulty of doing repairs due to some evident corrosion around some valves (apparently exacerbated by the antifreeze in the system).

I had someone come in who I thought would give me an estimate on a heat pump, but said we couldn't use one and instead provided an estimate for a new boiler. We also had someone come to talk about a pellet boiler, but I'd prefer something with even less environmental impact. So, for now, I've been sticking with the existing setup in hopes that technological advances will make a heat pump feasible. I was encouraged by your comments in today's session.

We are in Peterborough, NH in a house with about 3500 sq. ft. of living area. Heating oil deliveries in 2020 amounted to just under 1200 gallons.

I'd be happy to hear more of your thoughts on getting a heat pump installed here.

Many thanks.

GEOTHERMAL "GAME CHANGER"

- Cont'd from p.26



Heat pump with air handler, blue storage tank on the right.

2022. These training sessions will ensure there are reliable installers who know our product.

How could a reader get involved?

Come to our scheduled walkthroughs at our demonstration sites. Scheduled walkthroughs will take place 1/11/2022 in Saratoga, 1/13/22 in Hoosick Falls and 1/18/22 in Averill Park. We invite all who are interested to come check out our technology in action.

This winter, Energy Catalyst is offering a thermal capacity audit for residential properties. We will measure the thermal capacity of your home over the winter months in order to take the first step towards switching to geothermal. The audit costs \$300 but the \$300 will be applied as a credit towards an Energy Catalyst heat pump. Anyone interested can email energy.catalyst.tech@gmail.com or call them at 802-793-0863. ♻️

AL TECH LOAN FUND - MATURITY EXTENSION REQUEST

Company:	Indra Holdings, LLC	
Operating Company:	Philly's Bar & Grill, Inc	Account #: ALT615

Address:	622 Watervliet-Shaker Road	Disbursed:	\$500,000
	Latham, NY 12110	Amount:	
Phone:		Maturity:	June 1, 2022
Contact Name:	Rakesh Patel	Interest Rate:	2.63%
	Gunvantrai Patel (Father)	Repayment Terms:	\$1,450.22

Principal Balance for Renewal:	\$371,179.74
Proposed Renewal Terms:	60-month term based on a 10-year amortization
Proposed Interest Rate (75% of WSJ Prime):	3.00%
Proposed Renewal Repayment:	\$3,584.14

Collateral: Collateral will be a second lien on the property located at 622 Watervliet-Shaker Road, 612 Watervliet-Shaker Road and 20 Denise Drive, behind a first mortgage held by Kinderhook Bank

Business Description: Restaurant Bar & Grill and non-flag hotel

Use of Loan Proceeds: The main operating company Philly's Bar & Grill expanded and renovated their commercial property located at 622 Watervliet-Shaker Road (Route 155) including, expanding their kitchen and patio dining area along with totally remodeling their outdoor seating area.

2021 Site Review Info:

Conducted By:	Kevin Catalano	Visit Date:	October, 2021
Principal Balance as of Date of Review:	\$388,675	Repayment Experience:	Paid as agreed.
Violations:	None		

Financial Information: Borrower provided 2020 and 2021 accountant prepared tax returns; spreadsheet attached.

Narrative & Financial Analysis: Similar to other restaurants and companies in the hospitality industry, the operating company suffered in 2020. While sales dropped to \$1.183 million in 2020 and they business had negative cash flow, the business had a very strong 2021 demonstrating sales of \$1,884, an increase of over \$700K. 2022 has been off to a strong start with their busy season starting as the patio is open.

Cash flow for 2020 was negative with cash flow of -\$31,615. With an increase in sale in 2021, cash flow increased to \$365,280 an increase of over \$333K.

Mr. Patel also took advantage of the Restaurant Revitalization Fund which is demonstrated on their balance sheet as cash on hand is over \$1.2Million. Philly's was provided \$700,000 from the fund.

The American Rescue Plan Act established the Restaurant Revitalization Fund (RRF) to provide funding to help restaurants and other eligible businesses keep their doors open. This program will provide restaurants with funding equal to their pandemic-related revenue loss up to \$10 million per business and no more than \$5 million per physical location. Recipients are not required to repay the funding as long as funds are used for eligible uses no later than March 11, 2023.

Additionally, Mr. Patel is quietly open to selling the 1.5-acre site on the corner of Watervliet Shaker Road and Denise Drive to free up additional cash for long-term growth and sustainability.

Condition of Physical Collateral:

(Staff Observation): Restaurant appears in above average condition as Mr. Patel continues to invest in the property.

Employment:

FTEs. 5 Full time and 25 part-time employees.

Employment goals met: why/why not: yes, employment goals have been met.

Notes: None.

Balance Sheet	2021	2020
Cash	1,292,894	328,796
Accounts Receivable		
Inventory	20,000	20,000
other current assets	299,701	330,347
Current Assets		
Loan to Shareholders		
Buildings / Equipment	1,948,068	1,873,043
Less Acc Depreciation	1,147,919	988,686
Total Fixed Assets	800,149	884,357
Intangible Assets		
Less Acc Amortization		
Total Intangible Assets		
other asset	4,874	4,874
Total Assets	2,417,618	1,568,374
Liabilities and Owners Equity		
Accounts Payable		
Mortgages Less than 1 year	277,262	151,820
Other Current Liabilities	10,083	22,460
Total Current Liabilities		
Mortgages more than 1 year	890,835	1,036,512
Loans to Shareholders	3,794	
Total Long-term Liabilities		
other liabilities		
Total Liabilities	1,181,974	1,210,792
Owner's Equity	1,235,644	357,582

Partnership Return Form 1120-S

2021

2020

Sales	1,884,012	1,183,378
COGS	811,814	551,849
Gross Profit	1,072,198	631,529
Other Income	109,887	59,381
Total Income	1,182,085	690,910

Operating Expenses

Officer Comp	177,337	108,000
Salaries and Wages	232,876	182,633
Repairs and Maintenance	23,949	14,852
Auto and Truck Exp		
Bad Debts		
Rents	87,000	96,000
Insurance		
Taxes / Licenses	56,322	29,627
Interest	15,088	16,038
Depreciation	84,208	82,326
Advertising		
Pension	3,055	6,743
Employee Benefits		224
Other Deductions	236,266	284,446
Total Operating Expenses	916,101	820,889

Less: other income

Less: Gain/loss sale of asset

Other Expenses

Net Profit	265,984	-129,979
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