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October 16, 2020

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massdevelopment.com

Steven T. James, House Clerk
Massachusetts House of Representatives
24 Beacon Street, Room 145
Boston, MA 02133

RE: Emerging Technology Fund Quarterly Report

Dear Clerk of the Massachusetts House of Representatives:

Pursuant to Chapter 141, § 71 of the Acts and Resolves of 2003 and M.G.L. Chapter 23G, §27-28, enclosed please find the Emerging Technology Fund Quarterly Report for the period April 1, 2020 to June 30, 2020.

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Mike Kennealy
Chairman

Lauren A. Liss
President and CEO

The Emerging Technology Fund (ETF) was established to leverage private investment and to recruit and retain technology-based and advanced manufacturing companies in the Commonwealth. Since its creation in 2003, the ETF has helped innovative companies locate or expand in Massachusetts by providing financing through loans and guarantees (up to \$2.5 million) for facilities, equipment and working capital to help them grow and commercialize their cutting-edge products.

As of June 30, 2020, the ETF has made loans and guarantees to 55 companies totaling \$92,397,115 across each geographic region of the Commonwealth, creating jobs, and strengthening the innovation economy. Potential loans of another \$15.4 million were in the ETF pipeline as of June 30, 2020.

As required by Chapter 141, § 71 of the Acts and Resolves of 2003, we respectfully submit this report along with an ADA compliant electronic PDF that can be found online at www.massdevelopment.com/who-we-are/annual-reports/.

Sincerely,

A handwritten signature in blue ink that reads "Lauren A. Liss".

Lauren A. Liss
President and CEO

Emerging Technology Fund

Quarterly Report to the Legislature

April 1, 2020 to June 30, 2020

Summary

The Emerging Technology Fund (ETF) helps grow technology and advanced manufacturing companies in Massachusetts. Since its creation in 2003, the ETF has helped cutting-edge companies locate or expand in the Commonwealth, providing jobs and strengthening the innovation economy. Sixty-two loans and guarantees totaling \$92.4 million have closed through June 30, 2020. Thirty-one companies have repaid their ETF loans and most of these companies are thriving in Massachusetts.

Through these financings, the ETF has leveraged private investment for companies and maintained its ability to serve as an “evergreen fund,” providing unconventional risk capital in the form of debt to development-stage emerging technology companies seeking to commercialize their products. In an effort to increase both employment and production, the Commonwealth passed legislation in 2010 that allowed MassDevelopment to offer a working capital term loan product from the Fund to help growing companies address staffing and other working capital needs. The new capability has been well received, and 12 term working capital financings have closed as of June 30, 2020.

The ETF was last recapitalized in 2007, and in 2010 the Legislature transferred \$15 million to launch the Massachusetts Growth Capital Corporation. Since then, the Fund has taken various measures to ration capital. These measures, as well as early loan payoffs from successful portfolio companies, have stabilized the Fund’s liquidity position. The Fund has restored its maximum loan size to \$2.5 million and can now support larger expansions. The ETF, however, continues to rely on loan repayments to capitalize new loans and may need recapitalization if new investments for business expansions and relocations outpace loan repayments.

ETF Company of the Quarter



On February 13, 2020, the MassDevelopment Board of Directors approved a \$2,250,000 working capital term loan to Armored Things, Inc., a Boston-based software developer startup. The company has developed proprietary software, the Armored Things Crowd Intelligence Platform, which unifies existing data to support decisions around operations and security. By combining data from existing security and IT systems with predictive analytics, its platform provides facilities management teams with a real-time visual representation of people and flow within any campus or venue space. Easy-to-use dashboards equip clients to anticipate changes and inform decisions to improve service, operations, staffing, and security. Since the company’s founding in 2016, it has built a team of security and technology experts to deliver world-class solutions to stadiums, corporations, and campuses around the country. Today, in the wake of COVID-19, Armored Things is helping campuses and venues rely on AI-driven data to reopen with confidence.

Armored Things will use loan proceeds to hire additional full-time employees and support continued product development.

Background

Chapter 141 of the Acts of 2003 created the ETF. The statute requires submission of this quarterly report to certain legislative committees. Established to leverage private investment and to recruit and retain technology-based and advanced manufacturing companies in the Commonwealth, the approximately \$46 million Fund provides loans and guarantees for the purchase, expansion, or improvement of real estate; equipment purchases; and working capital needs. The Fund was initially capitalized with \$24.75 million, recapitalized in September 2006 with \$10 million as a result of an economic stimulus bill passed by the Legislature, and then recapitalized again in November 2007 with an additional \$15 million. In November 2010, \$15 million was transferred from the Fund to capitalize the Massachusetts Growth Capital Corporation in accordance with signed legislation. As of June 30, 2020, the Fund had \$16.35 million available to make loan commitments and a pipeline of \$15.4 million of projects that are considering applying or are in the underwriting process. The Fund is governed by an Advisory Committee that has adopted the following mission statement:

The mission of the Emerging Technology Fund is to create jobs in Massachusetts by providing financing for facilities, equipment and working capital that leverages private financing to growing companies employing or commercializing emerging technologies.

ETF Activity Summary

As of June 30, 2020, the ETF has made loans and guarantees to 55 companies totaling \$92,397,115. Potential loans of another \$15.4 million were in the ETF pipeline as of June 30, 2020. Additional loans totaling \$2 million were previously approved by the MassDevelopment Board of Directors and were in the closing process as of June 30, 2020. While the Agency has closed 62 loans and guarantees over the lifetime of the ETF, 34 of those have been paid off in full and are no longer in the portfolio. The Fund also received partial proceeds after liquidation of certain assets on loans provided to eight companies in the portfolio and charged-off \$6,517,005. Seven of the companies involved have ceased to exist.

Closed Loan Activity

Loans Closed

| Company | Loan Amount | Date Closed | Municipality | Industry |
|---|--------------|-------------|---------------|--|
| Algorex Health Technologies LLC | \$1,250,000 | 7/30/19 | Boston | Software |
| Amastan Technologies LLC | \$2,000,000 | 6/30/17 | North Andover | Advanced Material Manufacturer |
| Armored Things, Inc. | \$2,250,000 | 6/3/20 | Boston | Software |
| Dive Technologies, Inc. | \$1,300,000 | 6/30/20 | Quincy | Autonomous Underwater Vehicle Manufacturer |
| DynamiCare Health, Inc. | \$1,250,000 | 12/5/19 | Cambridge | Digital Health |
| First Light Diagnostics, Inc. | \$2,500,000 | 5/31/19 | Chelmsford | Medical Device |
| Massachusetts Materials Technologies, LLC | \$1,000,000 | 8/30/19 | Waltham | Advanced Manufacturing |
| MedMinder Systems Inc. | \$1,500,000 | 5/11/18 | Needham | Medical Device |
| MentorWorks Education Capital | \$1,000,000 | 3/20/20 | Boston | Financial Technology |
| Nano-C, Inc. | \$2,400,000 | 11/10/18 | Westwood | Advanced Material Manufacturing |
| Vyasa Analytics, LLC | \$1,800,000 | 6/27/18 | Newburyport | Software |
| ZyloTech | \$500,000 | 8/15/18 | Boston | Analytics Software |
| Sub-Total | \$18,750,000 | | | |

Loans Closed and Repaid in Full

| Company | Loan Amount | Date Closed | Municipality | Industry |
|---|-------------------------------------|-------------|--------------|-----------------------------------|
| Acacia Communications, Inc. (paid off 5/14/15) | \$3,000,000 | 2/25/11 | Maynard | Information Technology |
| Aspen Aerogels, Inc. (paid off 12/2/11) | \$1,500,000 | 1/12/05 | Northborough | Advanced Materials |
| Atentiv Holdings Inc. and Atentiv LLC (terminated by borrower 6/17/17) | \$3,000,000 | 3/4/16 | Waltham | Medical Device |
| Biomedical Research Models, Inc. (paid off 10/30/19) | \$500,000 and \$200,000 (Guarantee) | 11/17/10 | Worcester | Contract Research (Biotechnology) |
| Biomedical Research Models, Inc. (Replacement Facilities) (paid off 10/30/19) | \$500,000 and \$200,000 (Guarantee) | 10/29/14 | Worcester | Contract Research (Biotechnology) |

Loan Closed and Repaid in Full (continued)

| Company | Loan Amount | Date Closed | Municipality | Industry |
|---|--|-------------|---------------|---|
| Biomedical Research Models, Inc. (Replacement Facilities) (paid off 10/30/19) | \$500,000 and \$500,000 (Guarantee) | 12/29/15 | Worcester | Contract Research (Biotechnology) |
| BioVex Group, Inc. (paid off 3/1/11) | \$2,500,000 | 6/29/06 | Woburn | Biotechnology |
| Blue Sky BioTech, Inc. (paid off 7/9/07) | \$150,000 | 9/24/05 | Worcester | Contract Research (Biotechnology) |
| Celldex Therapeutics, Inc. (formerly Avant) (paid off 3/30/11) | \$903,657 | 12/12/03 | Fall River | Biopharmaceutical |
| ConforMIS, Inc. (paid off 12/23/16) | \$1,445,000 | 6/28/11 | Burlington | Medical Device |
| Court Square Group, Inc. (paid off 9/30/16) | \$500,000 | 3/28/12 | Springfield | Software & IT |
| CryoXtract Instruments LLC (paid off 4/21/17) | \$800,000 | 5/15/12 | Woburn | Medical Device |
| Cytonome, LLC (paid off 2/27/09) | \$600,000 | 6/30/05 | Boston | Medical Devices |
| Dynamo Micropower (paid off 5/12/16) | \$175,000 | 1/30/15 | Somerville | Fuel Flexible Turbine Power Systems |
| E-Ink Corporation (paid off 8/31/09) | \$1,000,000 | 5/15/07 | Cambridge | Electronic Display |
| Fusion Optix, Inc. (paid off 11/5/18) | \$1,500,000 | 8/30/12 | Woburn | CleanTech |
| Gingko Bioworks (paid off 10/5/16) | \$1,000,000 | 12/15/14 | Boston | Biotech Engineering |
| Hyaluron, Inc. (paid off 6/14/10) | \$1,000,000 | 12/19/05 | Burlington | Contract Manufacturer (Biopharma) |
| InVivo Therapeutics Corp. (paid off 3/1/19) | \$2,000,000 | 10/5/12 | Cambridge | Medical Device |
| Lexington Medical, Inc. (paid off 6/12/19) | \$2,500,000 | 2/22/17 | Billerica | Medical Device |
| Lionano Inc. (paid off 11/25/19) | \$2,500,000 | 2/1/19 | Woburn | Battery Material Manufacturer |
| Luminus Devices, Inc. (paid off 8/22/13) | \$2,500,000 | 12/26/07 | Billerica | Solid State Lighting |
| MicroTest Laboratories Inc. (paid off 7/31/12) | \$799,340 (Loan) \$367,500 (Mortgage Guarantee) | 7/6/05 | Agawam | Contract Manufacturer (Biopharma) |
| Middleton Aerospace Corporation (paid off 8/31/16) | \$2,000,000 | 8/11/06 | Haverhill | Military and Commercial Aircraft Component Manufacturer |
| Nuvera Fuel Cells, LLC (paid off 12/22/10) | \$2,500,000 | 1/31/07 | Billerica | Hydrogen Fuel Cell Developer and Manufacturer |
| Persimmon Technologies (paid off 12/18/15) | \$1,500,000 | 10/1/13 | Wakefield | Vacuum Robots |
| PoroGen Corporation (paid off 10/2/15) | \$1,000,000 | 4/1/13 | Woburn | Industrial Filtration Systems |
| PowerHouse Dynamics (paid off 3/1/18) | \$1,000,000 | 3/30/12 | Newton | CleanTech |
| Premium Power Corporation (paid off 4/13/12) | \$2,500,000 | 5/28/09 | North Reading | POS Battery Manufacturer |
| Qteros, Inc. (terminated by borrower 11/22/10) | \$2,000,000 | 10/29/09 | Chicopee | Biofuel Developer |
| Quiet Logistics, Inc. (paid off 12/28/18) | \$2,500,000 | 1/16/12 | Devens | eCommerce and Fulfillment Systems |
| RenaMed Biologics Inc. (paid off 12/29/06) | \$2,300,000 | 6/14/06 | Westborough | Bioreplacement Therapies |
| Scencio Systems, Inc. (paid off 8/1/19) | \$650,000 | 8/18/14 | Boxborough | Telemedicine |
| T2 Biosystems, Inc. (paid off 12/30/16) | \$1,687,500 | 5/9/11 | Lexington | Medical Device |
| TeraDiode, Inc. (paid off 3/7/17) | \$2,000,000 | 12/6/12 | Wilmington | Industrial Lasers |
| Valeritas, Inc. (paid off 5/19/14) | \$2,500,000 | 1/12/07 | Shrewsbury | Medical Device |
| Sub-Total | \$56,277,997 | | | |

Loans Closed and Principal Partially Charged Off

| Company | Loan Amount | Date Closed | Municipality | Industry |
|----------------------------|---|-------------|--------------|---|
| Acusphere, Inc. | \$2,000,000 (\$1,522,133 charged off 5/19/09) | 8/16/04 | Tewksbury | Specialty Pharmaceutical |
| Advanced MicroSensors | \$2,000,000 (\$1,462,387 charged off 3/31/14) | 10/13/11 | Shrewsbury | Electronics |
| Beacon Power, LLC | \$2,500,000 (\$898,333 charged off 3/7/12) | 6/30/08 | Tyngsboro | Renewable Energy |
| ECI BioTech | \$630,000 (\$530,004 charged off 1/31/16) | 11/16/07 | Worcester | Health Care Products |
| Konarka Technologies, Inc. | \$2,500,000 (\$344,417 charged off 11/25/13) | 2/11/09 | New Bedford | Solar Power Consumer Product Manufacturer |
| Lilliputian Systems, Inc. | \$2,500,000 (\$298,507 charged off 6/30/14) | 11/13/09 | Wilmington | Portable Fuel Cell Power Developer |
| N12 Technologies, Inc. | \$2,500,000 (\$743,644 charged off 10/29/19) | 12/12/14 | Cambridge | Composite Materials |
| Spherics, Inc. | \$2,500,000 (\$568,458 charged off 11/19/08) | 7/12/05 | Mansfield | Pharmaceutical |
| WorkshopLive LLC | \$239,118 (\$150,860 charged off 6/30/12) | 5/26/05 | Pittsfield | Music Software and Technology |
| Sub-Total | \$17,369,118 | | | |
| Total | \$92,397,115 | | | |

Uncommitted Fund Balance

Between April 1, 2020 and June 30, 2020, the ETF received \$205,179 in loan repayments, interest income, and fees. Operating expenses were \$144,985. The uncommitted balance of the Fund on June 30, 2020 is \$16,351,998.

| | |
|--|--------------------|
| As of 6/30/20 | |
| Beginning Fund Balance | \$ 24,750,000 |
| Fund Recapitalization | 10,000,000 |
| Fund Recapitalization | 15,000,000 |
| Total Funding | 49,750,000 |
| Cash Activity (accumulated): | |
| Net Loan Disbursements* | (15,753,678) |
| Operating Income | 10,235,974 |
| Operating Expenses | (6,664,145) |
| Transfer to MGCC | (15,000,000) |
| Investment Income | 7,885,158 |
| Non-operating Income | 5,517,234 |
| Accounts Receivable | 0 |
| Accrued Expenses | 864 |
| Accrued Interest Income | (88,466) |
| Prepaid Insurance | (3,352) |
| Investment in Warrants | (432,417) |
| Unearned Insurance Premium | 0 |
| Deferred Income | 0 |
| Investment in Common Stock | (1,447,419) |
| Investment in Privately Held Companies | (641,339) |
| Equity Investment - Contributions | (3,930,173) |
| Cash Balance | 29,428,241 |
| Less: Cash Commitments: | |
| Reserved for Guarantees Closed | 0 |
| Undisbursed Loans and Guarantees | (9,006,415) |
| Approved Loans and Guarantees (not closed) | (3,000,000) |
| Available Committed Equity - MTDC | (1,069,828) |
| Uncommitted Cash Balance: | 16,351,998 |
| Less: | |
| Current Pipeline - potential new loans | (15,350,000) |
| Cash Exceeding Current Pipeline | \$1,001,998 |
| * Total loan write-offs as of 6/30/20 | \$6,517,005 |

Financial and Technical Assistance

MassDevelopment assisted Acusphere, Inc., Celldex Therapeutics, Inc. (formerly Avant Immunotherapeutics Inc.), and Cytonome, LLC in finding suitable facilities in the Commonwealth. All loan applicants received assistance in structuring financing for their projects with MassDevelopment and other lenders.

Geographic Distribution

As of June 30, 2020, the ETF has closed loans and guarantees with companies in each of the Commonwealth's five geographic regions as follows:

| Region | Closed Loans | # of Companies |
|----------------|----------------------|----------------|
| North | \$ 20,300,000 | 9 |
| South | \$ 7,203,657 | 4 |
| Central | \$ 13,980,000 | 7 |
| West | \$ 3,905,958 | 4 |
| Greater Boston | \$ 47,057,500 | 31 |
| Total | \$ 92,397,115 | 55 |

Emerging Technology Fund Advisory Committee

Mark Leuchtenberger, Chairman
Executive Chairman, Aleta Biotherapeutics

Robert Anderson
Chairman, Massachusetts Biomedical Initiative

Chris Covington
Managing Director, Covington Associates

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Designee of Patrick Larkin
Director of Cluster Development, John Adams Innovations Institute
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Vinit Nijhawan
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