

## ***Pioneer Valley Renewable Energy Strategic Plan***

### ***I. Summary***

The Pioneer Valley Planning Commission (PVPC) proposes to collaborate with the newly formed Pioneer Valley Renewable Energy Collaborative (PVREC) and the Franklin Regional Council of Governments (FRCOG) to continue the excellent work launched by Year One funding from the Massachusetts Technology Collaborative to promote renewable energy in the Pioneer Valley. The proposed project will create a renewable energy strategic plan for the Pioneer Valley of Western Massachusetts.

Work products will include:

- Regionally adopted goals for renewable energy generation designed to ensure the region's contribution towards meeting or exceeding the state's renewable portfolio standard
- Regionally adopted goals for energy conservation
- Site selection criteria for each RE technology (micro-hydro, biomass, wind and solar power)
- Strategies to increase the percentage of renewables in the regional energy mix
- A Strategic Plan with detailed assignment of responsibilities and a timeline for implementation of RE projects
- Targeted education efforts to raise local leaders' awareness of their role in promoting renewable energy in the region

In 2003-2004 MTC funded the Pioneer Valley Planning Commission to: 1) research renewable energy activity in the region, 2) identify regulatory barriers to renewable energy and 3) develop some models to overcome identified barriers. In the course of completing this work, PVPC unearthed the need for a strategic plan for RE in the Valley. There are many reasons why a strategic RE plan would be useful, two of the most compelling are:

1. By MTC's own estimates, the Pioneer Valley is home to 1,500 RE entrepreneurs. This constitutes a 'cluster' in economic development terms, and this cluster could be driving the region's economic development. And yet, it is not, and there is no mention of renewable energy technology in the Commonwealth of Massachusetts cluster-based economic development plan, nor is there mention in the region's about-to-be-released economic development plan—the Plan for Progress. The FRCOG does include this emerging cluster in their Comprehensive Economic Development Strategy in recognition of several key businesses and organizations in the Franklin County region. And Congressman Olver has identified renewable energy as one of six key economic engines for the Northern Tier of the Commonwealth. The support of this sector from an economic development standpoint would be greatly enhanced by a Strategic Plan for the entire Pioneer Valley.
2. Not only is there a plethora of RE entrepreneurial activity, but there is also great potential for significant megawatts of RE to be generated in the Valley. There are over 50 possible sites for wind turbines, as noted on wind maps publicized by the Massachusetts Technology Collaborative, an extremely advanced photovoltaic industry, and there are also hundreds of saw mills and thousands of acres of forest and farmland which could drive a powerful biomass energy initiative.

Because there are so many Renewable Energy activities happening in the Valley which are not being coordinated, opportunities are being lost. We need a strategic plan for renewable energy.

## **II. Project Description and Partners**

### **A. The Project**

#### Overall Objectives

We have two primary process objectives to be achieved through this project:

- Assign sub-regional goals for MW generation of RE in the Pioneer Valley
- Coordinate RE efforts in the Pioneer Valley to maximize economic benefits to the region

#### **Our three primary outcome objectives include:**

- Generate renewable energy in the Pioneer Valley—specifically, support regional efforts to attain a realistic portion of Massachusetts’s renewable portfolio standard goals.
- Conserve energy in the Pioneer Valley
- Activate Pioneer Valley opinion leaders/decision makers about the benefits of distributed generation, including:
  - direct benefits when used in government buildings;
  - improving the environment;
  - economic development;
  - electrical system reliability for constituents;
  - protecting constituents from high electricity prices; and
  - disaster relief support.

Over the course of two years we will follow a traditional strategic planning process, with a few twists. Because we have the Massachusetts RPS of 750 MW of RE by 2010, we do not need to invest a lot of time articulating our mission—instead we need to determine an equitable share of the 750 MW for the Pioneer Valley and we need to capture municipal decision-makers interest in committing to a portion of our region’s RE MW responsibility. We do recognize that opposition to RE has been emerging across the Commonwealth—driven in large part by aesthetic and environmental concerns about wind turbines off the Cape and in the Berkshires. So we expect to spend some time getting people on board to support RE. Once we have a sense of our mission and our vision of RE for the Valley, we will move on with an asset-based assessment of our region’s opportunities. Finally, having determined what we want and identified the means we have at our disposal to ‘get there’ we will map out specific assignments at local and regional levels to assure we (the region) reach our goals. Because this proposed project is as far from a stand alone project as possible we will emphasize integrating into existing planning processes (local, regional, and state) as well as facilitating planned RE projects where possible versus initiating anything new.

We will start our work building on the products of our Year One funding from MTC, updating background research and our review of ongoing RE efforts, projects and the state of the art of the RE field in the Pioneer Valley. Then we will describe all the RE work planned or underway in the Valley. Thanks in large part to MTC there is a significant amount of new RE activity in the last year. Concurrently, our Consultant team will be working to articulate site selection criteria for each RE technology. We will create a GIS product displaying what we learned on the ground so we can identify gaps and best locations for additional MW of RE. [months 1-6]

Deliverable: 1) Technology specific site selection criteria developed by RE consultants to identify potential locations and projects for each RE technology. 2) GIS mapping and analysis using existing datalayers and site selection criteria developed to identify potential locations and projects. 3) Written report and GIS products and accompanying narratives of proposed projects accompanied by technology specific site selection criteria.

Once we know who is doing what, what is planned in the Valley, and what we need to site the various RE technologies, we will work with our Consultants and Advisers to identify the essential people who must be involved creating the Valley's RE strategic plan and build productive working relationships with them. [months 4-9] Possible participants include:

- elected officials
- municipal government staff including but not limited to: planners (professional and volunteer), department of public works staff, utility staff, building inspectors, school officials
- entrepreneurs
- advocates
- educators
- farmers
- opinion leaders
- consumers
- emergency government personnel
- environmentalists

Deliverables: 1) Twelve education/municipal outreach sessions (8 in PVPC region; 4 in FRCOG region) for municipal and regional officials to learn about RE and their benefits and the results of the GIS mapping and analysis of potential sites and projects and 2) Presentation materials prepared by RE Consultants, PVPC and FRCOG which can be utilized by other regions in the State.

Once we know where we are going and who is coming along, we will facilitate 'conversations,' and educational sessions as needed, among and between stakeholders working to complete an asset-based renewable energy development assessment. At the same time our Consultant team and Advisors will stay abreast of planned RE projects in the region and do whatever is possible to move projects ahead. [months 9-18]

Finally, we will work with all parties to take make a commitment to RE generation in the Valley. Municipal governments will have the most important role to play as they can commit to hosting RE power facilities in their communities, converting municipally owned buildings into 'green buildings' and/or building only 'green buildings', and facilitating use of RE by residential and commercial land developers by amending their zoning and sub-division regulations. Individual consumers have an important role to play as well—as their investment in 'green power' tells financial institutions that there will be a market for the RE power to be generated by the RE facilities seeking their investments. Of course RE entrepreneurs are essential as it is they who take the financial risks to bring RE products to the market. [months 19-24]

Deliverables: 1) Six focus group meetings (4 in PVPC region; 2 in FRCOG region), notes and other documentation from meetings and educational sessions/events, status report on RE projects with before/after photos, lessons learned etc. and 2) PVPC and FRCOG will collaborate to prepare a Strategic Plan for the region which incorporates the results of the education sessions, municipal and business outreach and the technology specific site selection criteria. The Strategic Plan for RE will be a 10 year plan including GIS products that shows the types and potential locations for RE facilities, potential buildings that can be 'greened,' where potential green buildings can be constructed, the relative RE-friendliness of the regions communities and suggestions for modifying

land use regulations to make the communities more RE friendly over time. The Strategic Plan will include regionally adopted goals for renewable energy generation designed to ensure the region's contribution toward meeting the state's renewable portfolio standard goals in order to increase the percentage of renewables in regional energy mix. The plan will identify specific strategies and assign responsibilities and a desired timeline for implementation.

#### Relationship of the project to the region

This project has regional, statewide, and national significance. Based on preliminary research we have found only scant evidence of regional plans to promote renewable energy. The majority of existing plans are developed by utility companies, and while private sector efforts are commendable, they have not secured commitments from local government to act. A regional plan developed by municipal officials and regional planners in conjunction with other local officials, entrepreneurs, activists, and area utilities will focus attention on and stimulate public action. This plan will serve as a model to the other 11 Regional Planning Agencies in Massachusetts and will help the state to achieve the RPS goals of 750 MW of renewable energy by 2010. The products developed to implement the plan will serve as models for the rest of the Commonwealth and will be available to other regions and communities. The project will serve the region and enhance existing efforts.

#### Relationship of the project to existing processes and information

Too often, individuals and organizations with good intentions fail to research others' efforts and coordinate limited resources. There is a significant amount of renewable energy-related activity already underway in the Pioneer Valley region of western Massachusetts, as well as significant potential to generate renewable energy while also conserving existing resources. The Massachusetts Technology Collaborative funded the PVPC in 2003-4 to begin the process of documenting this RE activity. This plan will harness the region's wealth of existing activity, capture our potential and launch the Pioneer Valley into the forefront of renewable energy activity in the state. In particular, we will capitalize on the estimated 1,500 workers in the renewable energy business cluster about whom MTC staff met with WMECO staff in January, 2004.

The PVPC and FRCOG develop regional transportation, economic development and land use plans. RE should be integrated into all of these plans. PVPC and FRCOG have recently been awarded grants to develop natural hazards plans for their regions and are in the midst of conversations with the Department of Homeland Security to develop disaster plans for the region. It is very timely that these plans will be developed at the same time as we are creating this strategic plan for RE. Alternative energy sources are essential to disaster planning.

#### Role of the project in relation to proposed renewable energy facilities

This project will facilitate siting of renewable energy facilities in the region and advance proposed facilities. It expands development and adoption of local regulations necessary for municipalities to site renewable energy facilities, and it educates the decision makers about the need for, benefits of, and process for developing renewable energy facilities. Finally it ensures ongoing support for renewable energy in the Pioneer Valley. Project staff and volunteers will work with community advocates and developers on proposed projects in Chester, Russell, Chesterfield, and wherever new RE projects are developed.

#### The project's ability to obtain the end product

This project will most certainly produce a regional plan for renewable energy. It will definitely document barriers to renewable energy and produce specific suggestions for overcoming

identified barriers. The project will generate an education campaign and produce GIS maps siting planned, proposed and recommended renewable energy facilities. In addition we believe that the planning process and accompanying products will generate new megawatts of renewable energy. PVPC and FRCOG have 40 years of success planning for the region. We have facilitated numerous regional plans and we lead the region in promoting economic development.

### Replicable components

Both PVPC and FRCOG have established themselves as regional planning agencies committed to replicable products. All the products developed as part of this project will be replicable—including the plan itself.

## ***B. Applicant and Partners***

### Applicant:

This proposal is being submitted by the Pioneer Valley Planning Commission and the Franklin Regional Council of Governments, and it includes work that will be sub-contracted to a number of consultants who are also project partners. The proposal is being submitted to the MTC and to a consortium of area utilities for funding consideration. We hope to receive partial funding from both groups. In addition to sub-contracted partners, staff from the consulting businesses will continue to volunteer on the Pioneer Valley Renewable Energy Collaborative along with area renewable energy advocates, planners and academics.

The Pioneer Valley Planning Commission (PVPC) is the regional planning agency for the 43 cities and towns that compose the Pioneer Valley Region in mid-western Massachusetts' Pioneer Valley. PVPC performs myriad services—from economic development planning and promotion to writing grant proposals and facilitating both regional and community plans—in a wide range of planning areas: economic development, transportation and transit, environment and land use, community development and historic preservation. We are also the region's Geographic Information System (GIS) center and the regional center for census and other standardized data. PVPC promotes regional collaboration among its member communities and is the primary agency responsible for increasing communication, cooperation, and coordination among all levels of government as well as private business and civic sectors in order to benefit the entire Pioneer Valley region and to improve its residents' quality of life. Since its formation in 1962 PVPC has been the region's primary consensus-building force. June 2004 marked the completion of a project to inventory both renewable energy resources and barriers in the Pioneer Valley and implement local zoning reform to facilitate renewable energy in at least one community. Catherine Miller, M.S., Senior Planner, Environment and Land Use section will be the lead investigator for PVPC on this project. Denis Superczynski, AICP, will lead the regulatory reform work. Catherine Miller graduated with honors from Brown University and has two Master's degrees, one in Social Work and one in Urban and Regional Planning from the University of Wisconsin-Madison. She has worked for state, federal and local government, not for profit organizations and spent three years working for the United States Peace Corps in Cameroon, Central Africa. Mr. Superczynski has a Bachelor's degree in Architecture. He has worked as a planner at the state, regional and local level facilitating master plans and zoning reform. Combined, Ms. Miller and Mr. Superczynski have over 40 years experience with state, regional and municipal land use reform, community and economic development and public information and education.

The Franklin Regional Council of Governments is the regional planning agency for the 26 communities located in the upper Connecticut River Valley in mid-western Massachusetts. Bordered on the north by New Hampshire and Vermont, on the west by the Berkshires, and on the east by the central uplands, the region shares major economic, transportation and natural

resource corridors with the greater Pioneer Valley to the south. The most rural area in Massachusetts, the region covers 740 square miles and is populated by approximately 72,000 people. Building upon the strengths of our member communities and their sense of regional identity, the Franklin Regional Council of Governments is a catalyst and resource for the coordination of public policy and service delivery.

Similar to PVPC, the FRCOG provides a variety of services to its communities from planning to engineering. We are also the region's Geographic Information System (GIS) center and the regional center for census and other standardized data. The Franklin Regional Council of Governments is dedicated to providing a variety of services and products to our member communities and their residents. The Franklin Regional Council of Governments integrates regional and local planning, human services advocacy and coordination, and municipal services to secure our regional goals of: balancing economic development with the protection of our natural and cultural resources, and our rural character and heritage; ensuring the most economical creation and delivery of public services in a rural region comprising many political subdivisions, and; building healthier communities by developing and connecting broad-based coalitions to raise the level of expectations for community achievement FRCOG promotes regional collaboration among its member communities and is the primary agency responsible for increasing communication, cooperation, and coordination among all levels of government as well as private business and civic sectors in order to benefit the region and to improve its residents' quality of life.

Peggy Sloan, Director of Planning and Development, Bill Labich Land Use Program Manager, and Jessica Atwood, Economic development Planner will be the staff assigned to this project. Peggy Sloan, Director of Planning & Development, has been with the FRCOG for eleven years and has worked extensively on economic development issues at the regional and local level. She is responsible for the FRCOG's Brownfields program sponsored by the EPA which has already resulted in the clean-up of two properties. These sites may be future potential location for renewable energy projects (*brownfields to brightfields*). Ms. Sloan graduated cum laude from Smith College where she majored in economics, with a specialization in energy economics. Her undergraduate education was followed by six years of work in commercial and investment banking where she specialized in project financing for large-scale natural resource and infrastructure projects including energy projects such as cogeneration facilities. She returned to graduate school where she obtained Masters Degrees in Regional Planning and Landscape Architecture. Ms. Sloan has 14 years of public education and outreach experience and works extensively with municipal officials on zoning and subdivision regulations. Bill Labich, Land Use Program Manager has been with the FRCOG for over five years and has an extensive background in community development planning, forestry, and public education. Bill is the Project Manager for numerous community development and natural resource grants and has a Masters Degree in Regional Planning. Jessica Atwood has been with the FRCOG for over seven years and has been involved with grant administration, data analysis, transportation planning and economic development planning activities. In her capacity as Economic Development Planner, she has in depth knowledge and experience with the regional economic development challenges and opportunities available in the greater Franklin County region. Ms. Atwood is the staffperson primarily responsible for preparing the Comprehensive Economic Development Strategy for the region which includes the emerging renewable energy cluster. Educated at the University of Massachusetts at Amherst, Ms. Atwood has a Bachelor of Arts Degree in Geography and Communications and a Master's Degree from the Master's of Business Administration Professional Program.

#### Partners:

The content partner on this project is the Pioneer Valley Renewable Energy Collaborative (PVREC). The funding partner is a consortium of area utilities.

PVREC members include:

- Bart Bales, Bales Energy Associates
- Dwayne Breger- Team Leader, Renewable Energy and Climate Change, Massachusetts Division of Energy Resources
- Don Campbell-solar energy consultant
- Keith Davis-mechanical engineer
- John Fable-entrepreneur
- Wayne Feiden, M.S. AICP-City of Northampton Planning and Community Development;
- Seth Fischer-Northampton Energy Committee and ISO New England
- Teresa Jones-Greenfield Community College, Math, Science, Business & Information Technology Division
- Ann-Renee Larouche, renewable energy marketing consultant
- Paul Like, Sustainable Step New England
- Peggy MacLeod, Marketing Director- Center for Ecological Technology
- John Papi-solid waste management professional
- Robert Rizzo, Mount Wachusett Community College project manager for the National Renewable Energy Laboratory, the USDA Forest Service; Forest Products Laboratory, and Community Power Corporation; and the Small Modular Biomass Gasification Research and Demonstration project
- Sally Wright, M.S. Mechanical Engineering, UMASS Renewable Energy Research Laboratory (RERL) Center for Energy Efficiency and Renewable Energy (CEERE)
- Catherine Miller, Pioneer Valley Planning Commission--staff

### ***WESTERN MASSACHUSETTS ELECTRIC UTILITIES AND GENERATORS***

#### **Investor-owned utilities.**

Western Massachusetts Electric Company, West Springfield, MA 01089  
Edgar Allejandro-small grants program manager

Massachusetts Electric, 55 Bearfoot Rd, Northborough, MA 01532  
John Cochrane - Senior Vice President, Chief Financial Officer and Treasurer, (508) 860-6000

Bay State Gas, 2025 Roosevelt Ave, Springfield, MA 01104  
(413) 781-9200 Northampton (413) 584-1088

#### **Municipal Utilities**

Holyoke Gas and Electric, 99 Suffolk Street, Holyoke, MA 01040-4457  
Main Office (413) 536-9300 FAX - Business Office (413) 536-9315

Westfield Municipal Gas & Electric Light Dept, 100 Elm Street, P.O. Box 990, Westfield,  
MA  
01086  
Phone (413) 572-0100 Fax (413) 572-0104

Chicopee Electric Light, 725 Front Street, PO Box 405, Chicopee, MA 01021-0405  
ph: 413.598.8311

MA Municipal Wholesale Electric Company, Moody Street, P.O. Box 426 , Ludlow, MA 01056  
Phone (413) 589-0141 Fax (413) 547-1585 General contact: David Tuohey, tuohey@mmwec.org

Chester Municipal Electric Light Department, 2 Town Rd, Chester, MA 01011 or, 15 Middlefield Rd,  
Chester, MA 01011  
(413) 598-7811

Russell Municipal Electric, (413) 862-4045

### ***Additional Partners:***

The Plan for Progress Trustees is the region's economic development planning advisory board. Co-chaired by Paul Tangredi of Western Massachusetts Electric Company and Tim Brennan, Executive Director of PVPC, the Trustees are responsible for implementing the region's economic development plan, *The Plan for Progress*.

Pioneer Valley chapter-Business Alliance for Local Living Economy  
A network of local business owners whose mission is to create, strengthen and connect local businesses, advocates and consumers dedicated to building a strong local living economy.

### ***III. Technical Proposal***

Work Plan and Schedule

This project is planned to take two years.

**Year One:** PVPC, FRCOG and PVREC reach out to stakeholders and involve them in the process.

**Year Two:** PVPC, FRCOG and PVREC facilitate the plan and refine region-specific technologies.

There are 8 tasks described in the detailed budget, plus administration/evaluation and replication.

Task 1 Research/Literature Review

Task 2 Technical Assessment of Renewable Energy Technologies

Task 3 Overlay Technology with Geography

Task 4 Stakeholder Analysis and Identification

Task 5 Stakeholder Outreach and Relationship Building

Task 6 Asset-based RE development assessment, identification and analysis—Issues Clarification

Task 7 Taking Ownership for the Pioneer Valley's portion of Massachusetts' Renewable Energy goals

Task 8 Preparing the Plan

### ***Deliverables***

- Technical assessment of RE technologies in the Pioneer Valley, a written report on existing RE activity in the region, and a GIS product with images and accompanying narratives of projects and proposed projects
- Annotated resource list of stakeholders with all contact information and notes from preliminary interviews and targeted education campaign for regional leaders with notes from sessions and all materials

- Series of focus group meetings, notes and other documentation from meetings, status report on RE projects with before/after photos, lessons learned, issues raised, priorities identified, etc.
- Strategic plan for RE –10 year plan with GIS version that shows how and where RE facilities can be located, where and how buildings can be ‘greened’ or where and how green buildings can be constructed, the relative RE-friendliness of the regions communities and how and when land use regulations can be amended to make the community more RE friendly over time
- Regionally adopted goals for renewable energy generation designed to ensure the region’s contribution toward meeting the state’s renewable portfolio standard goals
- Increased percentage of renewables in regional energy mix
- Action Plan with detailed assignment of responsibilities and a timeline for implementation

### ***Management and Staffing/Qualifications***

Staff: Catherine Miller, MS, Senior Planner/Section Manager and Denis Superczynski, MS AICP Senior Planner in PVPC’s Land Use section will co-manage this project for PVPC. Ms. Miller is responsible for the Commission’s sustainability initiatives. She has 20 years experience facilitating grassroots community development at the local, regional, state and federal level. Mr. Superczynski has 14 years experience with municipal zoning and community design. Bill Labich, Land Use Program Manager and Jessica Atwood, Economic Development Planner will co-manage this project for FRCOG. Combined they have over twenty years of experience in planning, economic development and public education.

### Consultants:

Sustainable Step New England (SSNE) recently completed work for Connecticut’s Clean Energy Fund, where SSNE brought together 27 leading environmental organizations’ energy experts to explore their generally successful opposition to siting biomass power generation facilities in the NE. The results included: (1) a catalog of research, information needed and actions to be taken to address participants’ concerns and enlist their support, (2) strategies for NGO and public education, and (3) an outline and cost estimates for a scale-able, multi-phase environmental NGO/public education initiative designed to create long term support for renewable energy generation in general, and reliable local grown power in particular. Contact: Paul Lipke, Wood Scientist, Director of Programs and Training.

Since 1976, the non-profit Center for Ecological Technology (CET) has offered environmental consultation to businesses, schools and individuals with the goal of researching, developing, demonstrating and promoting those technologies which have the least disruptive impact on natural ecology. CET’s staff houses expertise in municipal and business program development and implementation, organizational development and advocacy, and education on technical matters. Contact: Peggy MacLeod, Marketing Director.

Bart Bales, Bales Energy Associates—Bales Energy Associates is a consulting firm specializing in building-related energy analysis, management, research, and engineering since 1990. Bales Energy Associates is committed to personalized professional service and to quality energy analysis giving rise to effective energy conservation efforts. Services include: green advising and collaboration; solar and renewable energy evaluations and project development; fuel cell feasibility studies; technical energy audits, studies, and preliminary design; performance and feasibility analyses for on-site cogeneration applications; building energy modeling; ongoing energy management for commercial and institutional clients; software and seminar development for energy analysis; operations, maintenance, and energy management consulting for improved

efficiency and reduced cost; strategic energy planning; effective meeting facilitation services for productive strategic planning.

The Northeast Sustainable Energy Association (NESEA) is the nation's leading regional membership organization focused on promoting the understanding, development, and adoption of energy conservation and non-polluting, renewable energy technologies. For more than thirty years, NESEA has facilitated and enhanced a network of professionals, practitioners, and other citizens in pursuit of responsible energy use. Our programs and activities focus on the northeastern United States, from Washington, DC to Maine.

John Fabel—Renewable Energy Advocate/Marketing Entrepreneur. John has worked as a regional planner and taught at Hampshire College.

Don Campbell—Solar Energy Consultant

### ***Advisors:***

The Forest and Wood Products Institute (FWP) at Mt. Wachusett Community College is lead by Robert Rizzo, primary investigator for a National Science Foundation Grant that will develop an Advanced Technological Education project focused on renewable biomass energy technologies and policies. Mr. Rizzo has served as the College's project manager for the National Renewable Energy Laboratory, the USDA Forest Service; Forest Products Laboratory, and Community Power Corporation; and the Small Modular Biomass Gasification Research and Demonstration project that was to be installed at Mount Wachusett Community College. He is currently working with the USDA Forest Service, Forest Products Laboratory on biomass feedstock densification for gasification technologies, and is coordinating the efforts of the eleven northeast states to encourage state agencies to procure biobased fuels and products under grant funding from the US Department of Energy. He is a member of the northeast Regional Biomass Program Steering Committee and is an active member of the Massachusetts Biomass Energy Working Group. He is also the project manager for the College's newly installed biomass hydronic heating system, and will serve as the project coordinator for the College's new child care facility which will be a green certified building utilizing a Community Power Corporation 15 KwH combined heat and power downdraft biomass gasifier. This project is in the architectural design stage with construction anticipated in late 2004, early 2005. Mr. Rizzo has been employed in the forest products industry since 1976 and joined the team at the FWP in 1997. He is a licensed Massachusetts Forester and he is also a nationally Certified Forester. Mr. Rizzo has delivered numerous national and regional presentations on biomass energy including Bioenergy 2002. He has also published many articles and white papers on forest products utilization and biomass energy.

The Renewable Energy Research Laboratory (RERL), a research program in UMass Amherst's Mechanical and Industrial Engineering Department, focuses on renewable energy systems; with UMass' Center for Energy Efficiency and Renewable Energy (CEERE), RERL serves as a DOE Combined Heat and Power (CHP) site. Sally Wright (M.S. Mechanical Engineering), Research Fellow and staff engineer, is involved in various aspects of wind power, including technical support to Massachusetts communities, statewide wind resource assessment, permitting, and assessing feasibility for offshore, inland and island sites in Massachusetts. Ms. Wright has over ten years of experience in power engineering. Before coming to RERL, she worked in industrial energy conservation, specifically steam turbine cogeneration and combined heat and power. There she specialized in industrial power generation equipment, controls design, power system integration, distributed power & interconnection, and project management.

Dwayne Breger is the Manager of the Renewable Energy and Climate Change Group at the Massachusetts Division of Energy Resources. His group implements the Massachusetts Renewable Energy Portfolio Standard and participates in the Northeast Regional Greenhouse Gas Initiative. He serves on the steering committee of the Northeast Regional Biomass Program, and on the Board of Directors for the non-profit Biomass Energy Resource Center. Prior to this position, he worked on the faculty of Lafayette College and as a research associate at UMass Amherst. At Lafayette College, he established the first dedicated energy crop site trial in Pennsylvania, using *salix* (willows) in association with the SUNY- College of Environmental Science and Forestry. He holds BS, MS, and Ph.D. degrees from Swarthmore College, MIT, and UMass Amherst, respectively.

### ***References***

Ann Hamilton, Franklin County Chamber of Commerce  
Paul Tangredi, Western Massachusetts Electric Company  
Clare Higgins, Mayor-city of Northampton