

**Subcommittee on Solid Waste Management
Room 216, Cross State Office Building**

**October 2, 2013
9:00 a.m.**

AGENDA

- 1. Welcome, Introductions and Overview of Meeting**
 - *Subcommittee Chairs*

- 2. Issues and Challenges Facing the State - Invited Presenters**
 - Waste Processing Facility Operations
 - ReEnergy Lewiston
 - Richard Geisser, Regional Manager of Recycling Operations for ReEnergy Holdings and Scott Montana, Facility Manager of ReEnergy Lewiston*

 - Composting Facility Operations
 - Casella Organics
 - Jay Kilbourn, Regional VP of Organics and John Leslie, Organics Division Manager for Maine*

- 3. Subcommittee Discussion and Planning**
 - Subcommittee Members

Adjourn by noon

Presentation to Environment & Natural Resources Solid Waste Subcommittee

October 2nd, 2013



CASELLA RESOURCE SOLUTIONS
recycling collection organics energy water solutions



Overview

John Leslie, Division Manager

- History of Casella Organics
- Profile of organics in Maine's MSW stream
- Facilities and technologies in Maine

Jay Kilbourn, Vice President

- Dynamic industry
- Emergence of SSO ("food waste") recycling on a broader scale
- Examples from other states
- Conclusions

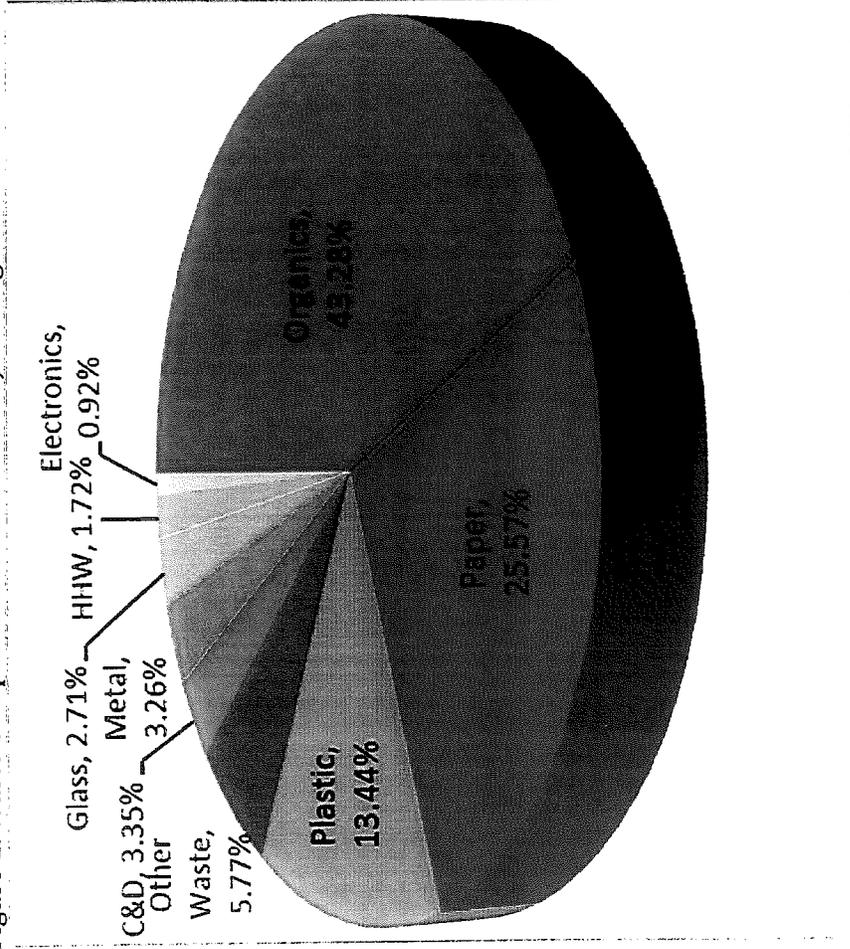
Casella Organics

Many Materials – Multiple Recycling Methods – Regional Footprint

- Operating in Maine since 1983
- A Resource Solutions approach drives our business
- Extensive investment in Maine & the northeast
 - Zero Sort Recycling
 - Composting
 - Collection
 - Landfill
- Organics recycling leader throughout the region
 - Equipment R&D
 - Operate City of Boston compost facility

Profile of Organics in Maine's MSW Waste Stream

Figure 1. Waste Composition for the Nine Major Categories.



- 2011 Maine Residential Waste Characterization Study
- Conducted by The University of Maine School of Economics
- Organics and Paper make up the vast majority of the sampled waste
- Report available online at

<http://www.mrra.net/wp-content/uploads/2011-Maine-Waste-Composition-Study-by-Dr.-George-Criner-et.-al.pdf>

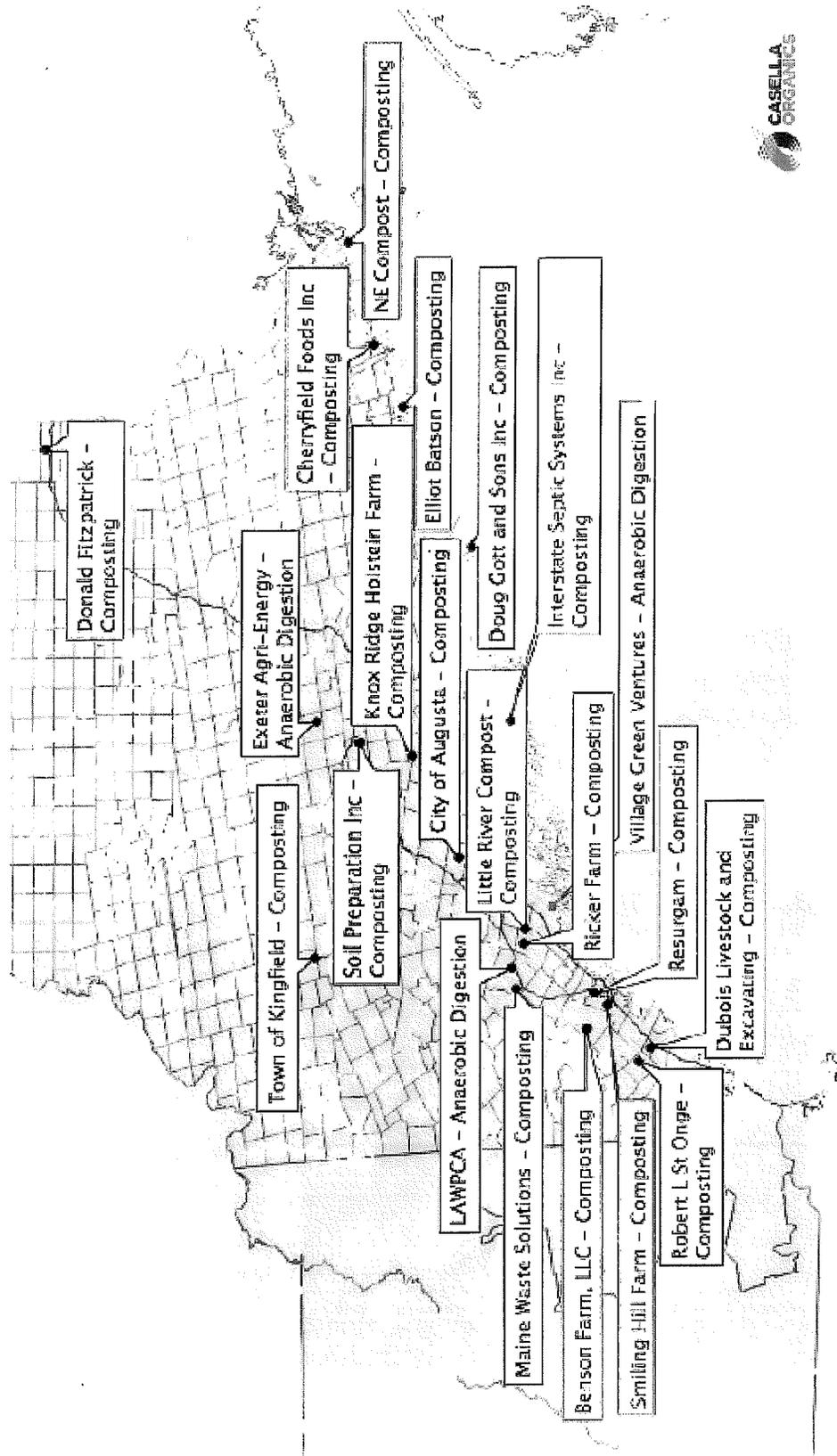
What's in "Organics"?



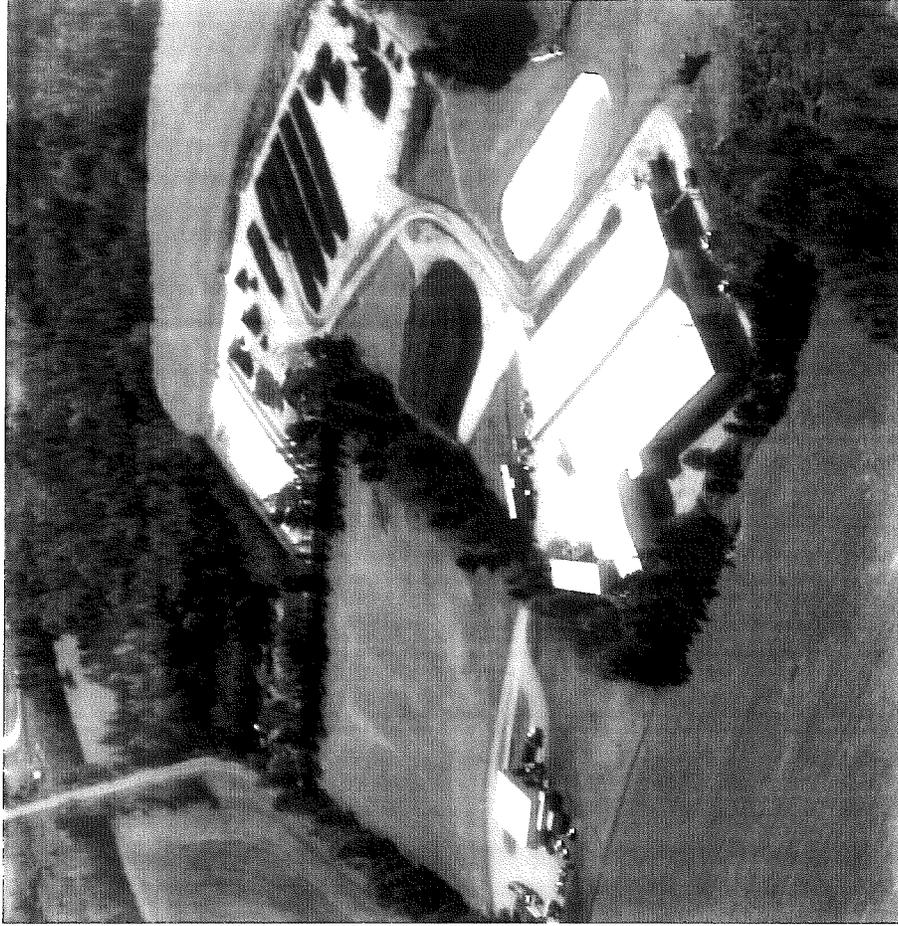
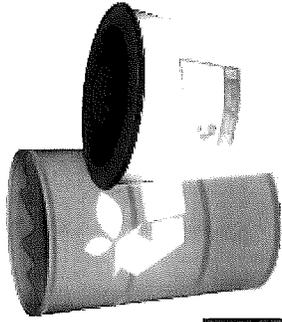
Table 6. Organic waste percentages.

Sub-Category	% of Total Waste	% of Organic Waste	Cumulative %
Food	27.86	64.38	64.38
Remainder/Composite Organic	10.97	25.35	89.73
Diapers	2.97	6.86	96.58
Leaves & Grass	1.16	2.68	99.26
Prunings & Trimmings	0.32	0.74	100.00

Maine Organics Recycling Facilities



Technology: Composting

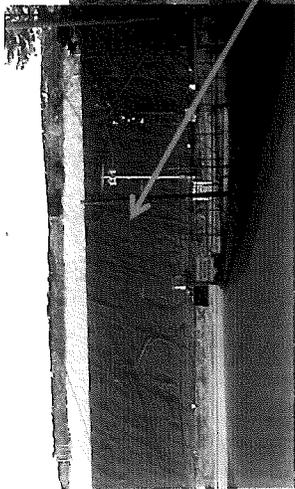


earthlife[®]

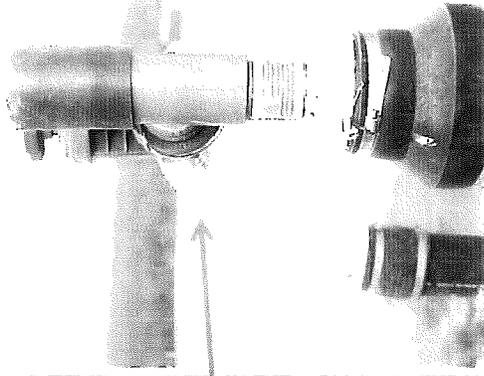
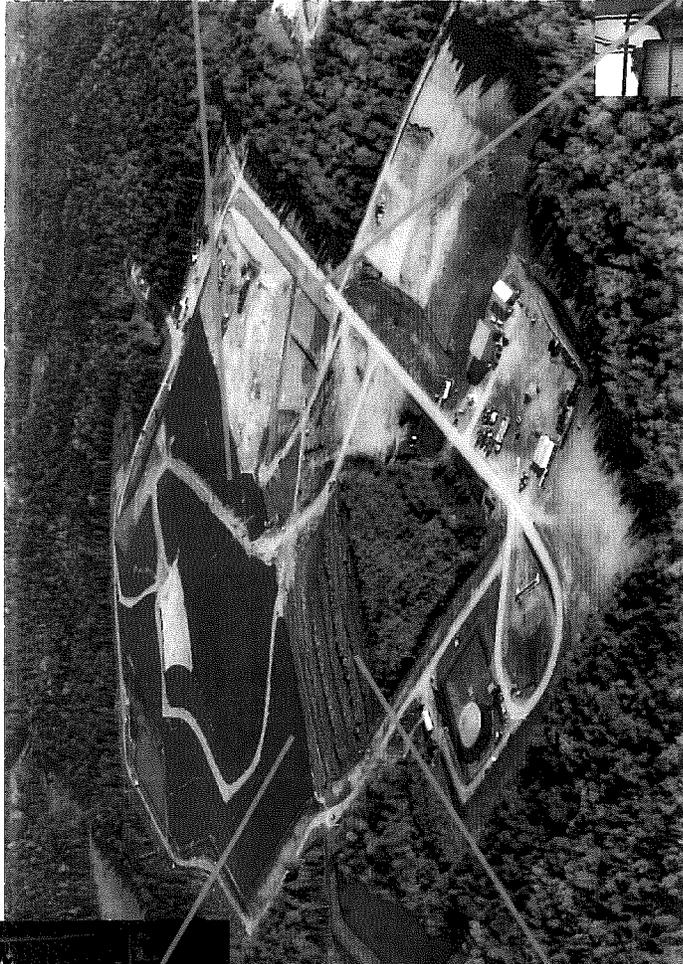
Technology: Anaerobic Digestion



The Role of Landfills - Juniper Ridge



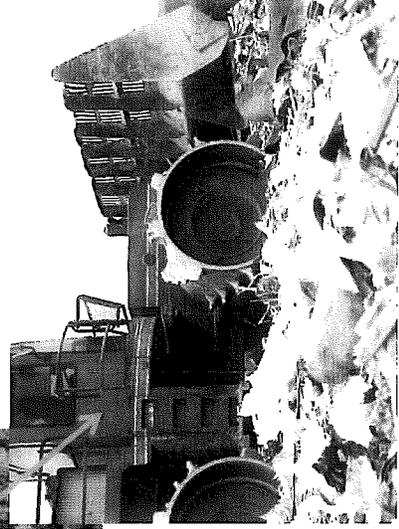
Gas-to-Energy Landfill Cover



LANDFILL LINER SYSTEM

For many organic streams, due to contamination and/or the current status of regional infrastructure, Low Emission Landfill with Gas-To-Energy remain the current highest and best use.

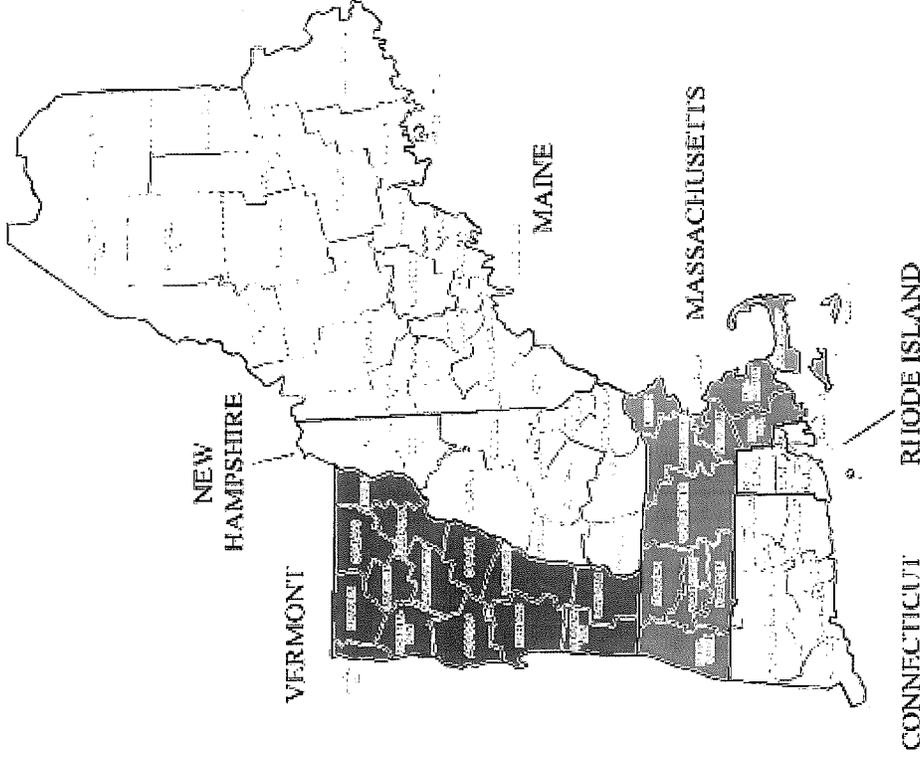
Landfills serve as a needed backup when recycling capacity is down for maintenance or inadequate capacity is on line.



Gas-to-Energy Landfill

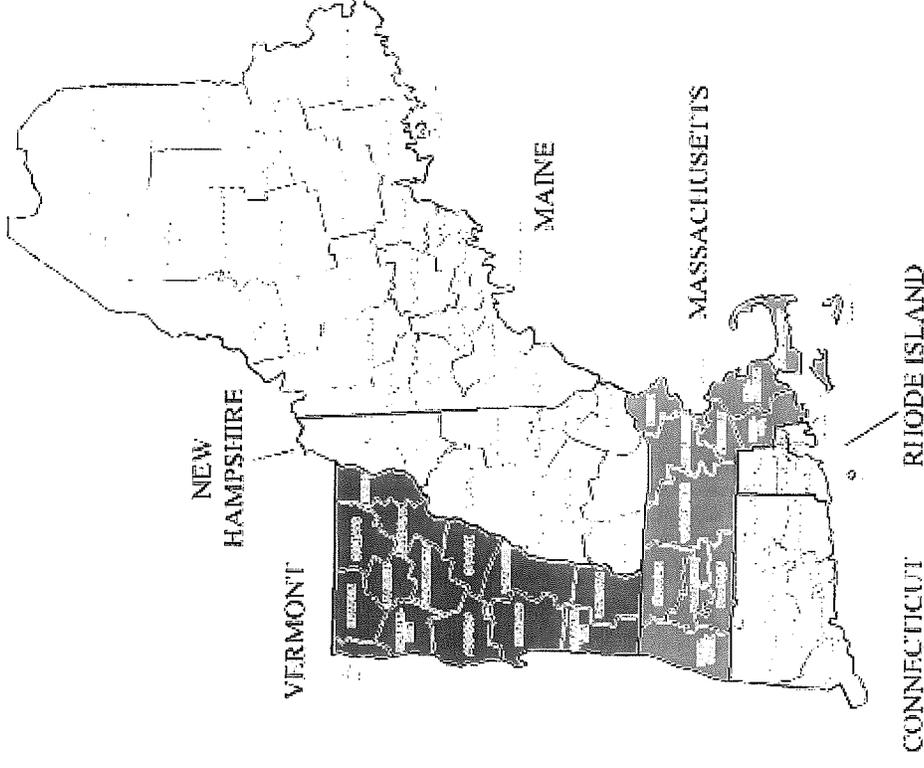
Regulatory Developments: Vermont

- Vermont Act 148
- Universal Recycling of Solid Waste
- Passed unanimously in 2012
- All large generators must divert their Food Waste (FW)
 - 2014: >104 tons/yr
 - 2015: >52 tons/yr
 - 2016: >26 tons/yr
 - ... 2020: all generators
- Haulers/Transfers must provide parallel FW collection by 2017
- Disposal facilities cannot accept FW after 2020 – multiple recycling options under development



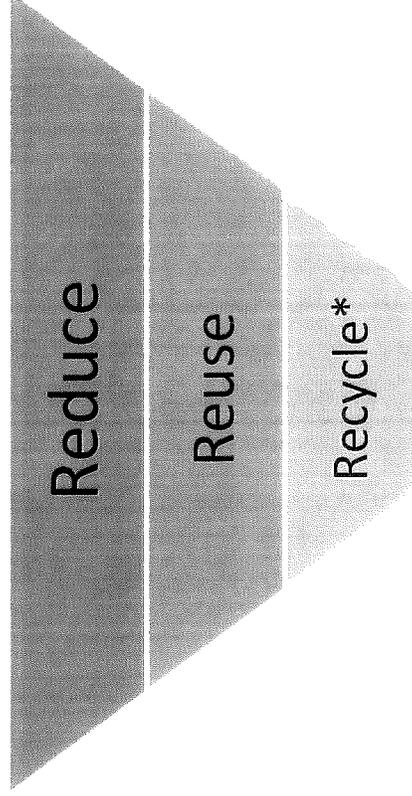
Regulatory Developments: Massachusetts

- **Food Waste Disposal Ban**
 - Rule package to come out soon
 - Applies to generators of >52 tpy
 - Effective mid-2014
- **Massachusetts Supporting Initiatives**
 - Streamlined facility permitting
 - RFPs for State Infrastructure
 - Recycling grants
 - Low interest loans
 - Net-metering
 - Reduced regulatory burden
 - Feasibility \$\$ - GLSD
- **Infrastructure Gap**
 - Expect to divert 350k tons/yr
 - Current capacity: 150k tons/yr



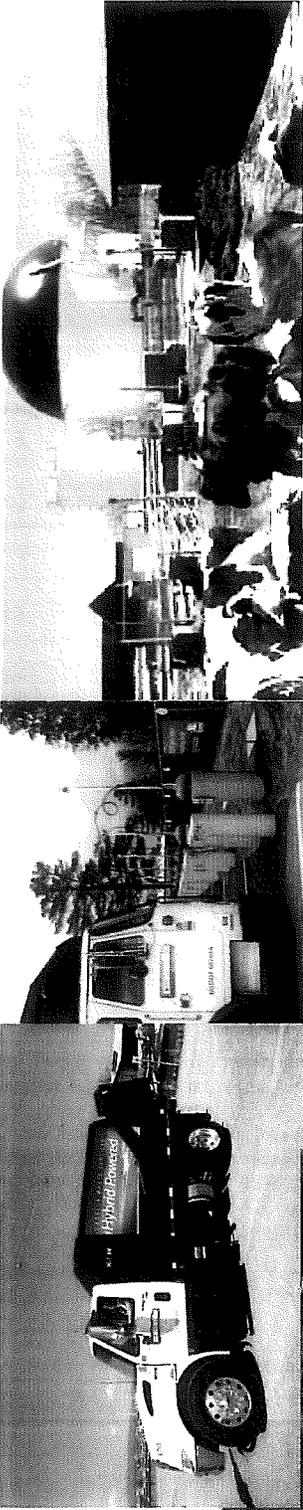
Conclusion

The field of Organics recycling is dynamic and rapidly changing. There are many developments both in Maine and regionally that point to greater opportunities to capture these materials from the waste stream and recover their value as resources. Let's work together to promote them.



Dispose

*both "traditional" recycling and organics recycling



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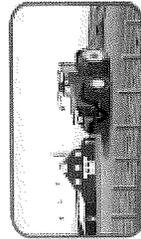
CASELLA RESOURCE SOLUTIONS

10000 W. 10th Avenue, Suite 100, Denver, CO 80202

Sustainability Summit

Trading Partner Alliance
FMI and CMA

Jordan Dairy Farm, Rutland, Mass.



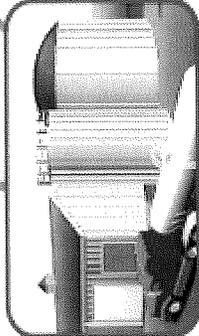
Crop Fertilizer
Reduced chemical fertilizer
Increased yield
\$75,000 annual avoided cost

Clean Renewable Electricity
3.7 million kWh to power nearly 308 homes.
\$500,000 annual revenue

Renewable Energy Credits (REC)
3,700 RECs
\$74,000 annual revenue

Carbon Dioxide
5,600 tons CHG destroyed

Advance sustainable farms and food
Create clean renewable energy
Reduce organic waste
Reduce greenhouse gases
Improve water quality



Anaerobic Digester
450 kilowatt system

Manure



Milk
Annual production of 6 million pounds / 7 million gallons of milk

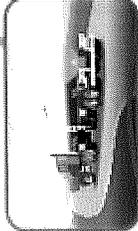


350 Milking Cows
\$100 - \$200 per cow incremental net farm profit from non-milk revenues

Farm Powered



Nutrient-Rich Dairy Products



Organic Waste (Feedstock)
20,000 tons of organic waste annually
\$200,000 in annual tipping fee revenue

Food Processors*

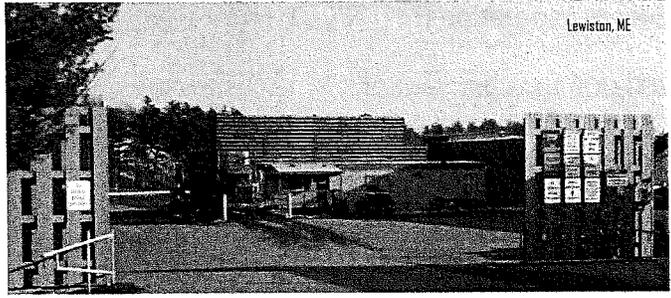
Agri-Mark Options

* Ice cream, fruit drinks, salad oil, whey, processed meats, etc.

For more information go to USDairy.com/Sustainability or contact InnovationCenter@USDairy.com

U.S. DAIRY SUSTAINABILITY COMMITMENT

INNOVATION CENTER FOR U.S. DAIRY
Innovation - Advancing the U.S. Dairy



*Maine State Legislature
Committee on Environment and Resources
Subcommittee on Solid Waste*

October 2, 2013



Fast Facts – ReEnergy Holdings



- Headquartered in Latham, NY
- Established 2008
- 315 employees; 6 states



Fast Facts – ReEnergy Holdings



- 325 MWs of renewable energy generation (ME, NY, CT, NC)
- 700,000 tons per year of C&D/wood recovery processing (ME, NH, MA)



ReEnergy Holdings in Maine



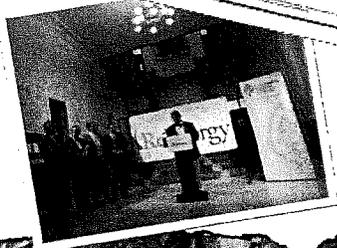
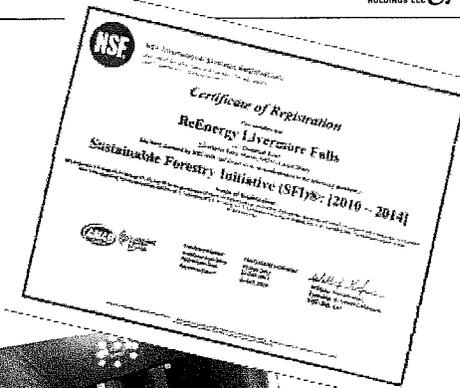
- 108 employees (corporate and across five facilities); supporting hundreds more
- Four biomass-to-energy facilities and one recycling facility
- 163 MW of installed capacity, or 1.2 million MWh – enough to serve 154,000 homes
- 220,000 tons per year of C&D/wood recovery processing
- Vertically integrated wood waste-to-energy



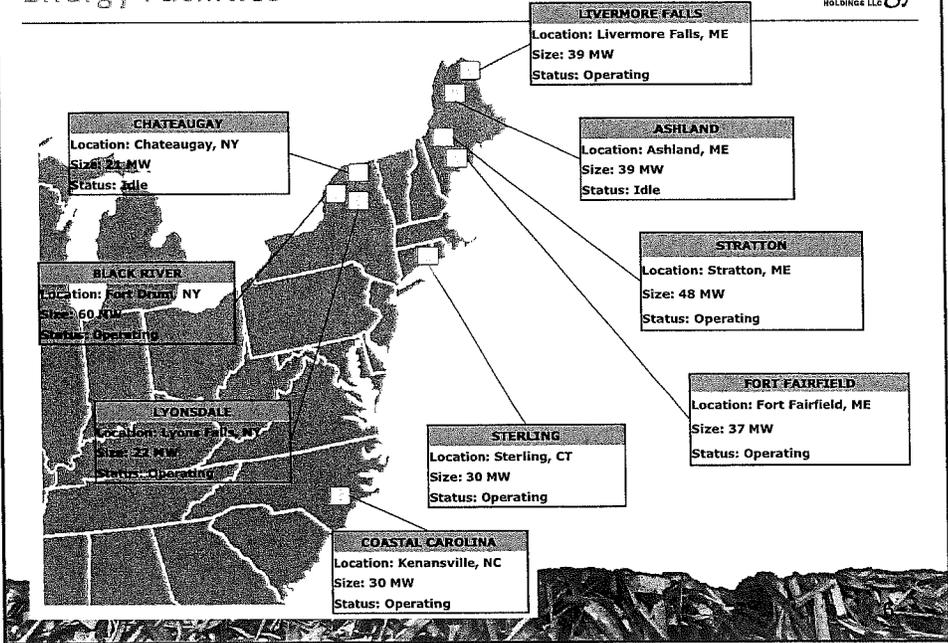
SFI Certification

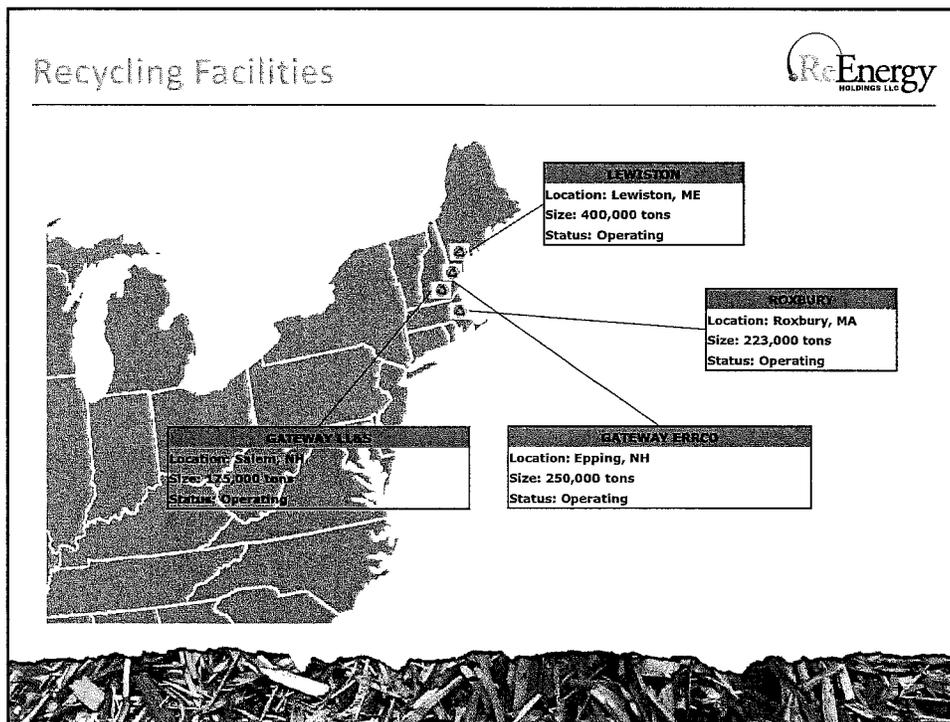


- First company solely devoted to electricity production to be certified by SFI
- Commitment to use best management practices and protect forest health



Energy Facilities





Recycling Operations

Facility Name/Location	2013 TPY	Employees
ReEnergy Lewiston Lewiston, ME	220,000 tons	47
ReEnergy Gateway (LL&S) Salem, NH	160,000 tons	37
ReEnergy Gateway (ERRCO) Epping, NH	145,000 tons	58
ReEnergy Roxbury Roxbury, MA	160,000 tons	49

Recycling Operations



- The Team:



Greg Lahey
Senior Vice President
Asset Management



Rich Geisser
Regional Manager
Recycling Operations

- Corporate, regional and facility staff with decades of experience in solid waste processing, safety and compliance



Lewiston Facility



ReEnergy Lewiston

- Formerly KTI Bio-Fuels
 - ❖ last 2-years spent more than \$2 million in facility improvements resulting in increased recycling rates (25% to 78%) and additional environmental controls
- Acquired by ReEnergy Aug. 2013
- 2012 Statistics:
 - ❖ 78% recycling rate
 - ❖ 4,784 tons of metal
 - ❖ 28,492 tons of wood chip fuel
 - ❖ 136,815 tons of alternative daily cover

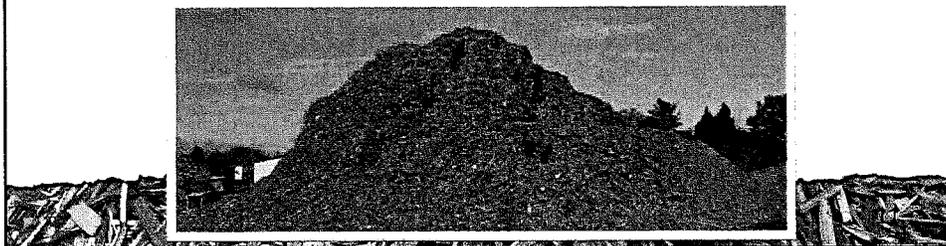


Lewiston Facility



Plans for next 6-12 months:

- Complete facility site improvement project (~\$2 million for additional site improvements, including soil remediation and environmental controls)
- Make investments to upgrade technology and processes (e.g., wood and metals recovery)
- Increase recovery of wood
 - ❖ Develop additional wood markets with emphasis on ME end users
 - ❖ Improve fuel quality
 - ❖ Projected increase in wood recovery – 50%

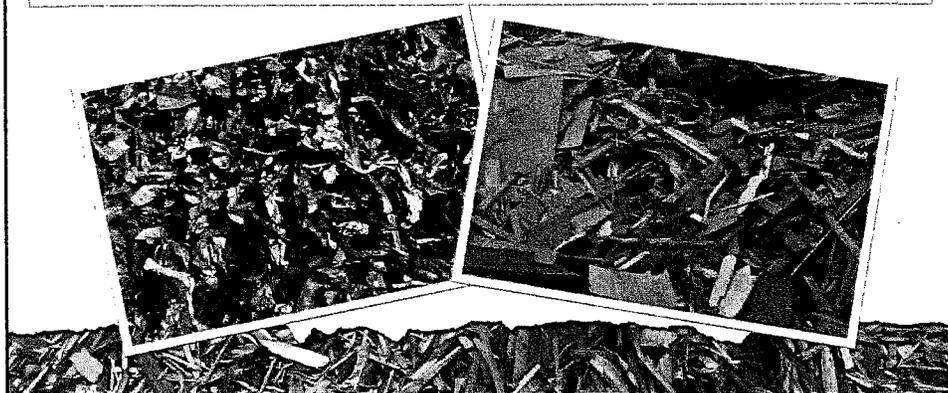


Lewiston Facility



Plans for next 6-12 months (cont'd):

- Incorporate processes to increase metals recovery (ferrous and non-ferrous) and improve quality of products sold to end markets
- Optimize waste flow: re-direct incoming waste to most efficient ReEnergy C&D recycling facility from a technology perspective and proximity to generator





Thank You

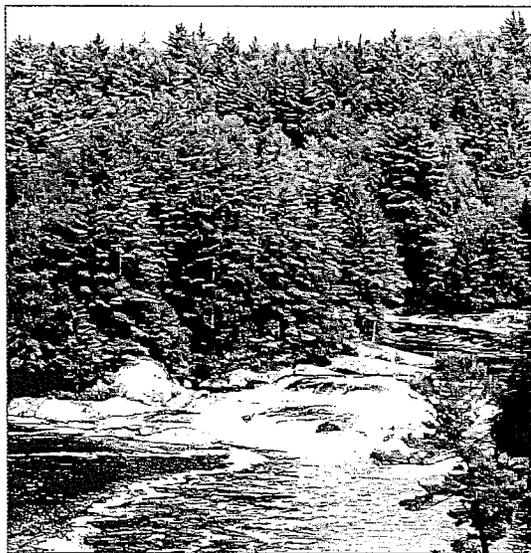




About ReEnergy Holdings LLC

ReEnergy Holdings LLC, a portfolio company of Riverstone Holdings LLC, owns and operates facilities that use forest-derived woody biomass and other waste residues to produce renewable energy. ReEnergy was formed in 2008 by affiliates of Riverstone Holdings LLC and a senior management/co-investor team comprised of experienced industry professionals.

ReEnergy is one of the largest biomass-to-energy companies in the United States, with 325 MW of installed renewable energy generation capacity. ReEnergy operates in six states and employs approximately 320 people.



ReEnergy acquired four biomass-to-energy facilities in Maine in December 2011 as part of a multi-facility portfolio purchase from Boralex Industries Inc., and assumed ownership of a recycling facility in Lewiston in 2013.

Because of ReEnergy's strong presence in Maine, the company maintains corporate staff in Maine and makes it a priority to conduct business with Maine companies on projects both within and outside the state of Maine. Within the state, ReEnergy employs more than 100 people. ReEnergy's economic impact in the state of Maine exceeds \$75 million.

To find out more, visit www.reenergyholdings.com.

The Benefits of Biomass-Derived Energy

Biomass-to-energy facilities provide sustainable electricity from responsibly harvested green forest residue biomass and unadulterated wood. This material otherwise would have been left to decompose on forest floors, landfills or residential lots, resulting in the production of harmful methane gases and contributing to the risk of fire. In addition to the environmental benefits associated with biomass-to-energy, these facilities are very reasonably priced forms of renewable base-load energy.

The bioenergy industry:

- Creates local, rural jobs
- Makes use of abundant local fuel supply
- Provides renewable energy
- Reduces reliance on fossil fuels
- Provides continuous, affordable energy

www.reenergyholdings.com

ReEnergy's Bioenergy



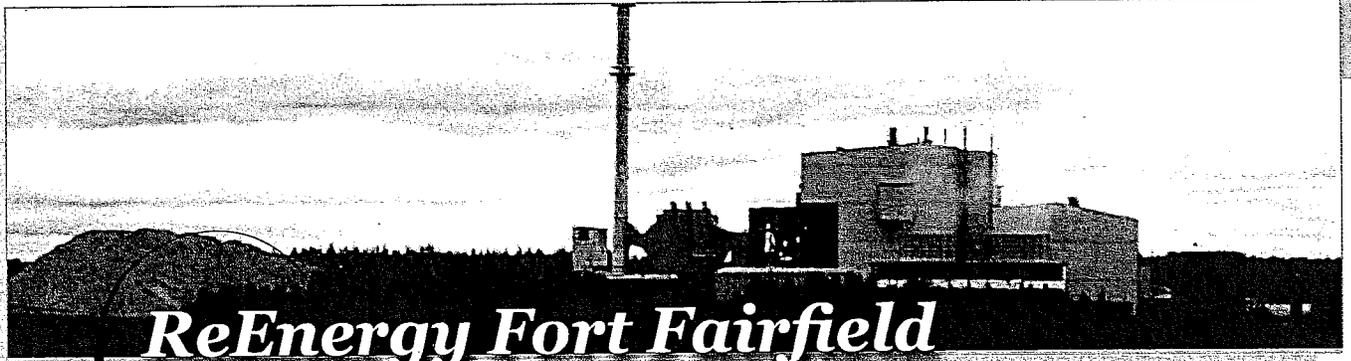
ReEnergy Ashland

ReEnergy Ashland is a 39 MW facility that opened in 1993. It is located in Aroostook County in the town of Ashland. When operational, it uses biomass as its primary fuel to produce approximately 284,000 net MWh of electricity each year – enough to supply about 37,000 homes. Steam is produced and used to generate electricity, which is sold to customers such as utilities, energy services companies, and municipal electrical co-ops.

ReEnergy Ashland is an important corporate citizen in Aroostook County. In addition to 24 well-paying direct jobs, more than 150 indirect jobs are associated with the facility, many of them related to the supply of the forest residue fuel supply and others tied to local goods and services related to the facility. At full production levels, ReEnergy Ashland purchases \$16-17 million annually in fuel from local loggers. When considering the payrolls of the direct jobs along with vendor purchases by ReEnergy Ashland, the annual economic impact on the region is in excess of \$20 million.

ReEnergy Ashland is idled due to market conditions, primarily due to low energy prices driven by natural gas prices, combined with transmission and wheeling fees that result from the need to wheel electricity through New Brunswick to access the ISO-NE marketplace.

ReEnergy continues to seek a strategy that would allow the Ashland facility to utilize locally available bioenergy feedstock to generate renewable green energy for years to come.



ReEnergy Fort Fairfield

ReEnergy Fort Fairfield, a 37 MW facility that began operations in 1987, is located near the Canadian border in Fort Fairfield – approximately 11 miles from Presque Isle in Aroostook County. The facility utilizes biomass as its primary fuel to produce approximately 260,000 net MWh of electricity each year – enough to supply about 34,000 homes. At ReEnergy Fort Fairfield, steam that is produced is used to generate electricity, which is sold directly to customers such as electrical utilities.

ReEnergy Fort Fairfield is an important corporate citizen in Aroostook County. In addition to 26 well-paying direct jobs, more than 150 indirect jobs are associated with the facility, many of them related to the supply of the forest residue fuel supply and others tied to local goods and services related to the facility. At full production levels, ReEnergy Fort Fairfield purchases approximately \$11 million annually in fuel from local loggers. When considering the payrolls of the direct and indirect jobs along with taxes paid by ReEnergy Fort Fairfield, the annual economic impact on the region is in excess of \$16 million.

Facilities in Maine



ReEnergy Livermore Falls

ReEnergy Livermore Falls is a 39 MW facility located in Androscoggin County near Lewiston in Livermore Falls. The facility, which began operation in 1992, uses biomass as its primary fuel to produce approximately 284,000 net MWh of electricity each year – enough to supply about 37,000 homes. At ReEnergy Livermore Falls, steam that is produced is used to generate electricity, which is sold directly to customers such as utilities, energy services companies or municipal co-ops.

ReEnergy Livermore Falls is an important corporate citizen in Androscoggin County. In addition to 25 well-paying direct jobs, more than 150 indirect jobs are associated with the facility, many of them related to the supply of the forest residue fuel and others tied to local goods and services related to the facility. At full production levels, ReEnergy Livermore Falls purchases \$12 million annually in fuel from local loggers. When considering the payrolls of the direct and indirect jobs along with taxes paid by ReEnergy Livermore Falls, the annual economic impact on the region is in excess of \$19 million.



ReEnergy Stratton

ReEnergy Stratton, located in Stratton in Franklin County, is a 48 MW facility that uses biomass as its primary fuel to produce approximately 355,000 net MWh of electricity each year – enough to supply 46,000 homes. At ReEnergy Stratton, some of the electricity that is produced is sold to a local business and the balance is sold directly to other customers such as utilities, energy services companies, and municipal co-ops. The facility began operations in 1989.

ReEnergy Stratton is an important corporate citizen in Franklin County. In addition to 29 well-paying direct jobs, more than 150 indirect jobs are associated with the facility, many of them related to the supply of the forest residue fuel supply and others tied to local goods and services related to the facility. At full production levels, ReEnergy Stratton purchases \$15 million annually in fuel from local loggers. When considering the payrolls of the direct and indirect jobs along with taxes paid by ReEnergy Stratton, the annual economic impact on the region is in excess of \$22 million.

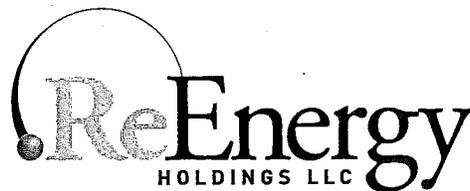
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ReEnergy's Resource Recovery Facility in Maine

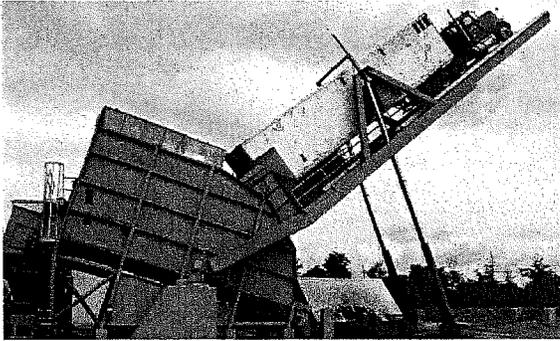


ReEnergy Lewiston is a construction and demolition material processing facility located in Lewiston, Androscoggin County. ReEnergy Lewiston accepts and recycles nearly all solid materials generated from construction and demolition activities. It has a permitted capacity of 400,000 tons per year. The facility reuses or recycles an average of 70 percent of the materials that it receives. The material recovered in the recycling process is converted to wood chips used in biomass power plants in New England and to create a protective barrier in landfills.

ReEnergy Lewiston is an important corporate citizen in Androscoggin County. In addition to 25 well-paying direct jobs, ReEnergy Lewiston supports indirect jobs created with in-state suppliers and service providers.



www.reenergyholdings.com
info@reenergyholdings.com



ABOUT REENERGY HOLDINGS LLC

ReEnergy Holdings LLC, a portfolio company of Riverstone Holdings LLC, owns and operates facilities that use biomass and waste residues to produce renewable thermal and electric energy. ReEnergy owns and/or operates 13 facilities in six states. One of the largest biomass-to-energy companies in the U.S., ReEnergy has 325 MW of installed capacity and approximately 320 employees.

WHAT WE DO

ReEnergy Holdings is an integrated renewable energy company. We collect, process and recycle items for use as fuel, and operate facilities that create reliable power from that fuel. We are proving every day that renewable energy production is a reliable business with positive benefits on local economies and ecologies.

Biomass is fuel derived from natural, organic materials, a renewable and sustainable source of energy used to create electricity or other forms of energy. Bioenergy — or biopower — is electricity generated from renewable organic waste that would otherwise be left to rot in forests, dumped in landfills, or openly burned.

Biomass can be made from agricultural and forestry residues, industrial wastes and crops grown solely for energy purposes.

ReEnergy's entire team understands that investigating and creating new sources of electricity for our world, while respecting the environment, is a critical, long-term need. Sustainable, renewable energy production is essential to reducing the United States' dependence on fossil fuels. These principles form the core of ReEnergy's vision: Increase the amount of biomass that is recycled and recovered; and use proven advanced technologies to convert recovered biomass into energy.

ReEnergy is interested in energy solutions that make the world a better place. To learn more about us, visit www.reenergyholdings.com.

To learn more about our biomass-to-energy and resource recovery facilities, see other side.



OUR FACILITIES

In New York:

- ReEnergy Black River, a 60 MW facility located on the Fort Drum U.S. Army installation that recently was converted to utilize biomass as its primary fuel source
- ReEnergy Lyonsdale, a 22 MW biomass-to-energy facility
- ReEnergy Chateaugay, a 20 MW biomass-to-energy facility

In Maine:

- ReEnergy Stratton , a 50 MW biomass-to-energy facility
- ReEnergy Livermore Falls, a 40 MW biomass-to-energy facility
- ReEnergy Fort Fairfield, a 36 MW biomass-to-energy facility
- ReEnergy Ashland, a 40 MW biomass-to-energy facility
- ReEnergy Lewiston, a facility that processes construction and demolition material

In New Hampshire:

- ReEnergy Gateway, which operates two facilities that process construction and demolition material (one in Salem and one in Epping) that service the eastern New England/Boston metropolitan marketplace

In Massachusetts:

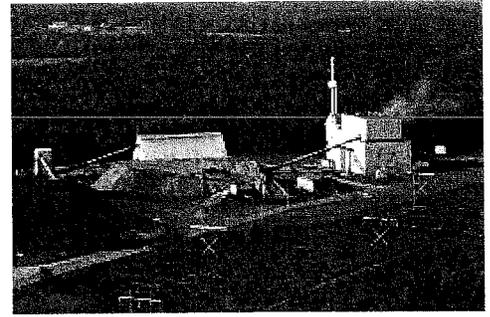
- ReEnergy Roxbury, a facility that processes construction and demolition material

In Connecticut:

- ReEnergy Sterling, a 31 MW facility that generates energy from tires and biomass materials

In North Carolina:

- Coastal Carolina Clean Power, a 28 MW biomass-to-energy-facility in Kenansville, operated by ReEnergy Holdings



ReEnergy Holdings LLC

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ReEnergy Holdings has achieved certification to the Sustainable Forestry Initiative® (SFI) 2010-2014 Standard, which verifies that ReEnergy's biomass procurement program promotes land stewardship and sustainable forestry practices.

In voluntarily seeking this third-party certification from SFI, ReEnergy has made a formal commitment to procure its forest materials from qualified logging professionals who utilize best management practices and operate with an ethic of land stewardship that integrates reforestation and protects the long-term quality of soil, air, water resources, biological diversity and aesthetics.

ReEnergy is the first company solely devoted to electricity production to be certified to the SFI 2010-2014 standard.

ReEnergy believes that sustainable, renewable energy production is essential to reducing the United States' dependence on fossil fuels and is committed to creating renewable sources of electricity while respecting the environment.

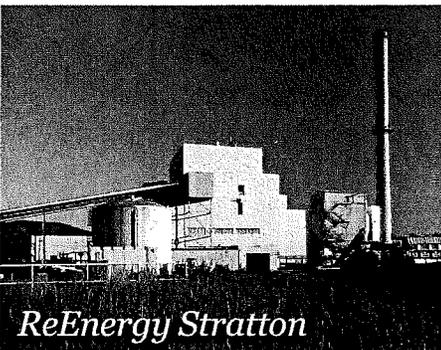
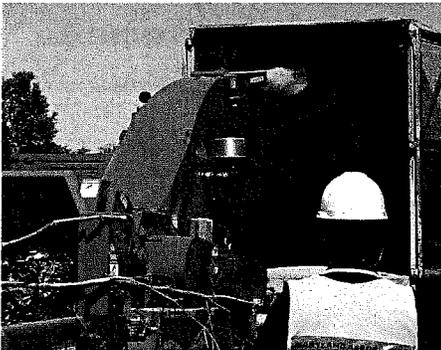
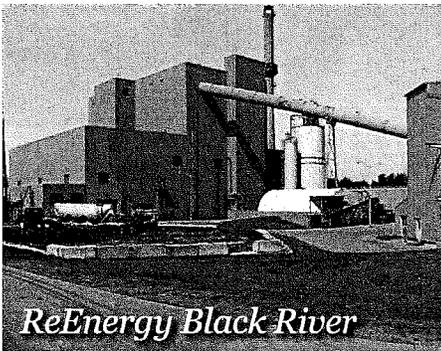
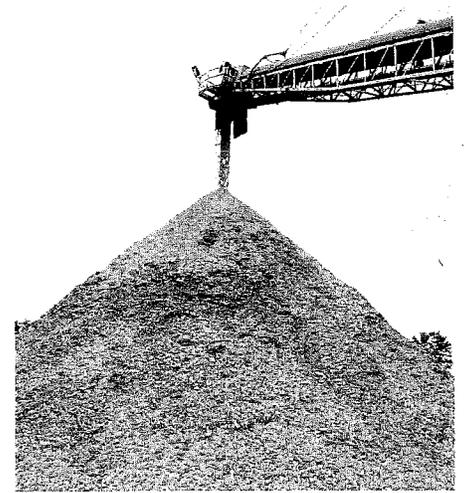
SFI is an independent, non-profit organization responsible for maintaining, overseeing and improving a sustainable forestry certification program that is internationally recognized and is the largest single forest standard in the world. The SFI 2010-2014 Standard is based on principles and measures that promote sustainable forest management and consider all forest values. It includes unique fiber sourcing requirements to promote responsible forest management on all forestlands in North America.

ReEnergy's policy is to locate its facilities in regions capable of supplying raw materials while simultaneously ensuring the long-term sustainability of the forests where those facilities are located.

Continued

In seeking SFI certification, ReEnergy has committed to broaden the practice of sustainable forestry with its suppliers and wood producers. Promoting sustainable forestry practices allows ReEnergy to meet the environmental and social needs of the present without compromising the needs and resources of future generations.

To achieve the SFI Standard Principles, Objectives, Performance Measures and Indicators, ReEnergy developed and adopted programs to guide its wood fuel procurement activities. ReEnergy is committed to annually review the effectiveness of its SFI Policy, procedures, and systems and to continually improve its sustainable forestry program. An important element to implement the SFI Standard is an annual management review process to foster perpetual improvement.



ABOUT REENERGY HOLDINGS & ITS FACILITIES

ReEnergy Holdings LLC, a portfolio company of Riverstone Holdings LLC, owns and operates power facilities that use forest-derived woody biomass and other wood waste residues to produce homegrown, renewable energy. ReEnergy was formed in 2008 by affiliates of Riverstone Holdings LLC and a senior management/co-investor team comprised of experienced industry professionals. ReEnergy employs approximately 320 people in six states and owns and/or operates nine power facilities with the combined capacity to generate 325 megawatts of energy.

ReEnergy owns four biomass-to-energy facilities in Maine: A 48-megawatt facility in Stratton, a 39-megawatt facility in Ashland, a 37-megawatt facility in Fort Fairfield, and a 39-megawatt facility in Livermore Falls.

ReEnergy owns three biomass-to-energy facilities in New York: The 60-megawatt Black River Generation Facility at Fort Drum that has been converted to utilize biomass as its primary fuel, a 22-megawatt facility in Lyons Falls; and a 21-megawatt facility in Chateaugay.

The company also owns a 30-megawatt biomass- and tire-to-energy facility in Sterling, CT, operates a 30-megawatt biomass-to-energy facility in Kenansville, NC, and owns four construction and demolition waste and waste wood processing facilities that service the eastern New England/Boston metropolitan area marketplace from locations in Salem, NH, Epping, NH, the Roxbury area of Boston and Lewiston, ME.

ReEnergy Holdings LLC

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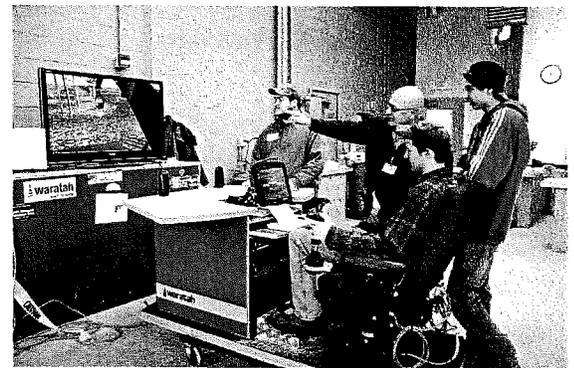
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ReEnergy in 2013

MARCH

In March, ReEnergy partnered with Nortrax and State Senator Tom Saviello to showcase two John Deere forestry equipment simulators at the Foster Career and Technical Education Center at Mt. Blue High School in Farmington, Maine. Students were able to experience what it's like to work the controls of a John Deere forwarder and cut-to-length system.



MAY

ReEnergy celebrated the grand opening of its Black River facility on May 31, attracting regional and state officials and supporters from the forest products industry. The ReEnergy Black River facility, located at the U.S. Army's Fort Drum installation near Watertown, has 60 megawatts of generation capacity. Before it was idled in early 2010 by its former owner, the facility primarily burned coal to produce electricity. ReEnergy acquired the facility in December 2011 and invested more than \$34 million to convert the facility to use biomass as its primary fuel, creating new jobs and a new renewable energy source for the North Country region.



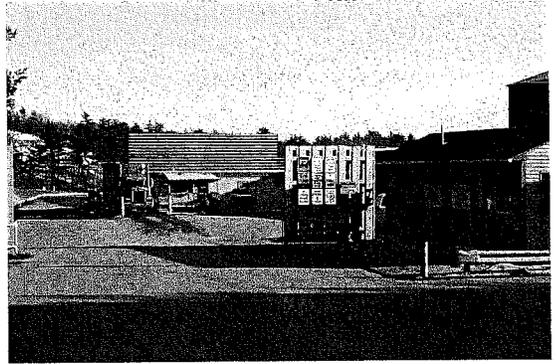
JUNE

ReEnergy held an event on June 13th in Augusta, Maine to celebrate its certification to the Sustainable Forestry Initiative® (SFI®) Standard. ReEnergy is the first company solely devoted to electricity production to be certified to the SFI Standard. This certification verifies that ReEnergy's biomass procurement programs in Maine and New York promote land stewardship and responsible forestry practices.



AUGUST

ReEnergy acquired a construction and demolition material processing facility in Lewiston, ME from KTI Bio-Fuels Inc. on Aug. 1.



On Aug. 22, ReEnergy Stratton celebrated its haulers at a Hauler Appreciation Day. Haulers were feted with a barbecue lunch and giveaways, and also had an opportunity to brush up on their safety knowledge.



SEPTEMBER

On Sept. 9, ReEnergy received the award for “2013 Outstanding Forest Products Manufacturer of Maine” from the Maine Forest Products Council. ReEnergy was recognized for its commitment to sustainability, innovation, health and safety, and community engagement.



On Sept. 25, ReEnergy will receive the Stewardship Award from the Empire State Forest Products Association. The ESFPA Stewardship Award recognizes an Association member that has provided exemplary work through sustainable forest management, and the award was bestowed on ReEnergy for its precedent-setting certification to the Sustainable Forestry Initiative (SFI) Standard.

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