# Community Consultation Document Watertown Renewable Power 30 MW Biomass Generating Project Watertown, Connecticut





# August 2007

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Cover Page photo – 18 MW biomass project in Chateaugay, NY developed and constructed by members of Tamarack Energy's experienced staff

## 1. Project Overview

Tamarack Energy, Inc. will develop, construct, own and operate a 30 megawatt ("MW") biomass power plant at a 33-acre site in Watertown, Connecticut. The Watertown Renewable Power Facility ("Watertown Facility" or "Watertown Project") is the creative vision of a team of experienced biomass developers and the direct result of diligent site selection, a strategic fuel supply plan, and a long-term energy contract. The Watertown Facility will utilize a state-of-the-art fluidized bed gasification system and steam turbine generator to convert clean wood chips into 30 MW of electricity. The facility will provide clean, renewable power as an alternative to insufficient and outdated fossil fuel power in an area of Connecticut where it is desperately needed.

15 MW of the Watertown Facility's capacity and associated renewable energy attributes will be sold to Connecticut Light & Power ("CL&P") under the terms of a 15-year electricity purchase agreement ("EPA") that resulted from the first round of the Connecticut Clean Energy Fund's Project 100 solicitation. Project 100 is a clean energy program implemented by the Department of Public Utility Control ("DPUC") and the Connecticut Clean Energy Fund ("CCEF") under which 100 MW of new, in-state, renewable energy facilities would qualify to receive long-term contracts with the major public electric utilities. The Watertown Project was one of only three projects selected out of seventeen submittals for Project 100, Round 1, and is the only project to have received a signed EPA. The balance of the plant power output will be sold directly to the New England ISO ("ISO-NE") or via separate, long-term contracts.

The Watertown site was selected after an exhaustive review of over thirty potential locations evaluated on the basis of its proximity to fuel supply, nearby transmission lines, suitable truck access routes, surrounding land use, environmental considerations, and community receptivity. The project will provide fuel diversity for Connecticut's consumers while reducing greenhouse gas emissions, generating lower emissions than most of Connecticut's existing power plants and stimulating the state's forest industry. The use of clean wood fuel provides a means by which the State's public and private foresters can improve their forest management practices while reducing the burdens on local landfills, thereby further reducing greenhouse gas emissions (in the form of methane), which are generated when wood decays.

The Watertown Facility will provide significant economic benefits to the community. The project will create hundreds of construction jobs and at least 25 permanent positions, many of which can be filled by the local workforce. In addition, the regional wood supply industry will be stimulated, creating approximately 100 additional jobs and boasting the local economy. The Watertown Project will increase the tax base for the town of Watertown, providing significant revenue for schools and basic government services, without adding to the services burden of those same entities. As one of the first large-scale renewable energy facilities in Connecticut, the project will provide the community an opportunity to embrace renewable energy and set an example for the rest of the state to follow.

# 2. Siting Council Process

As an electric generating facility, the Watertown Project must comply with the Connecticut Public Utility Environmental Standards Act, Section 16-50g through 16-50aa of Connecticut General Statutes ("CGS") and Sections 16-50j-1 through 16-50z-4 of the Regulations of Connecticut State Agencies. These regulations outline the jurisdiction of the Connecticut Siting Council ("Siting Council") in evaluating the requests for and granting or denying a Certificate of Environmental Compatibility and Public Need ("Certificate") prior to beginning construction of an electric generating facility.

The Siting Council procedures require the Applicant to demonstrate that the development and operation of the facility will have no significant adverse impact on the environment and ecology of the state and that there is a need for the facility in Connecticut. Based on the information provided, the Siting Council will determine the project's environmental compatibility and public need. The Watertown Project intends to file a petition for a declaratory ruling from the Siting Council in November 2007.

This community consultation document has been assembled in accordance with Siting Council's pre-application process (CGS 16-50*l*(e)) which requires the Applicant to "provide the chief elected official (of the host community) with any technical reports concerning the <u>public need</u>, the <u>site selection</u> process and the <u>environmental effects</u> of the proposed facility." The submittal of this document initiates a 60-day period during which members of the Watertown community may review the proposed facility and make recommendations concerning its construction and operation. All questions (and answers) and recommendations from the community review period will be presented with the Siting Council application.

A community workshop for the further dissemination of information about the Watertown Project will be conducted during the 60-day comment period. A public notice with the date, time, and location of this meeting will be issued separately.

#### 3. Technology Description

The Watertown Renewable Power Facility will be a nominal 30 MW low emission advanced biomass energy conversion facility. The Watertown Project will utilize a fluidized bed gasification process to create high pressure steam which will in turn power a steam turbine generator. Fluidized bed technology is a mature process and provides the capability to combust fuels with varying moisture content while producing lower emissions than conventional stoker fired boilers.

Fluidized bed technology utilizes a stream of hot air forced upward through the bed of free-flowing wood chips and sand materials. The temperatures and air velocities in the gasifier are high enough that the solid particles are widely separated and circulate freely, creating a "fluidized-bed" that looks like a boiling liquid and has the physical properties of a fluid. This process provides longer residence time for carbon utilization, results in extremely thorough conversion, and provides very efficient heat transfer to the furnace

walls. The controlling parameters in the fluidized bed gasification process are temperature, residence time, bed composition and turbulence.

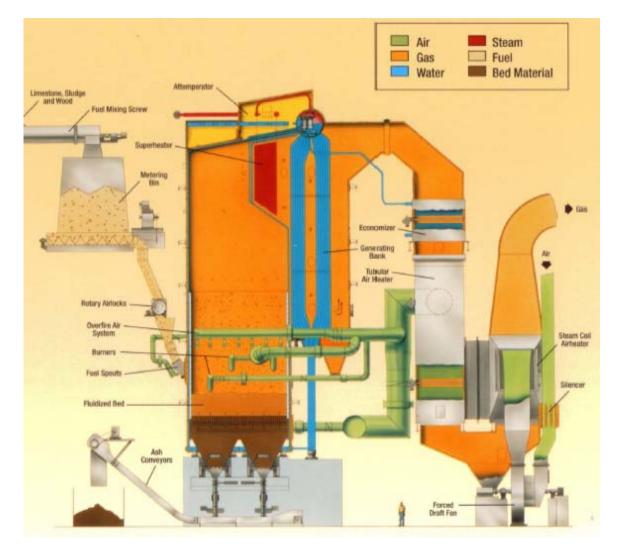


Figure 1 – Typical Fluidized Bed Gasifier

The steam produced in the fluidized bed gasification system will be used to power a conventional steam turbine generator capable of producing approximately 30 MW of electrical energy. A portion of the plant output will be used to satisfy internal plant loads and the balance will be exported to the regional power grid through a short interconnection to an existing 115 kV transmission line.

The plant is being designed with a state-of-the-art level of automation and will be equipped with a distributed control system ("DCS"). This system will allow the plant operator to monitor and control virtually all power plant and fuel yard systems from a station in the control room. Built-in redundancy and fail safe procedures are essential to the safe and efficient operation of the facility.

## 4. Project Schedule

A project schedule is outlined in the table below. Site control has been established, an electricity purchase agreement has been executed, and interconnection studies and facility design activities are underway. As described previously, the submittal of this community consultation document initiates a 60-day review period prior to submittal of the project's Siting Council petition in October.

Initial design efforts will support the state and local permit processes as well as engineering and financial package preparation. It is anticipated that permitting activities will continue into the second quarter of 2008. Construction activities will begin after receipt of an air permit and a Siting Council ruling in the third quarter of 2008 and will take approximately 18 months to complete. The commissioning and start-up of the biomass power facility will occur in the first half of 2010.

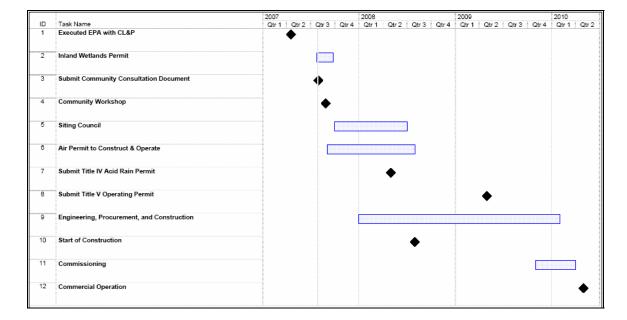


Figure 2 - Project Schedule

#### 5. Public Need

As the first project selected for the CCEF Project 100 program, the Watertown Project is an integral part of Connecticut's push for renewable energy. The CCEF was established to "promote investment in renewable energy sources in accordance with a comprehensive plan developed by it to foster the growth, development and commercialization of renewable energy sources, related enterprises and stimulate demand for renewable energy and deployment of renewable energy sources which serve end use customers in this state" (CGS 16-245n(c)). The Project 100 program is one avenue by which the CCEF is executing this legislative mission. By providing clean, renewable power, the Watertown Facility will be meeting the public's need for reliable, consistently priced, and homegrown energy. Projects such as Watertown Renewable Power are critical to controlling rising energy costs, lessening the public's reliance on fossil fuel power generation, and

slowing the effects of global warming at a local level. In addition, the Watertown Project will provide significant economic benefits to the community, including hundreds of jobs and significant tax revenue.

#### 6. Site Selection

In selecting a suitable site for the project, Tamarack Energy evaluated properties located throughout the state of Connecticut. A set of site evaluation criteria were developed to take into account such issues as transportation access, transmission system access, availability of utilities, surrounding land use, and community receptivity. The following list of 10 prospective sites was selected from nearly 30 that were initially considered.

Figure 3 – Prospective Sites

Town	Location	Transmission Access	Highway Access	Land Use	Nearby Residential	Comment
Bloomfield	Dudleytown Road	Good	Fair	Industrial	Yes	Too close to residential properties
Enfield	Rainbow Road	Fair	Poor	Agriculture	Yes	Traffic concerns
Franklin	Route 32	Good	Good	Commercial	Yes	Small site with potential wetlands issues
Mansfield	UCONN Depot Campus	Fair	Fair	Brown Field	Institutional	UCONN has other plans for site
Hartford	MDC Property	Good	Good	Industrial	No	MDC has other use planned
Middletown	Boardman Lane	Good	Good	Commercial	Yes	Near by residential properties
Plainfield	Tarbox Road	Excellent	Excellent	Industrial	Some	Owner anticipated another use
Southington	Lazy Lane	Good	Fair	Commercial	Some	Access through heavily developed commercial area
Watertown	Echo Lake Road	Excellent	Excellent	Heavy Industrial	No	Preferred Site
Watertown	262 and Route 8	Good	Excellent	Commercial	No	Partially in flood plain - Property sold
Willington	Ruby Road	Poor	Excellent	Industrial	Some	Transmission access questionable

Ultimately, the 33-acre site off Echo Lake Road in Watertown, Connecticut was selected for the Watertown Project. The Zoning Regulations for Watertown classify the site as General Industrial, IG-80. The purpose of the IG-80 district is "to accommodate basic industrial uses and heavy commercial operations incompatible with residential environments and is intended to be less restrictive than the Restricted Industrial Districts." The installation of "public utility building and facilities" is permitted within the General Industrial zones. Site control has been achieved through the execution of a purchase option agreement with the currrent owner. A map of the proposed site is included here for reference.

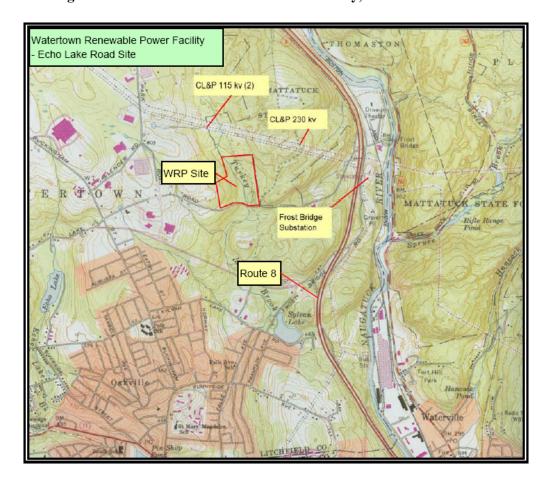


Figure 4 – Watertown Renewable Power Facility, Echo Lake Road Site

#### 7. Environmental Effects

The Watertown Facility will provide a number of local and regional environmental benefits. Air emissions from sulfur dioxide (" $SO_2$ ") and nitrogen oxide (" $NO_x$ ") from biomass facilities are significantly lower compared to traditional fossil fuel plants.  $SO_2$  and  $NO_x$  are major contributors to smog and acid rain. With respect to carbon dioxide (" $CO_2$ "), biomass power generation from sustainable feedstocks is considered a "carbon-neutral" alternative. Trees and plants absorb and store  $CO_2$  during their growth cycle and release  $CO_2$  when they decay on the forest floor or in landfills. In this way, biomass energy facilities such as Watertown Renewable Power do not produce any  $CO_2$  that

would not otherwise be released as part of the natural carbon cycle, making them an important tool in combating global warming.

In addition, biomass power facilities encourage better forest management, which leads to the increased protection of critical wildlife habitats, reduces the impact of invasive species, and provides a useful outlet for dead or dying trees. Power generated from biomass facilities can also productively utilize land-clearing debris which would otherwise be deposited in already-crowded landfills.

The environmental effects of the Watertown Project in a number of key areas are discussed in more detail below.

#### 7.1 Emissions

As a low emission advanced biomass energy conversion facility, the Watertown Facility will utilize state-of-the-art emission control technologies. The low combustion temperature inherent in fluidized bed gasification results in a low level of SO<sub>2</sub> and NO<sub>x</sub> production. The project will employ a Selective Catalyst Reactor ("SCR") for additional NO<sub>x</sub> emissions control, baghouse filters for particulate control, fluidized bed gasification for carbon monoxide ("CO") and volatile organic compound ("VOC") control, and low-sulfur clean wood fuel (with the capability of limestone injection) for SO<sub>2</sub> control.

The project will be required to meet Best Available Control Technology ("BACT") or Lowest Achievable Emission Rates ("LAER") in accordance with US EPA and Connecticut Department of Environmental Protection ("CTDEP") requirements, as applicable. The combination of fluidized bed gasification and biomass fuel will result in significant reductions in particulate, SO<sub>2</sub>, NO<sub>x</sub> and CO<sub>2</sub> emissions compared to fossil fuel combustion power sources. The following figure graphically presents the results of this comparison between the Watertown Renewable Power ("WRP") facility and typical fossil fuel plants in Connecticut.

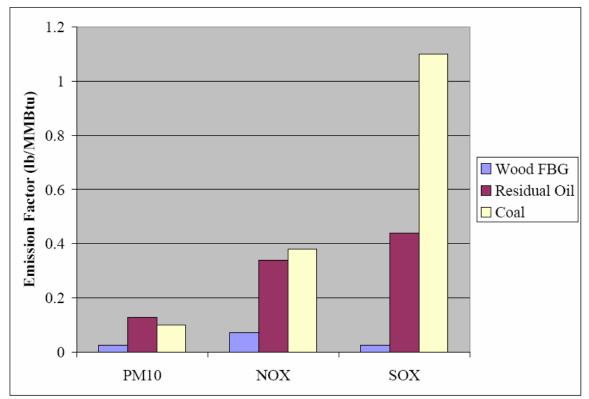


Figure 5 – Emissions Comparison

Source: M.I. Holzman & Associates, LLC

Air emissions modeling and permit preparation are underway by an air permit consultant. Initial permitting efforts will focus on the Air Permit to Construct & Operate issued by CTDEP, which must be obtained prior to start of construction. It is anticipated that this permit application will be submitted in September 2007. The Watertown Facility will be required to obtain a Title V Operating Permit and a Title IV Acid Rain Permit.

#### 7.2 Visual Simulation

The site is bounded on the north and east sides by Mattatuck State Forest lands, on the south side by Echo Lake Road and on the west by a parcel of industrial zoned property. Trees thoroughly screen the view from any residential property. The depressed terrain and surrounding heavy forest will serve to further screen the facility from view from the surrounding commercial facilities.

The primary components of the Watertown Facility include the wood storage pile (50 - 60 feet tall), the wood processing building (40 - 50 feet tall), the boiler building (100 - 120 feet tall), and the exhaust stack (150 - 190 feet tall). Detailed design and air permitting considerations will dictate the exact size and height of these structures. A preliminary visual simulation has been prepared to demonstrate how the facility will look from different points within the Watertown community. Several views from the simulation are included in Appendix A.

#### 7.3 Traffic

Because the fuel for the project will be delivered by tractor trailer trucks, proximity to established truck traffic routes and the avoidance of residential and commercal traffic areas were significant factors in selecting the proposed site. The Echo Lake Road site is approximately one mile from exit 37 off Route 8. The neighboring uses include the Connecticut Resources Recovery Authority regional waste transfer facility, UPS and Federal Express terminals, several scrap yards, and metal manufacturing facilities. There are no residential zones located along Echo Lake Road between Route 8 and the Watertown site. Residential and commercial traffic generally passes from Route 8 to Watertown along Route 262 which runs parallel to and about a mile south of Echo Lake Road, thus bypassing the project site.

Truck deliveries to the site will be limited to the hours of 7:00 a.m. to 7:00 p.m, six days per week (Monday – Saturday) to minimize nighttime traffic and noise. It is expected that 40 to 50 trucks per day will be required to deliver the necessary wood fuel to the Watertown Facility. A detailed traffic study by a seasoned traffic engineer is underway as part of the Siting Council process and includes turning movement counts at impacted intersections, a directional machine count along the site frontage, analysis of sightlines from the sight access point, and modeling of additional traffic due to the facility. A preliminary review indicates that traffic impacts will be minimal.

#### 7.4 Noise

A detailed noise study by an experienced acoustics consultant is underway as part of the Siting Council process and includes a background noise survey, analysis of regulatory noise levels, a review of noise data from representative equipment manufacturers, and modeling of expected noise levels at property boundaries. Noise mitigation measures will be employed if required to comply with regulatory noise levels at property boundaries. Although there are no residences in the vicinity of the project site, Mattatuck State Forest, which borders the site to the north and to the east, is considered residential with respect to noise by the Watertown Zoning Regulations. A variance from this requirement may be requested if the facility cannot achieve the nighttime noise levels at the forest boundary using reasonable noise mitigation measures.

## 7.5 Wetlands

The project site has been laid out to make maximum use of the eastern portion of the 33-acre site, while minimizing impacts upon Turkey Brook and its associated wetlands that occupy the south central portion of the property. The detailed project design will include storm water runoff control features to prevent impacts to the brook and detention impoundments to prevent downstream storm concentrations. A detailed site plan is presented in the attached Appendix B.

A wetlands permit application was submitted to the Watertown Conservation Commission Inland Wetland Agency on July 26, 2007. The current site layout will impact approximately 4000 square feet of wetlands, or approximately one percent of the

total wetlands on the property. All recommendations made by the Commission will be presented to and considered by the Siting Council.

# 7.6 Ecology

A characterization of the ecological resources that may potentially be impacted by the Watertown Facility has been initiated by a well-respected, third-party ecological consultant. Ecological resources will be characterized on the entire 33 acre site and within the 115 kV electrical interconnection routes. The areas to be characterized include wetland and upland plant communities, watercourse habitat, and wildlife. Also, as standard practice, a survey for rare, threatened, and endangered species will be conducted. A review of Natural Diversity Data Base ("NDDB") mapping dated 2006 indicates that no NDDB habitats are located on the site. Separate from this characterization, wetlands boundaries have already been delineated and impacts have already been identified as part of the project's wetland permit application described above.

# 7.7 Wood Fuel Supply

The Watertown Project will purchase and consume approximately 360,000 tons per year of clean wood to produce the 30 MW of power that the plant will be capable of delivering at full load. One of the primary reasons for selecting the Watertown site is the availability of sufficient, low cost wood fuel from local forest management, land conversion, and wood processing operations. All forest related activities will be conducted in compliance with the *Best Management Practices for water quality while harvesting forest products* published by the CTDEP. Wood fiber material including branches, stumps, undesirable and dead or dying trees, transmission line trimmings, and community brush removal will be the project's principal source of wood fuel. As a result of high landfill disposal costs, much of the forest management material generated in southwestern Connecticut, eastern New York and western Massachusetts is being chipped and left to decompose on site or is being shipped out of state at a significant expense to the producer. It is also anticipated that a significant amount of primary mill by-products (clean sawdust or chipped slab wood) and chipped pallets will be available to the facility.

To qualify as a Connecticut "Class I" renewable energy resource, biomass fired facilities must utilize a renewable fuel that is harvested in a sustainable manner and the plant must have a  $NO_x$  emission rate of less than 0.075 lb/mmBtu. The DPUC has determined that the Watertown Facility, if constructed and operated as planned, will qualify as such a resource.

#### 7.8 Water & Sewer

The Watertown Facility will consume approximately 500,000 gallons per day of water to support its steam condenser system, boiler make-up and other domestic uses. It is anticipated that this water will be purchased from the Watertown municipal water system. The municipal water main that currently terminates 1200 feet west of the Echo Lake

Road site will be extended to the property. The Watertown Water & Sewer Authority indicates that sufficient pressure and capacity is available. Fire protection water will be supplied from the same system.

Alternative water supply sources, including withdrawal from the Naugatuck River were considered for the project. This would have necessitated construction of an intake structure in the river, installation of an approximately one mile long pipeline along Echo Lake Road, and construction of a pumping station to accommodate the 500 foot elevation gain between the river and the plant. The costs, both financial and environmental, seem to outweigh any benefit that would be gained in avoiding the use of an established municipal water supply.

Sanitary waste and process wastewater will be discharged to the Watertown sewer system main located along Echo Lake Road. Most of the discharge will be from boiler and cooling tower blow-down.

Storm water runoff will be discharged to Turkey Brook in accordance with an approved storm water discharge plan. The plan will include equipment to prevent wood fuel and spilled oil or chemicals being discharged to Turkey Brook and will incorporate an onsite detention structure to control discharge rates during storm events.

#### 7.9 Interconnection

There are two 115 kV CL&P transmission lines running in the same right-of-way approximately 1000 feet north of the project site. The Watertown Project filed a Large Generator Interconnection Application on December 22, 2006 with ISO-NE to tie into either one of the two transmission lines. Filing of this application triggered a series of transmission system studies by ISO-NE and CL&P to determine that new generation added to the region's transmission system will not adversely impact system reliability or operating characteristics. As part of their system review, ISO-NE and CL&P will identify any transmission system upgrades that may be necessitated by the addition of the Watertown Facility. Because the project is relatively small, and we have identified an interconnection on a relatively robust section of the transmission system, it is not likely that major upgrades will be required.

Once the interconnection studies have been completed, a Large Generator Interconnection Agreement will be executed between CL&P and Watertown Renewable Power and the interconnection facilities will be installed during plant construction. Initial indications from CL&P and their consultant are that the Watertown Facility interconnection will be a simple line tap and that the added system generation will have no adverse impact on the transmission system. The connection of the Watertown Facility to the transmission system will require an approximately 1000 foot long right-of-way through a neighboring parcel.

# 8. About Tamarack Energy, Inc.

Tamarack Energy, Inc. is a renewable energy company focused on the development and operation of biomass-based energy supply and generation facilities. Based in Essex, Connecticut, the company consists of an experienced team of professionals with a track record of developing and constructing more than 2,000 MW of energy projects. Tamarack Energy was founded in 2003 and, in 2005, became an independently operated, wholly-owned subsidiary of Haley & Aldrich, Inc.

Haley & Aldrich provides strategic environmental, engineering and management consulting services from a tradition of specialized capabilities in the geosciences. Headquartered in Boston, with a 475-person staff in 21 offices, the firm serves private and public clients throughout the United States and internationally. The privately-held company is wholly owned and managed by senior professionals actively involved in the practice.

For more information about the Watertown Renewable Power Facility, please contact:

Mark Mirabito, Project Manager Tamarack Energy, Inc. 35 Pratt Street Suite 101 Essex, CT 06426

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# **Appendix A** Visual Simulations

View from Southwesterly Direction



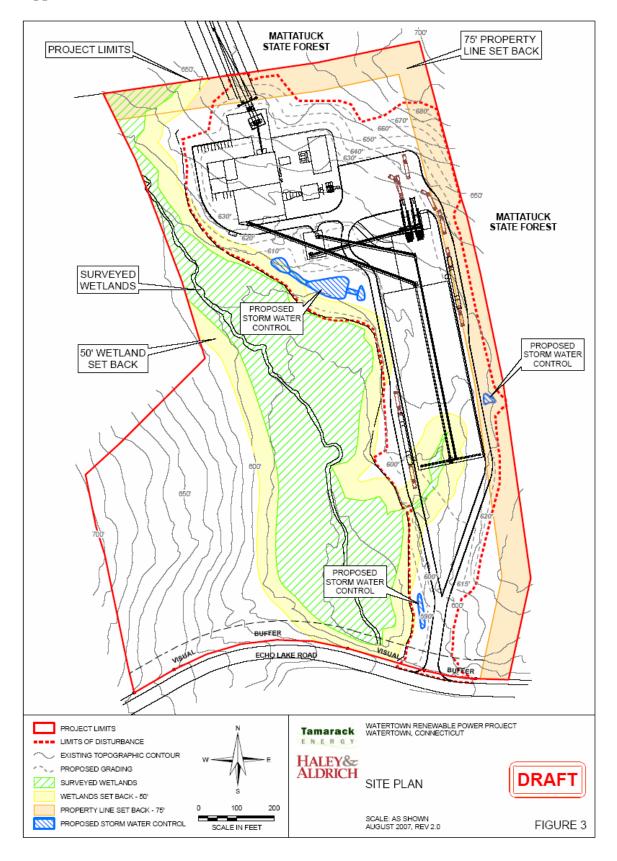
# View from Northeasterly Direction



# View from Echo Lake Road Entrance



# Appendix B Detailed Site Plan



# **Appendix C** Frequently Asked Questions

#### What is biomass?

Biomass describes organic material of recent origin that can be used as a source of energy. It generally includes trees, crops and other plants, as well as agricultural, forest, and mill residues. Another way to think of biomass is as "stored solar energy". In other words, a tree, through photosynthesis, transforms sunlight and nutrients into wood fiber that can be later converted to energy.

#### What is biomass power?

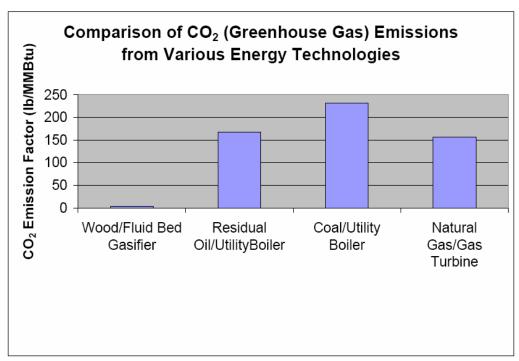
Electricity that is produced as a result of converting trees, plants or other biomass sources into energy is considered biomass power. The Watertown Renewable Power facility will utilize a high efficiency gasifier to produce steam. This steam drives a turbine, which turns a generator that produces electricity. This electricity will be fed into the New England transmission system (also known as the "grid").

# Will the facility produce renewable energy?

Yes. In order to increase the supply of renewable energy in the state, Connecticut has created a Renewable Portfolio Standard ("RPS"), which requires that investor-owned utilities and competitive suppliers procure seven percent of their energy by renewable resources by 2010. Low emission advanced biomass conversion, the technology to be used by Watertown Renewable Power facility, is one of the eligible renewable energy technologies.

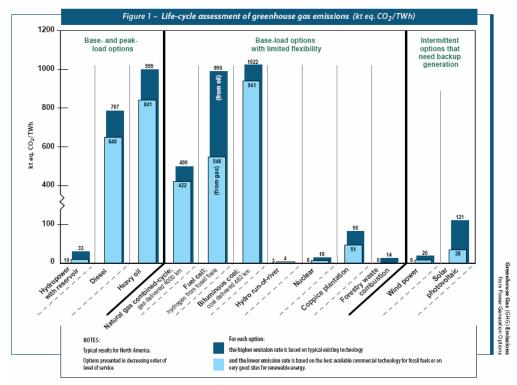
## Does the facility help combat global warming?

Yes, electricity produced from biomass is considered to be essentially carbon neutral and therefore helps to combat global warming. The carbon dioxide ("CO<sub>2</sub>") that the facility will release would have been emitted (in the form of methane) as the plants and trees naturally decompose in the forest or landfills. The burning of conventional fossil fuels such as gasoline, oil, coal, or natural gas results in the release of CO<sub>2</sub> that would otherwise remain trapped deep within the Earth's crust. CO<sub>2</sub> is a greenhouse gas and the principal contributor to global climate change. The following figure compares the CO<sub>2</sub> emissions from a biomass gasifier like the one proposed for Watertown with the emissions from typical fossil fuel power plants.



Source: produced from data from NREL/TP-510-32575 (January 2004)

The following figure compares the life-cycle greenhouse gas emissions from a biomass gasifier ("forestry waste combustion") with the emissions from other conventional and renewable power plants.



Source: HydroQuebec – Greenhouse Gas Emissions report (January 2003)

#### Will the facility lower electricity costs?

New England is at a critical crossroads in terms of energy security. Demand is increasing much faster than supply. Combined with an over-reliance on natural gas and oil, supply and demand pressures significantly contribute to increasing power prices. This facility will both add new supply and help to "de-couple" New England from relying on natural gas and oil for electricity generation. Watertown Renewable Power will be part of the solution in building new generation that is not based on oil or natural gas, helping to stem rising electricity prices.

In addition, the Watertown Project is located in Southwestern Connecticut, which is severely transmission-constrained. The Watertown Project will decrease the need to import power from outside the region, therefore helping to relieve supply and demand pressures which lead to increasing costs.

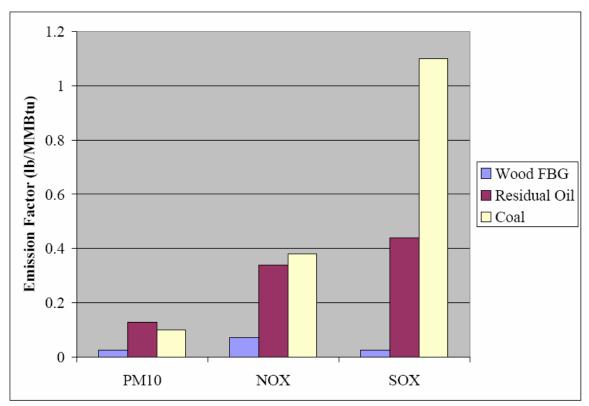
#### What are the economic benefits of the facility?

The facility will have a significant, positive impact both on the town of Watertown and the surrounding area. The facility will create approximately 200 construction jobs, 25 full-time jobs involved in the operation of the facility, and 100-150 jobs in the harvesting, processing, and transportation of the wood fuel material. The \$90 million facility will also significantly increase the town's tax base.

## Are there air emissions from a biomass facility?

Emissions from a biomass facility are substantially lower than those from fossil fuel-based energy sources such as coal or oil. Biomass facilities do emit low levels of nitrogen oxides ("NO<sub>x</sub>"), sulfur dioxide ("SO<sub>x</sub>") and particulate matter ("PM"), but, in order to qualify as renewable energy in the state of Connecticut, these emissions are strictly limited by requiring that the facility utilize "low emission advanced renewable energy conversion technologies". The following figure graphically presents the results of this comparison between the Watertown Renewable Power ("WRP") facility and typical fossil fuel plants in Connecticut.

<sup>&</sup>lt;sup>1</sup> Connecticut Public Act No. 03-135, AN ACT CONCERNING REVISIONS TO THE ELECTRIC RESTRUCTURING LEGISLATION



Source: M.I. Holzman & Associates, LLC

In addition, utilization of clean biomass material that would have otherwise been deposited in a landfill greatly reduces greenhouse gas emissions by avoiding the formation of methane. According to the Environmental Protection Agency, methane has a significantly greater (more than 20 times) global warming impact than  $CO_2$  over a 100-year period.<sup>2</sup>

# Are there safety concerns for biomass facilities?

The Watertown Facility is being designed with a state-of-the-art level of automation and will be equipped with a distributed control system ("DCS"). This system allows the plant operator to monitor and control virtually all power plant and fuel yard systems from a station in the control room. Built-in redundancy and fail safe procedures are essential to the safe and efficient operation of the facility.

#### What kind of wood will the facility use?

The Watertown Project's principal source of wood fuel will be clean wood residue from sound forest management practices, timber stand improvements, tree trimmings produced by utility and municipal maintenance crews, stumps and unusable wood from land-conversion activities. The bulk of the material will come from forest management activities in Connecticut, eastern New York, and western Massachusetts. It is anticipated

<sup>&</sup>lt;sup>2</sup> http://www.epa.gov/methane/

that some amount of primary mill by-products (clean sawdust or chipped slab wood) and recycled wood (pallets) may also be utilized by the facility.

#### Will the project use painted or treated wood as a fuel source?

As a renewable energy facility, the Watertown Project is entitled to participate in certain state and federal incentive programs which include the sale of Renewable Energy Credits ("RECs") and use of the federal Production Tax Credit ("PTC"). In order to participate in both of the programs, and as a condition of its electricity purchase agreement with CL&P, the project must comply with state<sup>3</sup> and federal<sup>4</sup> regulations that define and establish biomass fuel standards. These regulations specifically prohibit the use of painted or treated wood fuel.

#### How can you insure that the project won't use painted or treated wood?

Watertown Renewable Power will have a quality control program in place, both with its wood chip suppliers and at the facility, to ensure compliance with regulatory prohibitions on the use of painted or treated wood.

# Will the wood be chipped on-site?

The wood fuel will be delivered to the site in chipped form. The facility will have a disc screen and "wood hog" to separate and regrind any oversized pieces that may be included in a load of chips. This equipment will be enclosed to control noise and dust.

#### Is there enough wood to meet the needs of the facility?

The sustainability of the project's wood fuel supply is an essential element of its classification as a renewable energy project. Over the last 10 years numerous biomass studies have been commissioned by independent agencies to assess the supply of clean forestry residue (wood chips) and primary lumber mill waste available in Connecticut and New England for power production.

- Antares Group produced a report entitled *Fuel Supply Assessment for Waterbury and Plainfield Areas* (August 2004) for the Connecticut Clean Energy Fund ("CCEF"). This report concluded that as much as 730,000 ton/yr (design moisture) is available in the region.
- A CONEG Policy Research Center report, Securing a Place for Biomass in the Northeast United States: A Review of Renewable Energy and Related Policies (March 31, 2003), assesses the current availability of clean wood fuel in Connecticut.

<sup>&</sup>lt;sup>3</sup> Connecticut Public Act No. 06-74, AN ACT CONCERNING BIOMASS

<sup>&</sup>lt;sup>4</sup> 26 USC § 45 (Energy Policy Act of 2005)

■ A CCEF report, *Biomass Strategies for Connecticut* (July 2000), estimates sustainable wood fuel supplies for 100 – 300 MW of wood fired power exist in Connecticut.

These fuel supply studies commissioned by independent agencies all indicate that the wood fuel requirements of the project can be readily satisfied from the available and regenerative resources available in the region on a sustainable basis. In addition, Watertown Renewable Power has initiated a site-specific study to determine the particular sources and suppliers of wood fuel.

# Has Tamarack Energy built any other projects?

The principals and senior staff of Tamarack Energy have developed and built several thousand megawatts of energy projects, including three biomass projects located in the Northeast that continue to operate.

#### What will be the visual impacts of the project?

As part of the permitting process, Tamarack Energy will develop visual simulations from critical viewpoints so the community can better understand its impact. One of the site selection criteria was a location that is industrial and commercial in nature, so the facility would not have a substantial visual impact.

## Are there any odor issues with the facility?

A properly operating biomass gasification plant emits no odors. The only odor which may be detectable to someone within the vicinity of the site would be emanating from the wood storage pile, which may smell like the mulch that many of us spread around our houses to control weeds.

#### Will there be a visible smoke plume coming out of the stack?

There will be no visible smoke plume coming out of the stack. Since a large portion of the fuel that enters our gasification system is in fact water, a white water vapor plume may be visible on cold days.

#### What are the traffic impacts of the facility?

One of the many factors taken into consideration in selecting the site was its accessibility to nearby roadways and the potential impact on residences. The Watertown site is located very close to Route 8 and there are no residential properties in the immediate area. The site is also located close to businesses with existing truck traffic, including UPS and Federal Express terminals and a waste transfer facility. It is not believed that the Watertown Project will have a significant impact on the traffic in the area surrounding the facility.

# Can biomass play an important role in reducing our dependency on fossil fuel-based energy sources?

In the United States, biomass currently accounts for about two percent of the nation's electricity generation. The U.S. Department of Energy estimates that biomass could supply five percent of our electricity consumption needs by 2010. Other groups, such as the Electric Power Research Institute, have estimated that biomass has the potential to provide anywhere between eight and 16 percent of the total U.S. electric needs in the future. A USDA study found that over 1.3 billion dry tons per year of biomass potential exists, which would enable a significant portion of our country's electricity and fuel to come from environmentally-friendly and sustainable organic materials such as wood and other quick-growing plants.

#### Will the project be paying property taxes?

Yes. It is anticipated that Watertown Renewable Power will be one of Watertown's largest taxpayers.