



The Commonwealth of Massachusetts

AUDITOR OF THE COMMONWEALTH

ONE ASHBURTON PLACE, ROOM 1819
BOSTON, MASSACHUSETTS 02108

A. JOSEPH DeNUCCI
AUDITOR

TEL. (617) 727-6200

NO. 2007-1304-3A

INDEPENDENT STATE AUDITOR'S REPORT ON
CERTAIN ACTIVITIES OF THE
MASSACHUSETTS TECHNOLOGY
COLLABORATIVE
JULY 1, 2004 TO SEPTEMBER 30, 2006

OFFICIAL AUDIT
REPORT
APRIL 13, 2007

TABLE OF CONTENTS/EXECUTIVE SUMMARY

INTRODUCTION

1

The Massachusetts Technology Park Corporation (MTPC) is a public instrumentality of the Commonwealth of Massachusetts created pursuant to Chapter 40J of the Massachusetts General Laws whose mission is to foster the expansion of industrial and commercial activity and employment opportunities within the Commonwealth. MTPC reports to the Department of Business and Technology, but is not subject to the supervision or control of any state agency except as provided in its enabling legislation. In 1994, MTPC formed the Massachusetts Technology Collaborative (MTC), which replaced the Massachusetts Microelectronics Center as its operating entity for fostering economic growth within the Commonwealth. MTC's goal is to enhance the state's economic competitiveness, strengthen its high-tech industry clusters, and harness local, clean energy resources. MTC, which receives funding from public utilities, state appropriations, and lease revenues, has two primary areas of operations. The first operational area is the John Adams Innovation Institute (JAII), which is the economic development arm of the MTC. The JAII strives to improve the state's competitive edge in the innovation economy, supporting industry clusters and institutions in efforts to stimulate new job creation and job retention in knowledge- and technology-based companies. The second operational area is the Renewable Energy Trust, whose goal is to increase the use and generation of renewable energy in the state and region and enable Massachusetts companies to capture a greater share of the market for renewable energy technologies.

The objectives of our review, which covered the period July 1, 2004 to September 30, 2006, were to determine the efficiency and effectiveness of MTC's operations, including its internal controls over revenues and expenditures; analyze the internal controls over receipts and expenditures of the Massachusetts Renewable Energy Trust and the John Adams Innovation Institute; assess MTC's compliance with its enabling legislation, Chapter 40J and Chapter 25, Section 20, of the General Laws; and determine whether MTC was properly administering its contracts and grants.

Our review indicated that, for the 27-month period ended September 30, 2006, MTC maintained its accounting records in accordance with prescribed requirements; maintained an internal control structure that is suitably designed and implemented to adhere to the control objectives; and complied with applicable laws, rules, and regulations for the areas reviewed.

INTRODUCTION

Background

The Massachusetts Technology Park Corporation (MTPC) is a public instrumentality of the Commonwealth of Massachusetts created pursuant to Chapter 40J of the Massachusetts General Laws. MTC, whose mission is to foster the expansion of industrial and commercial activity and employment opportunities within the Commonwealth, reports to the Department of Business and Technology, but is not subject to the supervision or control of any state agency except as provided in its enabling legislation. Chapter 405 of the Acts of 1984 provided for the transfer of a parcel of land in the town of Westborough, formerly occupied by the Lyman School for Boys, to MTPC. The property was initially utilized for the purpose of establishing the Massachusetts Microelectronics Center, a collaborative effort of industry, university, and government. However, in 1994 MTPC formed the Massachusetts Technology Collaborative (MTC), which replaced the Massachusetts Microelectronics Center as its operating entity for fostering economic growth within the Commonwealth.

MTC owns, manages, and develops its Westborough headquarters in the Massachusetts Technology Park. The 36-acre campus includes the George Kariotis Center, which serves as MTC's administrative headquarters; the Karl Weiss Education and Conference Center, which is leased by the Worcester Polytechnic Institute; and the Innovation Center, which houses the Renewable Energy Trust (RET) and the John Adams Innovation Institute (JAII). The campus also includes a 74,000 square foot state-of-the-art fabrication facility, currently leased by the Kopin Corporation, a Massachusetts-based manufacturer of high-resolution flat panel displays.

MTC's activities are directed by a 23-member Board of Directors, representing senior officials from public and private colleges and universities, technology companies, and state government. In accordance with Chapter 40J, Section 3, of the General Laws, the board consists of three state officials that serve as ex officio members and 20 individuals appointed by the Governor.

Between July 1, 2004 and September 30, 2006, MTC had expenditures of \$56,239,091 and received revenues of \$123,198,144 from such sources as public utilities, state appropriations, and lease revenues. MTC has two primary areas of operations: the JAII, which sponsors a portfolio of projects that range from sponsored research on emerging economic trends to collaborative activities

with specific industry clusters and associated organizations, and the Renewable Energy Trust. In addition, MTC has established a Healthcare Technology division to implement the Massachusetts Hospital Computerized Physician Order Entry (CPOE) Initiative, whose goal is to improve patient safety and quality of care and to lower costs in the state's healthcare system through achieving full implementation of CPOE systems in all acute care hospitals in the state within four years.

Massachusetts Technology Collaborative Revenues and Expenditures

July 1, 2004 through September 30, 2006

	Fiscal Year 2005	Fiscal Year 2006	7/1/06 - 9/30/06
Revenue			
Renewable Energy Charge	\$23,719,186	\$24,284,384	\$ 6,800,509
State Appropriation	3,450,000	5,500,000	14,662,500
Program Earnings	2,946,113	1,010,371	318,488
Investment Earnings	10,859,509	6,788,887	6,596,875
Alternative Compliance	13,648,069	33,170	-
Lease Revenue	807,577	817,218	209,114
Other Revenue	<u>441,106</u>	<u>303,976</u>	<u>1,092</u>
Total Revenue	<u>\$55,871,560</u>	<u>\$38,738,006</u>	<u>\$28,588,578</u>
Expenditures			
Renewable Energy	\$15,261,097	\$21,437,476	\$ 4,623,847
Alternative Compliance	161,261	88,555	8,314
Waste to Energy	1,890,640	1,723,679	1,968
Healthcare Technologies	-	861,568	131,766
JAIL/ Economic Development Programs	2,319,949	4,958,372	1,214,300
Campus Development & Operations	<u>724,761</u>	<u>672,258</u>	<u>159,280</u>
Total Expenditures	<u>\$20,357,708</u>	<u>\$29,741,908</u>	<u>\$ 6,139,475</u>

John Adams Innovation Institute

The JAI was established pursuant to Section 18 of Chapter 141 of the Acts of 2003, which added Section 6A to Chapter 40J of the General Laws of the Commonwealth. The JAI is responsible for the management of two public investment funds created through the 2003 Act to Promote Jobs, Economic Stability and Competitiveness in Massachusetts: the Innovation Institute Fund (initially

referred to as the “Regional Fund”), which was established pursuant to Section 18 of Chapter 141 of the Acts of 2003, and the Massachusetts Research Center Matching Fund (Matching Fund), which was established pursuant to Section 19 of Chapter 141 of the Acts of 2003. The MTC Board of Directors, pursuant to Chapter 40J, Section 6A, of the General Laws, has established a Governing Board to oversee the activities of the JAII and has delegated to the Governing Board the authority to approve certain expenditures from the Innovation Institute Fund and the Matching Fund. Members of the Governing Board are appointed by the MTC Board of Directors.

MTC established the JAII in 2004 as an operating division of the corporation encompassing the two investment funds established by the Legislature as well as a portfolio of existing activities:

- The Innovation Institute Fund is intended to support initiatives in all regions that will spur growth in the state’s innovation economy across the Commonwealth.
- The Massachusetts Research Center Matching Grant Fund is intended to support activities at universities and not-for profit research institutes that will increase the likelihood of securing additional federal funding for research and development and increase the economic benefit derived from the conduct of that research and development to the Commonwealth
- Other program activities that support the mission of the JAII and are funded primarily through external funds from such sources as state government, federal government, foundations, and private industry.

Innovation Institute Fund

Within the JAII, the \$15 million Innovation Institute Fund, which has had an initial focus on regional economic growth, supports economic development projects that promote industry cluster growth and improved conditions for the innovation economy across the Commonwealth. Grants are provided to public and not-for-profit organizations to enable them to undertake initiatives that are intended to create and maintain a favorable environment for the establishment, attraction, retention, and expansion of technology-intensive businesses, as follows.

- Regional Priority Grants - Early stage, small- to medium-scale technology-based projects that can move a region or an economic cluster forward. Fundable projects will advance opportunities for the development, retention, and growth of employment in industry sectors in regions across the Commonwealth. Grants range from \$25,000 to \$150,000.
- Regional Project Grants – New and unique economic development projects that will enhance the competitiveness of a specified cluster, technology, or industry sector within a given region. Grants are up to \$500,000.

- Regional Infrastructure Grants – Large-scale, competitive awards for the purpose of catalyzing exceptional opportunities to grow/expand a specified technology-based economic sector. Grants are awarded up to \$2 million.

The Massachusetts Research Center Matching Grant Fund

Also within the JAII, the \$30 million Research Center Matching Grant Fund supports efforts to enable university-based research centers to develop and transfer technology to industry in the Commonwealth.

- Research Center Matching Grants - Grants to increase the likelihood for federal award and increase economic benefits. The award can be up to 20% of the Federal Center Award or up to a maximum of \$2 million.
- Research Center Development Grants - These awards will be used to support the initial activities of universities to plan and establish a new research center. Grants are a one-to-one match with a maximum of \$100,000.
- Centers of Excellence Grants - These are major awards to build new research capacity and establish Centers of Excellence in specific technology sectors, with a grant size of \$3 million to \$5 million.

Other JAII Projects

Additionally, the JAII provides various forms of assistance on projects that are aligned with its mission and designed to accomplish stated goals and objectives. In this regard, the JAII focuses its attention on efforts to promote the development of technology-intensive industries (or clusters) in the Commonwealth and to deploy technology to address specific social and economic issues in the Commonwealth. Some examples of these projects include the following.

- Berkshire Wireless Learning Initiative - A pilot program being implemented in Berkshire County to evaluate a one-to-one approach of using laptop computers and wireless communication to transform teaching and learning, the initiative is examining how curriculum delivery can be dramatically changed to improve student achievement and enhance the teaching and learning experience.
- The Massachusetts Life Sciences Collaborative - In order to develop a comprehensive, sustainable, and integrated Massachusetts strategy to spur life sciences growth and promote cross-sector collaboration, the Massachusetts Life Sciences Collaborative has been created. The initiative brings together the executives of Massachusetts biotechnology, medical device, and pharmaceutical companies, and the leadership of the Commonwealth's universities, academic health centers, and research institutions, along with the state's premier industry councils and trade associations.

- Research and Analysis - The JAII also carries out independent, nonpartisan studies on issues related to science, technology, competitiveness, and economic development in the Commonwealth. The principal purpose of these studies is to provide objective information and practical recommendations to decision makers in industry, academia, and government in order to effect needed policy changes and other reforms. The results of research and analytical work are summarized in publications written for diverse audiences and further disseminated through seminars, conferences, and other activities as part of an integrated education program.

Financial Assistance Awards and Expenditures, Inception to September 30, 2006

	Awards	Expenditures	Unexpended Award Balance
Regional			
Priority	\$ 2,119,112	\$ 888,081	\$ 1,231,031
Project	-	-	-
Broadband	45,082	45,082	-
Life Sciences	82,500	62,000	20,500
Infrastructure	-	-	-
Total Regional	<u>\$ 2,246,694</u>	<u>\$ 995,163</u>	<u>\$ 1,251,531</u>
Match			
Center of Excellence	\$ 8,073,761	\$ 526,681	\$ 7,547,080
Matching	2,505,000	-	2,505,000
Research Centerr. Planning	863,893	191,370	672,523
Principal Investigator-Industry	-	-	-
Total Match	<u>\$11,442,654</u>	<u>\$ 718,051</u>	<u>\$10,724,603</u>
MTC Development			
Regional Competitive Council	\$ 446,141	\$ 430,930	\$ 15,211
MTC Development-Other	347,530	25,000	322,530
Wireless Learning	45,055	45,055	-
Nanotechnology	<u>132,918</u>	<u>84,401</u>	<u>48,517</u>
Total MTC Development	<u>\$ 971,644</u>	<u>\$ 585,386</u>	<u>\$ 386,258</u>
Berkshire Wireless Learning			
Berkshire Wireless	<u>\$ 2,100,000</u>	<u>\$ 751,058</u>	<u>\$ 1,348,942</u>
Total Berkshire Wireless Learning	<u>\$ 2,100,000</u>	<u>\$ 751,058</u>	<u>\$ 1,348,942</u>
 Grand Total JAII¹	 <u><u>\$16,760,992</u></u>	 <u><u>\$3,049,658</u></u>	 <u><u>\$13,711,334</u></u>

¹ Awards are funding commitments approved by the appropriate MTC approving authority to a specific recipient for a specified purpose. Expenditures are funds that have been paid out against awards based upon the required earnings process being performed. Unexpended Awards Balance is the total of the award commitments less the expenditures made against that award to date.

Renewable Energy Trust

The Renewable Energy Trust (RET) seeks to maximize environmental and economic benefits for the citizens of the Commonwealth by pioneering and promoting clean energy technologies and fostering the emergence of substantial markets for electricity generated from renewable sources.

The RET programs include:

a. Green Buildings Program

The Green Buildings Program provides financial and technical support for the disciplined inclusion of renewable energy technologies in the broader process of green building development. The program supports individual projects, and will use the results to increase knowledge of green building and renewable energy benefits and practices among building professionals and the public. Some current initiatives include:

- Green Affordable Housing – Provides funding for affordable housing that uses green, healthy, and clean energy technologies.
- Green Schools – Provides support services to K-12 school districts interested in building high-performance green schools.
- Large Onsite Renewables Initiative – Extends grants to expand the use of large renewable energy generation systems (more than 10kw in size).
- Small Renewables Initiative – Supports the installation of small, renewable generation systems (up to 10kw in size) through rebates for residential, commercial, industrial, and institutional facilities.

b. Clean Energy Program

The Clean Energy Program aims to achieve the first of the RET's fundamental goals: to shift the state toward a greater reliance on renewable energy resources to meet energy needs in the Commonwealth. The program focuses on both supply and demand. On the supply side, it supports both utility-scale and community-scale energy projects that harness wind, sun, and bioenergy. On the demand side, it educates citizens, teachers, and students, and advances the green electricity market by giving consumers objective information and attractive choices. Some of the program's current initiatives include:

- K-12 Education and Outreach – Educates the next generation of consumers and voters by incorporating renewable energy into the curriculums of schools throughout Massachusetts.

- Public Awareness - Encompasses a wide range of activities, including a clean energy tour that seek to increase the profile of renewable energy with the public.
- Consumer Clean Energy Choice – Makes it more desirable and easier for consumers to voluntarily make green electricity purchases. The program enables some payments to be tax-deductible to consumers and provides matching grants that benefit municipalities and the low-income community.
- Clean Energy Development - Helps developers to secure financing for proposed renewable energy facilities by guaranteeing a revenue stream from the sale of renewable energy certificates.
- Community Wind Collaborative - Helps the Commonwealth’s cities and towns to develop small-scale, community-owned wind projects.

c. Industry Investment and Development Program

The RET’s Industry Support Program is committed to accelerating job growth and economic development in the renewable energy industry cluster in Massachusetts and promoting the development of technologies that lay the foundation for long-term growth of the industry. The Industry Support Program makes direct investments to catalyze new product commercialization, works to build networks within the cluster and provide services that better enable companies to access capital and other vital resources, and strives to lower barriers to success for entrepreneurs in the state. Some initiatives include:

- Massachusetts Green Energy Fund – A privately managed venture capital fund, created with \$15 million lead investment from the Trust, which invests in renewable energy companies based in Massachusetts.
- Sustainable Energy Economic Development Initiative (SEED) – Primarily intended for early stage renewable energy companies, SEED funds bridge a gap in a company’s capital raising lifecycle, providing the company with time and resources to advance to a point at which it would be a good candidate for private investment.
- Industry Investment and Development Program – Accepts unsolicited proposals for financial assistance for unique projects, ideas, methods, or approaches that do not fit into the existing initiatives.

d. Policy Unit

The Policy Unit of the RET aims to increase the availability, use, and affordability of renewable energy by collaborating with interested stakeholders to address market and regulatory barriers facing renewable energy technologies and installations. The electricity market in Massachusetts

is subject both to state and regional regulation and to market rules. Regulation and market structure help shape the roles and responsibilities of market participants, and the success of renewable energy development in the state is dependent on these drivers.

e. Waste to Energy

The Waste to Energy (WTE) grant program was developed to provide financial assistance for communities incurring increased cost for waste disposal as a result of stricter environmental regulations. To be eligible for the grant, the applicant must have been a Massachusetts municipality or a government body with a long-term waste disposal contract with a WTE facility located within the Commonwealth. MTC was required to calculate and segregate the derived WTE funds from RET revenues pursuant to Chapter 25, Section 20, of the General Laws, which required that in calendar years 1998 through 2002, the revenues derived from the RET be set aside to implement the WTE grant.

MTC accepted grant applications from 138 Massachusetts communities and awarded \$55,462,176 in grants to these 138 communities. As of September 30, 2006, \$54,069,702 had been paid. MTC anticipates that the remaining balance of \$1,392,474 will be paid to the communities in calendar year 2007.

Renewable Energy Trust

Financial Assistance Awards and Expenditures - Inception to September 30, 2006

	Awards	Expenditures	Unexpended Award Balance
Green Buildings			
Commercial Industrial and Institutional	\$ 1,289,474	\$ 325,113	\$ 964,361
Affordable Green Housing	24,845,940	311,328	24,534,612
Green Buildings	9,328,177	6,165,448	3,162,729
Green Schools	10,417,446	8,079,103	2,338,343
Large Renewables	7,090,985	1,637,129	5,453,856
Premium Power Installation	425,000	406,000	19,000
Premium Power Planning	873,926	847,163	26,763
Small Renewables	5,246,735	1,420,019	3,826,716
Utility Congestion Relief	1,022,620	154,074	868,546
Solar to Market	4,711,103	3,698,622	1,012,481

Special Opportunities	2,548,243	1,688,125	860,118
Residential Solar Loan	<u>-</u>	<u>-</u>	<u>-</u>
Total Green Buildings	<u>\$67,799,649</u>	<u>\$24,732,124</u>	<u>\$43,067,525</u>

Clean Energy

Consumer Aggregation	\$ 1,384,300	\$ 1,304,070	\$ 80,230
Mass. Clean Energy Choice	2,689,602	1,556,843	1,132,759
Cape Honest Broker	449,741	414,750	34,991
Community Planning	1,137,431	897,644	239,787
Community Wind Collaborative	4,182,322	2,905,920	1,276,402
Development Financing	3,140,000	35,000	3,105,000
Green Power Partnership	48,823,003	-	48,823,003
K-12 Education	1,228,020	1,145,699	82,321
Public Awareness	4,249,132	3,385,254	863,878
Predevelopment Financing	2,546,258	1,408,773	1,137,485
Green Power Purchase	<u>17,000,000</u>	<u>17,000,000</u>	<u>-</u>
Total Clean Energy	<u>\$86,829,809</u>	<u>\$30,053,953</u>	<u>\$56,775,856</u>

Industry Investment and Development

Economic Development Investments	\$11,076,450	\$ 7,604,788	\$ 3,471,662
Green Energy Fund	15,000,000	3,091,323	11,908,677
Sustainable Energy Economic Development	2,457,539	2,035,061	422,478
Cluster Development	2,115,582	1,715,280	400,302
Emerging Technology	<u>3,115,775</u>	<u>2,143,227</u>	<u>972,548</u>
Total Industry Investment and Development	<u>\$33,765,346</u>	<u>\$16,589,679</u>	<u>\$17,175,667</u>

Policy Unit

Distributed Generation Collaborative	\$ 1,263,216	\$ 1,047,146	\$ 216,070
Distributed Generation Policy Collaboration	-	-	-
Long-Term Financing	<u>618,395</u>	<u>488,328</u>	<u>130,067</u>
Total Policy	<u>\$ 1,881,611</u>	<u>\$ 1,535,474</u>	<u>\$ 346,137</u>

Multi Program

Low-Income Collaborative	\$ 8,136,458	\$ 1,713,027	\$ 6,423,431
Office of Commonwealth Development	1,035,898	506,761	529,137

Offshore Wind Collaborative	<u>2,899,415</u>	<u>939,194</u>	<u>1,960,221</u>
Total Multi Program	<u>\$12,071,771</u>	<u>\$ 3,158,982</u>	<u>\$ 8,912,789</u>
Waste to Energy			
Waste to Energy	<u>55,462,176</u>	<u>54,069,702</u>	<u>1,392,474</u>
Total Waste to Energy	<u>\$55,462,176</u>	<u>\$54,069,702</u>	<u>\$1,392,474</u>
Grand Total RET	<u>\$257,810,362</u>	<u>\$130,139,914</u>	<u>\$127,670,448</u>

-Awards are funding commitments approved by the appropriate MTC approving authority to a specific recipient for a specified purpose.

-Expenditures are funds that have been paid out against awards based upon the required earnings process being performed.

-Unexpended Awards Balance is the total award commitments less the expenditures made against that award to date.

-Multi Program designation is used as an accounting mechanism for projects that have multiple program components within them.

Audit Scope, Objectives, and Methodology

The scope of our audit was to examine various administrative and operational activities of MTC during the period July 1, 2004 to September 30, 2006. Our objectives were to determine the efficiency and effectiveness of MTC's operations, including its internal controls over revenues and expenditures; analyze the internal controls over receipts and expenditures of the Massachusetts Renewable Energy Trust and the John Adams Innovation Institute; assess MTC's compliance with its enabling legislation, Chapter 40J and Chapter 25, Section 20, of the General Laws; and determine whether MTC was properly administering its contracts and grants.

Our audit was conducted in accordance with generally accepted government audit standards for performance audits and, accordingly, included such audit tests and procedures as we considered necessary.

To meet our objectives, our review procedures consisted of the following:

- A determination of whether MTC had implemented effective management controls, including policies and procedures, to ensure that resource usage is efficient and consistent with laws and regulations.
- A study and evaluation of the management controls and the flow of transactions through the MTC administrative and accounting systems. Because MTC uses a private accounting firm to perform financial and compliance audits of its financial statements, our audit included a review of the accounting firm's work papers and reports.

- An examination of selected MTC transactions pertaining to revenues, expenditures, payroll, equipment, and consultant payments to evaluate their completeness, reasonableness, and compliance with applicable laws and regulations.
- Review of the Green Building Program within the Massachusetts Renewable Energy Trust to determine the amount and extent of grants awarded to local school projects.
- An assessment of MTC's administrative procedures used to monitor the receipts and expenditures of the Massachusetts Renewable Energy Trust and the JAIL.
- Interviews with selected MTC officials and personnel.
- A study and evaluation of the development and award process of financial awards presented from the Massachusetts Renewable Energy Trust and the JAIL.
- On-site visits to validate the results of an award issued by MTC to Blackstone Valley Regional Vocational Technical High School.

Based upon our review, research, and interviews, we have determined that MTC has maintained its accounting records in accordance with prescribed requirements; maintained an internal control structure that is suitably designed and implemented to adhere to the control objectives; and complied with applicable laws, rules, and regulations for those areas reviewed for the 27-month audit period ended September 30, 2006.