

**RIPUC Use Only**

Date Application Received: \_\_\_/\_\_\_/\_\_\_  
Date Review Completed: \_\_\_/\_\_\_/\_\_\_  
Date Commission Action: \_\_\_/\_\_\_/\_\_\_  
Date Commission Approved: \_\_\_/\_\_\_/\_\_\_

GIS Certification #:  
\_\_\_\_\_

## RENEWABLE ENERGY RESOURCES ELIGIBILITY FORM

**The Standard Application Form  
Required of all Applicants for Certification of Eligibility of Renewable Energy Resource  
(Version 8 – December 5, 2012)**

**STATE OF RHODE ISLAND PUBLIC UTILITIES COMMISSION  
Pursuant to the Renewable Energy Act  
Section 39-26-1 et. seq. of the General Laws of Rhode Island**

**NOTICE:**

When completing this Renewable Energy Resources Eligibility Form and any applicable Appendices, please refer to the State of Rhode Island and Providence Plantations Public Utilities Commission Rules and Regulations Governing the Implementation of a Renewable Energy Standard (RES Regulations, Effective Date: January 1, 2006), and the associated RES Certification Filing Methodology Guide. All applicable regulations, procedures and guidelines are available on the Commission's web site: [www.ripuc.org/utilityinfo/res.html](http://www.ripuc.org/utilityinfo/res.html). Also, all filings must be in conformance with the Commission's Rules of Practice and Procedure, in particular, Rule 1.5, or its successor regulation, entitled "Formal Requirements as to Filings."

- Please complete the Renewable Energy Resources Eligibility Form and Appendices using a typewriter or black ink.
- Please submit one original and three copies of the completed Application Form, applicable Appendices and all supporting documentation to the Commission at the following address:  
Rhode Island Public Utilities Commission  
Attn: Luly E. Massaro, Commission Clerk  
89 Jefferson Blvd  
Warwick, RI 02888

In addition to the paper copies, electronic/email submittals are required under Commission regulations. Such electronic submittals should be sent to [Res.filings@puc.ri.gov](mailto:Res.filings@puc.ri.gov).

- In addition to filing with the Commission, Applicants are required to send, electronically or electronically and in paper format, a copy of the completed Application including all attachments and supporting documentation, to the Division of Public Utilities and Carriers and to all interested parties. A list of interested parties can be obtained from the Commission's website at [www.ripuc.org/utilityinfo/res.html](http://www.ripuc.org/utilityinfo/res.html).
- Keep a copy of the completed Application for your records.
- The Commission will notify the Authorized Representative if the Application is incomplete.
- Pursuant to Section 6.0 of the RES Regulations, the Commission shall provide a thirty (30) day period for public comment following posting of any administratively complete Application.
- Please note that all information submitted on or attached to the Application is considered to be a public record unless the Commission agrees to deem some portion of the application confidential after consideration under section 1.2(g) of the Commission's Rules of Practice and Procedure.
- In accordance with Section 6.2 of the RES Regulations, the Commission will provide prospective reviews for Applicants seeking a preliminary determination as to whether a facility would be eligible prior to the formal certification process described in Section 6.1 of the RES Regulations. Please note that space is provided on the Form for applicant to designate the type of review being requested.
- Questions related to this Renewable Energy Resources Eligibility Form should be submitted in writing, preferably via email and directed to: Luly E. Massaro, Commission Clerk at [Res.filings@puc.ri.gov](mailto:Res.filings@puc.ri.gov).

**SECTION I: Identification Information**

- 1.1 Name of Generation Unit (sufficient for full and unique identification):  
Athens Energy LLC
- 1.2 Type of Certification being requested (check one):  
 Standard Certification     Prospective Certification (Declaratory Judgment)
- 1.3 This Application includes: (Check all that apply)<sup>1</sup>
- APPENDIX A: Authorized Representative Certification for Individual Owner or Operator
- APPENDIX B: Authorized Representative Certification for Non-Corporate Entities Other Than Individuals
- APPENDIX C: Existing Renewable Energy Resources
- APPENDIX D: Special Provisions for Aggregators of Customer-sited or Off-grid Generation Facilities
- APPENDIX E: Special Provisions for a Generation Unit Located in a Control Area Adjacent to NEPOOL
- APPENDIX F: Fuel Source Plan for Eligible Biomass Fuels
- 1.4 Primary Contact Person name and title: \_\_\_\_\_  
Robert Linkletter, President
- 1.5 Primary Contact Person address and contact information:  
Address: 164 Harmony Rd.  
Athens, ME 04942
- Phone: (207) 654-2237                      Cell: (207) 858-5010  
Email: [rlinkletter@mainwoodspelletco.com](mailto:rlinkletter@mainwoodspelletco.com)
- 1.6 Backup Contact Person name and title: Scot Linkletter, Plant Manager
- 1.7 Backup Contact Person address and contact information:  
Address: 164 Harmony Rd.  
Athens, ME 04942
- Phone: (207) 654-2237                      Fax: \_\_\_\_\_  
Email: [scot@mainwoodspelletco.com](mailto:scot@mainwoodspelletco.com)

<sup>1</sup> Please note that all Applicants are required to complete the Renewable Energy Resources Eligibility Standard Application Form and all of the Appendices that apply to the Generation Unit or Owner or Operator that is the subject of this Form. Please omit Appendices that do not apply.

1.8 Name and Title of Authorized Representative (*i.e.*, the individual responsible for certifying the accuracy of all information contained in this form and associated appendices, and whose signature will appear on the application):

Robert Linkletter, President

Appendix A or B (as appropriate) completed and attached?  Yes  No  N/A

1.9 Authorized Representative address and contact information:

Address: 164 Harmony Rd.  
Athens, ME 04942

Phone: (207) 654-2237 Cell: (207) 858-5010

Email: [rlinkletter@mainewoodspelletco.com](mailto:rlinkletter@mainewoodspelletco.com)

1.10 Owner name and title: Athens Energy LLC

1.11 Owner address and contact information:

Address: 164 Harmony Rd.  
Athens, ME 04942

Phone: (207) 654-2237 Cell: (207) 858-5010

Email: [rlinkletter@mainewoodspelletco.com](mailto:rlinkletter@mainewoodspelletco.com)

1.12 Owner business organization type (check one):

Individual

Partnership

Corporation

Other: \_\_\_\_\_

1.13 Operator name and title: Athens Energy LLC

1.14 Operator address and contact information:

Address: 164 Harmony Rd.  
Athens, ME 04942

Phone: (207) 654-2237 Cell: (207) 858-5010

Email: [rlinkletter@mainewoodspelletco.com](mailto:rlinkletter@mainewoodspelletco.com)

1.15 Operator business organization type (check one):

Individual

Partnership

Corporation

Other: \_\_\_\_\_

**SECTION II: Generation Unit Information, Fuels, Energy Resources and Technologies**

2.1 ISO-NE Generation Unit Asset Identification Number or NEPOOL GIS Identification Number (either or both as applicable): Not yet assigned

2.2 Generation Unit Nameplate Capacity: 8.5 MW

2.3 Maximum Demonstrated Capacity: Not Yet Running to Demonstrate MW

2.4 Please indicate which of the following Eligible Renewable Energy Resources are used by the Generation Unit: (Check ALL that apply) – *per RES Regulations Section 5.0*

- Direct solar radiation
- The wind
- Movement of or the latent heat of the ocean
- The heat of the earth
- Small hydro facilities
- Biomass facilities using Eligible Biomass Fuels and maintaining compliance with all aspects of current air permits; Eligible Biomass Fuels may be co-fired with fossil fuels, provided that only the renewable energy fraction of production from multi-fuel facilities shall be considered eligible.
- Biomass facilities using unlisted biomass fuel
- Biomass facilities, multi-fueled or using fossil fuel co-firing
- Fuel cells using a renewable resource referenced in this section

2.5 If the box checked in Section 2.4 above is “Small hydro facilities”, please certify that the facility’s aggregate capacity does not exceed 30 MW. – *per RES Regulations Section 3.32*

← check this box to certify that the above statement is true

N/A or other (please explain) \_\_\_\_\_  
\_\_\_\_\_

2.6 If the box checked in Section 2.4 above is “Small hydro facilities”, please certify that the facility does not involve any new impoundment or diversion of water with an average salinity of twenty (20) parts per thousand or less. – *per RES Regulations Section 3.32*

← check this box to certify that the above statement is true

N/A or other (please explain) \_\_\_\_\_  
\_\_\_\_\_

2.7 If you checked one of the Biomass facilities boxes in Section 2.4 above, please respond to the following:

A. Please specify the fuel or fuels used or to be used in the Unit: Wood, Biomass, and Wood Waste - meaning forest products such as green wood chips, bark, limbs, tree tops, etc. This does not include any post-consumer waste.

B. Please complete and attach Appendix F, Eligible Biomass Fuel Source Plan.

Appendix F completed and attached?  Yes  No  N/A

- 2.8 Has the Generation Unit been certified as a Renewable Energy Resource for eligibility in another state's renewable portfolio standard?
- Yes       No      If yes, please attach a copy of that state's certifying order.
- Copy of State's certifying order attached?       Yes     No     N/A

**SECTION III: Commercial Operation Date**

Please provide documentation to support all claims and responses to the following questions:

- 3.1 Date Generation Unit first entered Commercial Operation: \_\_\_ \_\_\_ / \_\_\_ \_\_\_ / \_\_\_ \_\_\_ at the site. **The anticipated Commercial Operation Date is on or about 12/31/2015.**

If the commercial operation date is after December 31, 1997, please provide independent verification, such as the utility log or metering data, showing that the meter first spun after December 31, 1997. This is needed in order to verify that the facility qualifies as a New Renewable Energy Resource.

Documentation attached?       Yes     No     N/A

- 3.2 Is there an Existing Renewable Energy Resource located at the site of Generation Unit?

Yes  
 No

- 3.3 If the date entered in response to question 3.1 is earlier than December 31, 1997 or if you checked "Yes" in response to question 3.2 above, please complete Appendix C.

Appendix C completed and attached?       Yes     No     N/A

- 3.4 Was all or any part of the Generation Unit used on or before December 31, 1997 to generate electricity at any other site?

Yes  
 No

- 3.5 If you checked "Yes" to question 3.4 above, please specify the power production equipment used and the address where such power production equipment produced electricity (attach more detail if the space provided is not sufficient):

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**SECTION IV: Metering**

- 4.1 Please indicate how the Generation Unit's electrical energy output is verified (check all that apply):

ISO-NE Market Settlement System

- Self-reported to the NEPOOL GIS Administrator
  - Other (please specify below and see Appendix D: Eligibility for Aggregations):
- 

Appendix D completed and attached?  Yes  No  N/A

**SECTION V: Location**

5.1 Please check one of the following that apply to the Generation Unit:

- Grid Connected Generation
- Off-Grid Generation (not connected to a utility transmission or distribution system)
- Customer Sited Generation (interconnected on the end-use customer side of the retail electricity meter in such a manner that it displaces all or part of the metered consumption of the end-use customer)

5.2 Generation Unit address: 164 Harmony Rd.  
Athens, ME 04942  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

5.3 Please provide the Generation Unit’s geographic location information:

- A. Universal Transverse Mercator Coordinates: 447,824.52 m E 4,977,061.30 m N
- B. Longitude/Latitude: 44°56’42.18” / 69°39’40.97”

5.4 The Generation Unit located: (please check the appropriate box)

- In the NEPOOL control area
- In a control area adjacent to the NEPOOL control area
- In a control area other than NEPOOL which is not adjacent to the NEPOOL control area ← *If you checked this box, then the generator does not qualify for the RI RES – therefore, please do not complete/submit this form.*

5.5 If you checked “In a control area adjacent to the NEPOOL control area” in Section 5.4 above, please complete Appendix E.

Appendix E completed and attached?  Yes  No  N/A

## SECTION VI: Certification

- 6.1 Please attach documentation, using one of the applicable forms below, demonstrating the authority of the Authorized Representative indicated in Section 1.8 to certify and submit this Application.

### Corporations

If the Owner or Operator is a corporation, the Authorized Representative shall provide **either**:

- (a) Evidence of a board of directors vote granting authority to the Authorized Representative to execute the Renewable Energy Resources Eligibility Form, **or**
- (b) A certification from the Corporate Clerk or Secretary of the Corporation that the Authorized Representative is authorized to execute the Renewable Energy Resources Eligibility Form or is otherwise authorized to legally bind the corporation in like matters.

Evidence of Board Vote provided?  Yes  No  N/A

**Robert Linkletter, President, is the sole designated officer with authority to act on behalf of the Company. See Attachment A: Amended and Restated Limited Liability Company Agreement of Athens Energy LLC. Specifically see 7.6 Officers, in conjunction with Schedule B.**

Corporate Certification provided?  Yes  No  N/A

### Individuals

If the Owner or Operator is an individual, that individual shall complete and attach APPENDIX A, or a similar form of certification from the Owner or Operator, duly notarized, that certifies that the Authorized Representative has authority to execute the Renewable Energy Resources Eligibility Form.

Appendix A completed and attached?  Yes  No  N/A

### Non-Corporate Entities

(Proprietorships, Partnerships, Cooperatives, etc.) If the Owner or Operator is not an individual or a corporation, it shall complete and attach APPENDIX B or execute a resolution indicating that the Authorized Representative named in Section 1.8 has authority to execute the Renewable Energy Resources Eligibility Form or to otherwise legally bind the non-corporate entity in like matters.

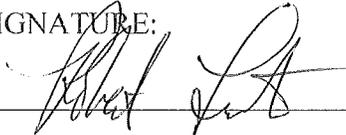
Appendix B completed and attached?  Yes  No  N/A

6.2 Authorized Representative Certification and Signature:

I hereby certify, under pains and penalties of perjury, that I have personally examined and am familiar with the information submitted herein and based upon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties, both civil and criminal, for submitting false information, including possible fines and punishment. My signature below certifies all information submitted on this Renewable Energy Resources Eligibility Form. The Renewable Energy Resources Eligibility Form includes the Standard Application Form and all required Appendices and attachments. I acknowledge that the Generation Unit is obligated to and will notify the Commission promptly in the event of a change in a generator's eligibility status (including, without limitation, the status of the air permits) and that when and if, in the Commission's opinion, after due consideration, there is a material change in the characteristics of a Generation Unit or its fuel stream that could alter its eligibility, such Generation Unit must be re-certified in accordance with Section 9.0 of the RES Regulations. I further acknowledge that the Generation Unit is obligated to and will file such quarterly or other reports as required by the Regulations and the Commission in its certification order. I understand that the Generation Unit will be immediately de-certified if it fails to file such reports.

Signature of Authorized Representative:

SIGNATURE:



DATE:

6-17-15

Bob Linkletter, President & Officer  
(Title)

**APPENDIX C**  
**(Revised 6/11/10)**  
**(Required of all Applicants with Generation Units at the Site of Existing**  
**Renewable Energy Resources)**

**STATE OF RHODE ISLAND**  
**PUBLIC UTILITIES COMMISSION**

**RENEWABLE ENERGY RESOURCES ELIGIBILITY FORM**

**Pursuant to the Renewable Energy Act**  
**Section 39-26-1 et. seq. of the General Laws of Rhode Island**

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If the Generation Unit: (1) first entered into commercial operation before December 31, 1997; or (2) is located at the exact site of an Existing Renewable Energy Resource, please complete the following and attach documentation, as necessary to support all responses:

- C.1 Is the Generating Unit seeking certification, either in whole or in part, as a New Renewable Energy Resource?  Yes  No
- C.2 If you answered "Yes" to question C.1, please complete the remainder of Appendix C. If you answered "No" and are seeking certification entirely as an Existing Renewable Energy Resource, you do NOT need to complete the remainder of Appendix C.
- C.3 If an Existing Renewable Energy Resource is/was located at the site, has such Existing Renewable Energy Resource been retired and replaced with the new Generation Unit at the same site?  Yes  No
- C.4 Is the Generation Unit a Repowered Generation Unit (as defined in Section 3.29 of the RES Regulations) which uses Eligible Renewable Energy Resources and which first entered commercial operation after December 31, 1997 at the site of an existing Generation Unit?  Yes  No
- C.5 If you checked "Yes" to question C.4 above, please provide documentation to support that the entire output of the Repowered Generation Unit first entered commercial operation after December 31, 1997.
- C.6 Is the Generation Unit a multi-fuel facility in which an Eligible Biomass Fuel is first co-fired with fossil fuels after December 31, 1997?  Yes  No

- C.7 If you checked “Yes” to question C.6 above, please provide documentation to support that the renewable energy fraction of the energy output first occurred after December 31, 1997.
- C.8 Is the Generation Unit an Existing Renewable Energy Resource other than an Intermittent Resource (as defined in Sections 3.10 and 3.15 of the RES Regulations)?  Yes  No
- C.9 If you checked “Yes” to question C.8 above, please attach evidence of completed capital investments after December 31, 1997 attributable to efficiency improvements or additions of capacity that are sufficient to, were intended to, and can be demonstrated to increase annual electricity output in excess of ten percent (10%). As specified in Section 3.23.v of the RES Regulations, the determination of incremental production shall not be based on any operational changes at such facility **not directly** associated with the efficiency improvements or additions of capacity.

Please provide the single proposed percentage of production to be deemed incremental, attributable to the efficiency improvements or additions of capacity placed in service after December 31, 1997. Please make this calculation by comparing actual electrical output over the three calendar years 1995-1997 (the “Historical Generation Baseline”) with the actual output following the improvements. The incremental production above the Historical Generation Baseline will be considered “New” generation for the purposes of RES. Please give the percentage of the facility’s total output that qualifies as such to be considered “New” generation.

- C.10 Is the Generating Unit an Existing Renewable Energy Resource that is an Intermittent Resource?  Yes  No
- C.11 If you checked “Yes” to question C.10 above, please attach evidence of completed capital investments after December 31, 1997 attributable to efficiency improvements or additions of capacity that are sufficient to, were intended to, and have demonstrated on a normalized basis to increase annual electricity output in excess of ten percent (10%). The determination of incremental production shall not be based on any operational changes at such facility **not directly** associated with the efficiency improvements or additions of capacity. In no event shall any production that would have existed during the Historical Generation Baseline period in the absence of the efficiency improvements or additions to capacity be considered incremental production. Please refer to Section 3.23.vi of the RES Regulations for further guidance.
- C.12 If you checked “Yes” to C.10, provide the single proposed percentage of production to be deemed incremental, attributable to the efficiency improvements or additions of capacity placed in service after December 31, 1997. The incremental production above the Historical Generation Baseline will be considered “New” generation for the purposes of RES. Please make this calculation by comparing actual monthly electrical output over the three calendar years 1995-1997 (the “Historical Generation Baseline”) with the actual output following the improvements on a normalized basis. Please provide back-up

information sufficient for the Commission to make a determination of this incremental production percentage.

For example, for small hydro facilities, please use historical river flow data to create a monthly normalized comparison (e.g. average MWh produced per cubic foot/second of river flow for each month) between actual output values post-improvements with the Historical Generation Baseline. For solar and wind facilities, please use historical solar irradiation, wind flow, or other applicable data to normalize the facility's current production against the Historical Generation Baseline.

C.13 If you checked “no” to both C.3 and C.4 above, please complete the following:

- a. Was the Existing Renewable Energy Resource located at the exact site at any time during calendar years 1995 through 1997?                    **N/A**     Yes     No
  
- b. If you checked “yes” in Subsection (a) above, please provide the Generation Unit Asset Identification Number and the average annual electrical production (MWhs) for the three calendar years 1995 through 1997, or for the first 36 months after the Commercial Operation Date if that date is after December 31, 1994, for each such Generation Unit.
  
- c. Please attach a copy of the derivation of the average provided in (b) above, along with documentation support (such as ISO reports) for the information provided in Subsection (b) above. Data must be consistent with quantities used for ISO Market Settlement System.

**APPENDIX F**  
**(Revised 6/11/10)**  
**Eligible Biomass Fuel Source Plan**  
**(Required of all Applicants Proposing to Use An Eligible Biomass Fuel)**

**STATE OF RHODE ISLAND PUBLIC UTILITIES COMMISSION**  
**Part of Application for Certificate of Eligibility**  
**RENEWABLE ENERGY RESOURCES ELIGIBILITY FORM**  
**Pursuant to the Renewable Energy Act**  
**Section 39-26-1 et. seq. of the General Laws of Rhode Island**

**Note to Applicants:** Please refer to the RES Certification Filing Methodology Guide posted on the Commission's web site ([www.ripuc.org/utilityinfo/res.html](http://www.ripuc.org/utilityinfo/res.html)) for information, templates and suggestions regarding the types and levels of detail appropriate for responses to specific application items requested below. Also, please see Section 6.9 of the RES Regulations for additional details on specific requirements.

The phrase "Eligible Biomass Fuel" (per RES Regulations Section 3.7) means fuel sources including brush, stumps, lumber ends and trimmings, wood pallets, bark, wood chips, shavings, slash, yard trimmings, site clearing waste, wood packaging, and other clean wood that is not mixed with other unsorted solid wastes<sup>2</sup>; agricultural waste, food and vegetative material; energy crops; landfill methane<sup>3</sup> or biogas<sup>4</sup>, provided that such gas is collected and conveyed directly to the Generation Unit without use of facilities used as common carriers of natural gas; or neat biodiesel and other neat liquid fuels that are derived from such fuel sources.

In determining if an Eligible Biomass Generation Unit shall be certified, the Commission will consider if the fuel source plan can reasonably be expected to ensure that only Eligible Biomass Fuels will be used, and in the case of co-firing ensure that only that proportion of generation attributable to an Eligible Biomass Fuel be eligible. Certification will not be granted to those Generation Units with fuel source plans the Commission deems inadequate for these purposes.

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<sup>2</sup> Generation Units using wood sources other than those listed above may make application, as part of the required fuel source plan described in Section 6.9 of the RES Regulations, for the Commission to approve a particular wood source as "clean wood." The burden will be on the applicant to demonstrate that the wood source is at least as clean as those listed in the legislation. Wood sources containing resins, glues, laminates, paints, preservatives, or other treatments that would combust or off-gas, or mixed with any other material that would burn, melt, or create other residue aside from wood ash, will not be approved as clean wood.

<sup>3</sup> Landfill gas, which is an Eligible Biomass Fuel, means only that gas recovered from inside a landfill and resulting from the natural decomposition of waste, and that would otherwise be vented or flared as part of the landfill's normal operation if not used as a fuel source.

<sup>4</sup> Gas resulting from the anaerobic digestion of sewage or manure is considered to be a type of biogas, and therefore an Eligible Biomass Fuel that has been fully separated from the waste stream.

This Appendix must be attached to the front of Applicant’s Fuel Source Plan required for Generating Units proposing to use an Eligible Biomass Fuel (per Section 6.9 of RES Regulations).

F.1 The attached Fuel Source Plan includes a detailed description of the type of Eligible Biomass Fuel to be used at the Generation Unit.

Detailed description attached?  Yes  No  N/A

Comments: The facility will only burn woody biomass and no post-consumer waste or other fuels as described in the attached plan.

F.2 If the proposed fuel is “other clean wood,” the Fuel Source Plan should include any further substantiation to demonstrate why the fuel source should be considered as clean as those clean wood sources listed in the legislation.

Further substantiation attached?  Yes  No  N/A

Comments: \_\_\_\_\_  
\_\_\_\_\_

F.3 In the case of co-firing with ineligible fuels, the Fuel Source Plan must include a description of (a) how such co-firing will occur; (b) how the relative amounts of Eligible Biomass Fuel and ineligible fuel will be measured; and (c) how the eligible portion of generation output will be calculated. Such calculations shall be based on the energy content of all of the proposed fuels used.

Description attached?  Yes  No  N/A

Comments: \_\_\_\_\_  
\_\_\_\_\_

F.4 The Fuel Source Plan must provide a description of what measures will be taken to ensure that only the Eligible Biomass Fuel are used, examples of which may include: standard operating protocols or procedures that will be implemented at the Generation Unit, contracts with fuel suppliers, testing or sampling regimes.

Description provided?  Yes  No  N/A

Comments: Athens Energy will only purchase its woody biomass fuel from one supplier, which is a Certified Master Logger ensuring sustainable harvesting practices.

F.5 Please include in the Fuel Source Plan an acknowledgement that the fuels stored at or brought to the Generation Unit will only be either Eligible Biomass Fuels or fossil fuels used for co-firing and that Biomass Fuels not deemed eligible will not be allowed at the premises of the certified Generation Unit. And please check the following box to certify that this statement is true.

← check this box to certify that the above statement is true  
 N/A or other (please explain) \_\_\_\_\_

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F.6 If the proposed fuel includes recycled wood waste, please submit documentation that such fuel meets the definition of Eligible Biomass Fuel and also meets material separation, storage, or handling standards acceptable to the Commission and furthermore consistent with the RES Regulations.

Documentation attached?  Yes  No  N/A

Comments: \_\_\_\_\_

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F.7 Please certify that you will file all reports and other information necessary to enable the Commission to verify the on-going eligibility of the renewable energy generators pursuant to Section 6.3 of the RES Regulations. Specifically, RES Regulations Section 6.3(i) states that Renewable Energy Resources of the type that combust fuel to generate electricity must file quarterly reports due 60 days after the end of each quarter on the fuel stream used during the quarter. Instructions and filing documents for the quarterly reports can be found on the Commissions website or can be furnished upon request.

← check this box to certify that the above statement is true  
 N/A or other (please explain) \_\_\_\_\_

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F.8 Please attach a copy of the Generation Unit's Valid Air Permit or equivalent authorization.

Valid Air Permit or equivalent attached?  Yes  No  N/A

Comments: \_\_\_\_\_

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F.9 Effective date of Valid Air Permit or equivalent authorization:

05 /13 /2015

F.10 State or jurisdiction issuing Valid Air Permit or equivalent authorization:  
State of Maine, Department of Environmental Protection, Bureau of Air Quality

## Athens Energy LLC Fuel Source Plan

### I. Class I RI RPS Requirement

Eligible Biomass Fuel (per RES Regulations Section 3.7): means fuel sources including brush, stumps, lumber ends and trimmings, wood pallets, bark, wood chips, shavings, slash, yard trimmings, site clearing waste, wood packaging, and other clean wood that is not mixed with other unsorted solid wastes; agricultural waste, food and vegetative material; energy crops; landfill methane or biogas, provided that such gas is collected and conveyed directly to the Generation Unit without use of facilities used as common carriers of natural gas; or neat biodiesel and other neat liquid fuels that are derived from such fuel sources.

### II. State Regulatory Fuel Use Standard

The Maine Department of Environmental Protection, Bureau of Air Quality has granted Athens Energy LLC construction and operation license **A-989-71-E-A**. See **Attachment B**. This license requires that the facility only burn “wood/biomass materials.” See Condition 22(A) This is defined in the license as:

“Wood, Biomass, and Wood Waste: For the purposes of this license, the terms “wood”, “biomass”, or “wood waste” all mean **forest products such as green wood chips, bark, limbs, tree tops, etc.** These terms **do not include any post-consumer products.**”

The State of Maine’s fuel requirement for Athens Energy correlates with RI’s Eligible Biomass Standards and prohibits the use of other non-conforming fuels such as oil or gas and post-consumer waste wood.

Athens Energy will be required to maintain records of fuel usage on a rolling 12-month basis and submit semi-annual and annual certifications to the State of Maine and will be periodically inspected by the State.

### III. Athens Energy Wood Fuel Procurement

Athens Energy will only burn Woody Biomass fuel in its furnace that meets both the standard of RI RES Regulation Section 3.7 and its Maine Air Emissions License. **All woody biomass fuel for use in the furnace at Athens Energy will be procured through Linkletter & Sons, Inc.** of Athens, Maine, a **Certified Northeast Master Logger**.

In accordance with RI RES Regulation Section 6.3 Athens Energy will file the required quarterly reports due 60 days after the end of each quarter on the fuel stream used during the quarter. Such reports shall include the amounts, energy content, and other details of all fuels used and energy generated, sufficient to allow the Commission to determine the resource’s eligibility under the

Renewable Energy Act and, in the case of plants that co-fire an Eligible Biomass Fuel with a fossil fuel, to allow the Commission to determine or verify what amount of the Renewable Energy Resource's generation during that quarter is certified as being eligible.

#### **IV. Master Logger Certification (MLC) program**

Provided in this section is a description of the Master Logger program and its harvesting practices, which will help assure compliance with RI's RPS standard.

Linkletter & Sons, Inc. also maintains a Registered Forester on Retainer.

##### **1. Introduction and Background**

Linkletter and Sons, Inc, maintains its Master Logger Certification which operates under the Trust to Conserve Northeast Forestlands.

Maine was the first place in the world with a point-of-harvest Master Logger Certification (MLC) program, offering independent third party certification of logging companies' harvesting practices. The certification system is built around standards that have been cross-referenced to all of the world's major green certification systems, that have been adopted by several other North American states and Canadian provinces, and that have been awarded international recognition by receiving the world's first SmartLogging certificate from the Rainforest Alliance. On October 1, 2007 the Maine MLC program and the Southern New England MLC program combined efforts to bring the Northeast Master Logger Certification Program (NEMLC) to loggers in Maine, New Hampshire, Massachusetts, Connecticut, Rhode Island, Vermont and New York.

In 2005, the NEMLC program was recognized by the Rainforest Alliance program with the first ever SmartLogging certificate. This certificate represents an independent global recognition of the integrity of the Master Logger standard. The program has also been recognized as a source of responsibly harvested forest products throughout the forest products industry and has achieved the FSC standard for Controlled Wood and for Chain of Custody when Master Logger harvests are conducted on FSC-certified land.

##### **2. How the Program Works**

The process begins with a company interview, where the candidate company is oriented to the NEMLC standard and the concept of third party certification and the company and the opportunity to sketch out a profile of their history, current configuration, professional ethics, strategies for continuous improvement and business goals. Field verifiers then visit actual harvest sites to determine whether candidates for Northeast Master Logger Certification are meeting and exceeding the standards that are required for certification. Their findings are submitted to an independent national board that makes the final decision on whether a company will be certified.

To remain a Northeast Master Logger, each company must be recertified regularly, based on an assessment conducted by the independent NEMLC Certification Board. There are also random audits between re-certifications, a continuous improvement process for upgrading skills within the company, and partnership with other forest professionals and their associations.

**Appendix F, Question 8 Generation Unit's Valid Air Permit**



PAUL R. LEPAGE  
GOVERNOR

PATRICIA W. AHO  
COMMISSIONER

**Maine Woods Pellet Company, LLC,  
Athens Capital Holdings, LLC, &  
Athens Energy LLC  
Somerset County  
Athens, Maine  
A-989-71-E-A**

**Departmental  
Findings of Fact and Order  
Air Emission License  
Amendment #1**

**FINDINGS OF FACT**

After review of the air emissions license amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes Annotated (M.R.S.A.), §344 and §590, the Maine Department of Environmental Protection (Department) finds the following facts:

**I. REGISTRATION**

**A. Introduction**

Maine Woods Pellet Company, LLC (MWP) was issued Air Emission License A-989-71-D-R/M on June 4, 2013 permitting the operation of emission sources associated with their wood pellet manufacturing facility.

Along with MWP, Athens Capital Holdings, LLC and Athens Energy LLC have requested to be added to this air emission license as co-applicants. Sufficient documentation has been provided to the Department to demonstrate Title, Right, or Interest for all three companies. Therefore, wherever "MWP" is used throughout this document, it is intended to refer to all three companies equally and jointly.

MWP has requested an amendment to their license in order to construct and operate a cogeneration facility and additional pellet processing equipment in support of the existing pellet production facility.

MWP has further requested that the particulate matter emission limits for the existing dryer be amended to include the condensable fraction not previously accounted for.

The equipment addressed in this license is located at 164 Harmony Road, Athens, Maine.

B. Emission Equipment

The following new equipment is addressed in this air emission license:

**Furnace**

<u>Equipment</u>	<u>Maximum Capacity (MMBtu/hr)</u>	<u>Maximum Firing Rate (ton/hr)</u>	<u>Fuel Type, % sulfur</u>	<u>Date of Manuf.</u>	<u>Stack #</u>
Furnace #1	149	16.6	biomass, negligible	2015	3

**Process Equipment**

<u>Equipment</u>	<u>Production Rate</u>	<u>Pollution Control Equipment</u>	<u>Stack #</u>
Pre-Dryer #1	6.5 ODT/hr	multi-cyclone	3

C. Definitions

Continuously: For purposes of the periodic monitoring requirements in this license, “continuously” means at least three (3) data points in each full operating hour with at least one (1) data point in each half-hour period.

Wood, Biomass, and Wood Waste: For the purposes of this license, the terms “wood”, “biomass”, or “wood waste” all mean forest products such as green wood chips, bark, limbs, tree tops, etc. These terms do not include any post-consumer products.

D. Application Classification

The installation of new emission units at an existing minor source is considered a major modification based on whether or not expected emission increases from the new equipment exceed the “Significant Emission” levels as defined in 06-096 CMR 100. The emission increases are determined by the maximum future license annual emissions for the new emission units, as follows:

<u>Pollutant</u>	<u>Max. Future License (TPY)</u>	<u>Significant Emission Levels</u>
PM, PM <sub>10</sub> , PM <sub>2.5</sub>	68.9	100
SO <sub>2</sub>	15.2	100
NO <sub>x</sub>	97.6	100
CO	243.5	100
VOC	49.2	50
CO <sub>2</sub> e	121,874.6	100,000

Therefore, the modification is major for carbon monoxide (CO) and carbon dioxide equivalent (CO<sub>2</sub>e).

MWP shall apply for a Part 70 license under Part 70 Air Emission License Regulation, 06-096 CMR 140, Section 3 (as amended), within 12 months of commencing operation, as provided in 40 CFR Part 70.5.

## II. BEST PRACTICAL TREATMENT (BPT)

### A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

### B. Process Description

MWP plans to construct a cogeneration facility and install additional wood pellet processing equipment. The project consists of a 149 MMBtu/hr thermal oil furnace (Furnace #1) which fires biomass (primarily wood and wood waste such as bark). The furnace will heat thermal oil that will provide the energy to run an eight (8) megawatt Organic Rankin Cycle (ORC) electrical generation turbine. The ORC process is a closed loop cycle in which the organic working medium (thermal oil) is pre-heated in a regenerator/pre-heater and is then vaporized through an exhaust gas heat exchanger. The vapor is expanded in a turbine, driving a generator to produce electricity. The organic

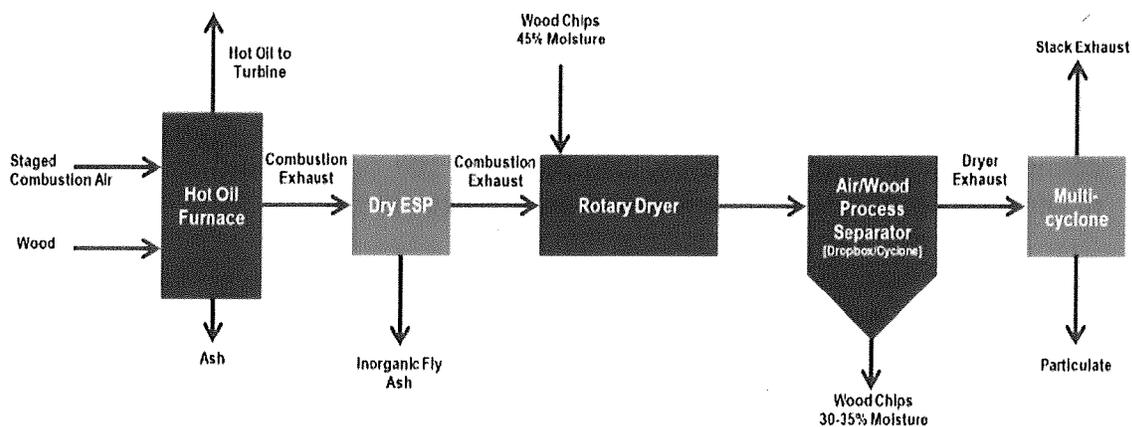
working medium is then passed through the regenerator that is used to pre-heat the organic liquid prior to vaporization.

The electricity produced will be used in the facility's wood pellet manufacturing operation and/or sold to the local utility.

The combustion gases from the furnace will pass through an electrostatic precipitator (ESP) to remove particulate matter before being used to heat a direct-contact rotary drum dryer (Pre-Dryer #1) designed to partially dry the wood to be used in the pellet manufacturing process. Pre-Dryer #1 will not remove all of the moisture necessary to process the pellets and will not replace MWP's previously licensed Dryer #1.

After Pre-Dryer #1, the exhaust stream will pass through a cyclone to separate the larger material from the gas stream and then through a multi-cyclone to collect additional particulate matter prior to exhausting to the atmosphere through a 125-foot stack (Stack #3).

Below is a simplified block diagram of the process.



### C. Furnace #1 and Pre-Dryer #1

MWP is proposing to install Furnace #1 which will heat thermal oil used to drive a turbine and produce electricity. It will have a maximum heat input capacity of 149 MMBtu/hr firing biomass which includes wood and wood waste such as bark. Furnace #1 will fire "green" fuel with an assumed moisture content of 50%.

As part of this project, MWP also proposes the installation of Pre-Dryer #1 which is a single-pass, direct-contact wood dryer with a maximum hourly throughput rate of approximately 6.5 oven-dried ton (ODT) per hour. The heat source for the pre-dryer will be the exhaust gases from Furnace #1.

MWP may operate Furnace #1 and the associated electrical generating equipment without processing chips in Pre-Dryer #1 as long as emissions continue to be exhausted through all permitted control equipment and Stack #3.

1. 40 CFR Part 63, Subpart JJJJJ

Furnace #1 is not subject to 40 CFR Part 63, Subpart JJJJJ, *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*, which is applicable to all new, reconstructed, and existing boilers firing coal, biomass, or oil located at an area source of hazardous air pollutants (HAPs). MWP is an area source for HAPs, with the facility's potential to emit less than 10 tons per year of a single HAP and 25 tons per year combined HAPs.

The definition of boiler in 40 CFR Part 63, Subpart JJJJJ states:

*Boiler means an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam or hot water. Controlled flame combustion refers to a steady-state, or near steady-state, process wherein fuel and/or oxidizer feed rates are controlled. Waste heat boilers are excluded from this definition.*

Furnace #1 does not heat water to recover thermal energy; therefore, 40 CFR Part 63, Subpart JJJJJ is not applicable to this unit since it is not considered a boiler.

2. 40 CFR Part 60, Subpart Db

New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units* applies to steam generating units that commence construction, modification, or reconstruction after June 19, 1984 and have a heat input capacity greater than 100 MMBtu/hr.

The definition of steam generating unit in 40 CFR Part 60, subpart Db states:

*Steam generating unit means a device that combusts any fuel or byproduct/waste and produces steam or heats water or heats any heat transfer medium. This term includes any municipal-type solid waste incinerator with a heat recovery steam generating unit or any steam generating unit that combusts fuel and is part of a cogeneration*

*system or a combined cycle system. This term does not include process heaters as they are defined in this subpart.*

A process heater is defined as:

*Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.*

The exhaust from Furnace #1 is used to remove moisture from wood chips. This is considered a physical and separation process and not a chemical reaction. Therefore, Furnace #1 does not meet the definition of a process heater. However, Furnace #1 transfers heat to a thermal oil which is considered a heat transfer medium. As such, Furnace #1 meets the definition of a steam generating unit and is subject to the requirements of 40 CFR Part 60, Subpart Db.

Subpart Db contains applicable emission standards for particulate matter and opacity. These standards apply only to Furnace #1 and not to the combined emissions of Furnace #1 and Pre-Dryer #1 unless the standards have been streamlined to the more stringent requirement.

### 3. BACT (Best Available Control Technology) Findings

The data obtained from the Reasonably Available Control Technology (RACT)/BACT/ Lowest Achievable Emission Rate (LAER) Clearinghouse (RBLC) and the review of licenses from similar sources, along with information on the economic impact, technical feasibility, and environmental impact of various control options was used to determine the available control technologies and corresponding levels of control for emissions from Furnace #1 and Pre-Dryer #1.

The following summarizes the BACT findings for Furnace #1 and Pre-Dryer #1:

#### a. PM/PM<sub>10</sub>/PM<sub>2.5</sub>

The principal components of the particulate matter (PM) emissions from the cogeneration project include filterable and condensable organic PM from the wood drying process in Pre-Dryer #1 and inorganic fly ash and unburned carbon resulting from incomplete combustion in Furnace #1. The organic portion of the PM emissions leave the dryer stack as vapor but condense at normal atmospheric temperature to form liquid particles or mist that can create a visible haze. Quantities emitted are dependent on wood species, dryer temperature, and other factors including season of the year, time between logging and processing, and wood storage time.

Potential PM controls for the cogeneration project consist of add-on controls, good combustion and operating practices, or a combination of options. The evaluation of add-on controls for this project included baghouses, thermal oxidizers, electrostatic precipitators (ESPs), wet electrostatic precipitators (WESPs), and a multiclone system.

Baghouses consist of a number of fabric bags placed in parallel that collect particulate matter on the surface of the filter bags as the exhaust stream passes through the fabric membrane. The collected particulate is periodically dislodged from the bags' surface to collection hoppers via short blasts of high-pressure air, physical agitation of the bags, or by reversing the gas flow. Baghouse systems are capable of PM collection efficiencies greater than 98%. Baghouses can theoretically control PM emissions from wood dryers, but moisture considerations and the high organic content may cause the bags to plug up or "blind" resulting in lower gas flow, greater pressure drop, and a reduction in PM control efficiency. The gas stream's high moisture content in conjunction with the heavy molecular weight organic content of the gas stream cause baghouses to be technically infeasible for this project.

Thermal oxidizers destroy condensable PM by burning the exhaust gas at high temperatures. Regenerative thermal oxidizers (RTOs) preheat the inlet emission stream with heat recovered from the incineration exhaust gases. The inlet gas stream is passed through preheated ceramic media and an auxiliary gas burner is used to reach temperatures between 1450°F and 1600°F at a specific residence time. The combusted gas exhaust then goes through a cooled ceramic bed where heat is extracted. The estimated annualized cost for an RTO to control roughly 61,500 scfm of exhaust would be \$1,261,000. The RTO would only control condensable PM, of which Furnace #1 and Pre-Dryer #1 have estimated uncontrolled emissions of 25 ton/year. This would conservatively result in a cost of \$50,460 per ton of condensable PM controlled. Therefore, the installation of a thermal oxidizer is not economically feasible for this project.

ESPs work by charging particles in the exhaust stream with a high voltage, oppositely charging a collection surface where the particles accumulate, removing the collected dust by a rapping process, and collecting the dust in hoppers. Dry ESPs work well in exhaust streams with minimal organic particulate. Organic particulate tends to adhere to the positively charged collection surface, subsequently requiring additional rapping to dislodge the particulate and reducing control efficiency. Dry ESPs are not recommended for removing moist particles or those likely to adhere to the collection surface. A dry ESP installed between Furnace #1 and Pre-Dryer #1 would provide the maximum control of PM created from combustion. In addition, the installation of a dry ESP in this configuration would also serve as a process quality control measure to minimize the ash that

may be picked up by the wood chips in the pre-dryer and subsequently incorporated into the final wood pellet product. The use of a dry ESP after Furnace #1 and prior to Pre-Dryer #1 has been determined to be feasible and has been selected as part of the BACT strategy for the proposed cogeneration project.

WESPs utilize a pre-quench to cool and saturate the gases prior to entering the ESP. WESPs collect only particles and droplets that can be electrostatically charged and consume significant water quantities during operation. The resulting effluent requires treatment and must be discharged to a solids-removing clarifying system prior to final disposal. The effluent may require additional sludge removal, pH adjustment, and/or additional treatment to remove dissolved solids. MWP does not currently have the onsite capability to treat the effluent produced from a WESP. The estimated annualized cost for a WESP alone (not including a wastewater treatment system) to control roughly 61,500 scfm of exhaust would be \$1,783,500. This would conservatively result in a cost of \$16,000 per ton of PM controlled and a cost of \$69,130 per ton for control of emissions in excess of what can be achieved by multicyclones. This does not take into account the environmental impacts of wastewater production. Therefore, the installation of a WESP is not economically feasible for this project.

Cyclones, normally an integral part of rotary drum biomass dryers, are a very common particulate control device used in many applications. Cyclones utilize centripetal force to separate particles from gas streams, especially where relatively large particles need to be collected. Cyclones are commonly constructed of sheet metal, have relatively low capital cost, low operating costs, and no moving parts. Multiclones are smaller diameter cyclone units operating in parallel or in series and designed to achieve high efficiency PM collection using the same operational principals as the single cyclone. The use of a cyclone/multiclone system after Pre-Dryer #1 has been determined to be feasible and has been selected as part of the BACT strategy for the proposed cogeneration project.

BACT for PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions from Furnace #1 and Pre-Dryer #1 is the use of an ESP after Furnace #1, a cyclone/multiclone system after Pre-Dryer #1, an annual operation limit of 8,200 hr/year for Furnace #1, and an emission limit of 16.8 lb/hr from Stack #3. Furnace #1 is also subject to a filterable PM emission limit of 0.030 lb/MMBtu per 40 CFR Part 60, Subpart Db.

The exhaust from Stack #3 is a combination of PM/PM<sub>10</sub>/PM<sub>2.5</sub> emissions from both fuel burning and process emissions. The BACT PM/PM<sub>10</sub>/PM<sub>2.5</sub> limits above are determined to be more stringent than the combination of the particulate matter limits found in *Fuel Burning Equipment Particulate Emission Standard* 06-096 CMR 103 and *General Process Source Particulate Emission Standard* 06-096

CMR 105 and are therefore the only PM/PM<sub>10</sub>/PM<sub>2.5</sub> limits contained in this license.

b. SO<sub>2</sub>

Sulfur dioxide (SO<sub>2</sub>) is formed from the combustion of sulfur present in the fuel. Control options for SO<sub>2</sub> include removing the sulfur from the flue gas by adding a caustic scrubbing solution or restricting the sulfur content of the fuel. The wood fuel fired in Furnace #1 is inherently a low sulfur fuel, with only trace amounts of sulfur available to combine with oxygen in the combustion process. Additional sulfur controls are not justified for this project.

BACT for SO<sub>2</sub> emissions from Furnace #1 and Pre-Dryer #1 is the firing of clean wood/biomass materials including wood chips, bark, shavings, and sawdust, an annual operation limit of 8,200 hr/year for Furnace #1, and emission limits of 3.7 lb/hr from Stack #3.

c. NO<sub>x</sub>

Nitrogen oxide (NO<sub>x</sub>) is a product of combustion and generated from fuel NO<sub>x</sub>, thermal NO<sub>x</sub>, and prompt NO<sub>x</sub>. Oxidation radicals near the combustion flame forms prompt NO<sub>x</sub> in insignificant amounts. Reducing NO<sub>x</sub> formation from the two other NO<sub>x</sub> generating mechanisms includes firing a low nitrogen content fuel to minimize fuel NO<sub>x</sub> and maintaining combustion temperatures below 2000°F to minimize thermal NO<sub>x</sub>. Potential control technologies for NO<sub>x</sub> include selective catalytic reduction (SCR), selective non-catalytic reduction (SNCR), water/steam injection, and Flue Gas Recirculation (FGR).

SCR reduces NO<sub>x</sub> emissions through the injection of ammonia in the gas exhaust stream in the presence of a catalyst to produce nitrogen and water. The reduction is considered “selective” because the catalyst selectively targets NO<sub>x</sub> reduction in the presence of ammonia. The installation of an SCR system prior to Pre-Dryer #1 is not technically feasible, because unreacted ammonia emissions (ammonia slip) in the exhaust gas has the potential to foul the pre-dryer through the precipitation of ammonia salts which would alter the wood chip pH and hinder pellet bonding. An SCR system cannot be installed after the pre-dryer since the effectiveness of an SCR system is directly dependent upon the exhaust temperature. The ideal exhaust temperature range for SCR operation is between 550°F and 750°F. With the expected exhaust temperature from Pre-Dryer #1 of 180°F, an SCR system is not technically feasible without the installation of an exhaust re-heat system. The installation of an exhaust re-heat system would require additional fuel input to the system and subsequently increase NO<sub>x</sub> emissions. The technical limitations as well as the energy and environmental impacts associated with an SCR system make it infeasible for this project.

SNCR reduces  $\text{NO}_x$  to nitrogen and water by reacting the exhaust gas with a reagent such as ammonia or urea, similar to SCR. However, the use of a catalyst is negated when the chemical reaction takes place at temperatures ranging between 1600°F and 2100°F. The  $\text{NO}_x$  reduction efficiency decreases rapidly at temperatures outside this temperature window. Operation below this temperature range results in emissions of unreacted ammonia (a criteria pollutant). Even under optimal conditions, there will be some amount of unreacted ammonia that passes through to the pre-dryer. As for SCR, the installation of an SNCR system prior to Pre-Dryer #1 is not technically feasible, because unreacted ammonia can foul the pre-dryer and have significant negative effects on the pelletizing process. Exhaust temperatures from the pre-dryer will be well below the required temperature range. Therefore, the use of SNCR for control of  $\text{NO}_x$  is determined to be technically infeasible for this project.

Water/steam injection is the process of injecting water or steam into the combustion chamber to act as a thermal ballast in the combustion process. This lowers the combustion temperature, minimizing the formation of thermal  $\text{NO}_x$ . However, introducing additional moisture into a process designed to dry material would be counterproductive to the purpose of the pre-dryer. Therefore, water/steam injection has been determined to be technically infeasible for this project.

Flue gas recirculation (FGR) is a combustion design technique used to reduce the temperature of combustion, in turn reducing thermal  $\text{NO}_x$  formation. A portion of the flue gas is extracted and injected back into the furnace. This reduces  $\text{NO}_x$  emissions by two mechanisms; primarily, the recirculated gas acts as a diluent to reduce combustion temperatures, lowering peak flame temperatures, thus suppressing thermal  $\text{NO}_x$ . In addition, the recirculated flue gas lowers the average oxygen concentration in the combustion zone, which lowers the oxygen available to react with nitrogen to form  $\text{NO}_x$ . The use of FGR in Furnace #1 has been determined to be feasible and has been selected as part of the BACT strategy for the proposed cogeneration project

BACT for  $\text{NO}_x$  emissions from Furnace #1 and Pre-Dryer #1 is the use of FGR in Furnace #1, an annual operation limit of 8,200 hr/year for Furnace #1, and an emission limit of 23.8 lb/hr from Stack #3.

d. CO

Carbon monoxide (CO) emissions are a result of incomplete combustion, caused by conditions such as insufficient residence time or limited oxygen availability. Potential control strategies for CO emissions from units with burners are typically minimized by good combustion, although oxidation catalyst systems have been used on larger units. Thermal oxidation is also an option for add-on CO control.

An oxidation catalyst lowers the activation energy needed for CO to react with available oxygen in the exhaust to produce CO<sub>2</sub>. In order to prevent the occurrence of particulate contamination in a biomass system, the oxidation catalyst would need to be located downstream of the ESP. However, the process exhaust gas would then need to be preheated prior to contact with the catalyst bed. The operating temperature window of an oxidation catalyst is approximately 4,000°F – 11,000°F. The cost of the oxidation catalyst, the associated need for a preheat burner, and the biomass plugging potential does not result in an oxidation catalyst as a feasible option for this project.

Thermal oxidation reduces CO emissions in the flue gas with high temperature post combustion. The application of a thermal oxidizer would require additional fuel usage, would result in additional secondary emissions, and would have a large economic impact on the project. Therefore, thermal oxidation for CO control is not a feasible option for this project.

Good combustion efficiency and proper equipment operation and maintenance incorporate various techniques to minimize CO emissions. Proper combustion techniques include maintaining optimum combustion conditions within the system via optimization of residence time, temperature, and mixing. The use of an oxygen trim control system to maintain adequate and optimum combustion air-to-fuel ratios is considered part of good combustion techniques.

BACT for CO emissions from Furnace #1 and Pre-Dryer #1 is the use of good combustion techniques, proper equipment maintenance, an annual operation limit of 8,200 hr/year for Furnace #1, and an emission limit of 59.4 lb/hr from Stack #3.

e. VOC

Volatile Organic Compounds (VOCs) are generated in Furnace #1 as a result of incomplete combustion and in Pre-Dryer #1 from the evaporation of the naturally occurring VOCs in the wood. Quantities of VOCs emitted are dependent on wood species and operating parameters such as temperature, residence time, and oxygen present. During the drying process, the water in the wood chip material is driven off first. If additional heat is applied after the water is removed, the temperature of the wood subsequently increases, and the VOCs in the wood begin to be liberated. Wood chips must be dried to a moisture content of 8-10% prior to the pellet forming process. Pre-Dryer #1 is designed to reduce the moisture of the chips from approximately 45% down to 30-35%. VOC emissions from Pre-Dryer #1 are estimated to be relatively low at 0.76 lb/ODT (4.9 lb/hr) as significant water will still be present in the chips.

The options for controlling VOCs from high concentration VOC gas streams include thermal oxidation (RTO), wet electrostatic precipitators (WESP), and adsorption systems (wet scrubbers).

Thermal oxidizers destroy VOC by burning them at high temperatures reducing them to water and CO<sub>2</sub>. As discussed above for PM, the average annualized cost for an RTO to control 61,500 scfm of exhaust would be about \$1,261,000. The cost of controlling VOCs from this project would be \$25,316/ton and is therefore determined to be economically infeasible for this project.

A WESP's primary function is to control particulate matter. However, secondary VOC control may be achieved. Dry ESPs control emissions by charging particles in the exhaust stream with a high voltage, oppositely charging a collection surface where the particles accumulate, removing the collected dust by a rapping process, and collecting the dust in hoppers. WESPs utilize a pre-quench to cool and saturate the gases prior to entering the collection chamber. The pre-quench section of the WESP may scrub and quench some fraction of the highly water-soluble compounds. WESPs consume significant water quantities during operation. The resulting effluent requires treatment and must be discharged to a solids-removing clarifying system prior to final disposal. The effluent may require additional sludge removal, pH adjustment, and/or additional treatment to remove dissolved solids. MWP does not currently have the onsite capability to treat the effluent produced from a WESP. As discussed above for PM, the average annualized cost to install a WESP alone (not including the wastewater treatment system) would be roughly \$1,783,500. The cost of controlling VOCs from this project would conservatively be \$35,800/ton and is therefore determined to be economically infeasible for this project.

Good combustion efficiency and proper equipment operation and maintenance incorporate various techniques to minimize VOC emissions from Furnace #1. Proper combustion techniques include maintaining optimum combustion conditions within the system via optimization of residence time, temperature, and mixing. The use of an oxygen trim control system to maintain adequate and optimum combustion air-to-fuel ratios is considered part of good combustion techniques.

BACT for VOC emissions from Furnace #1 and Pre-Dryer #1 is the use of good combustion techniques, proper equipment maintenance, an annual operation limit of 8,200 hr/year for Furnace #1, and an emission limit of 12.0 lb/hr from Stack #3.

f. Greenhouse Gases

Greenhouse gases (GHGs) are the aggregate group of the following gases: carbon dioxide (CO<sub>2</sub>), nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. At this time, there are no add-on controls utilized at similar facilities for the control of GHGs.

The Environmental Protection Agency (EPA) has released two recent documents on biogenic CO<sub>2</sub> emissions: the November 19, 2014 EPA memo titled *Addressing Biogenic Carbon Dioxide Emissions from Stationary Sources* and the November 2014 *Framework for Assessing Biogenic CO<sub>2</sub> Emissions from Stationary Source*. Biogenic CO<sub>2</sub> emissions are defined as CO<sub>2</sub> emissions related to the natural carbon cycle, as well as those resulting from the production, harvest, combustion, digestion, fermentation, decomposition, and processing of biologically based materials. EPA plans to propose revisions to the Prevention of Significant Deterioration (PSD) rules to include an exemption from the BACT requirement for GHGs from waste-derived feedstocks and from non-waste biogenic feedstocks derived from sustainable forest or agricultural practices. The raw materials and fuels for Furnace #1 and Pre-Dryer #1 could be considered biogenic for the purposes of CO<sub>2</sub> emissions, and therefore, may be exempt from BACT requirements in the future.

g. Opacity

Furnace #1 is subject to an opacity standard per 40 CFR Part 60, Subpart Db. Per Subpart Db, visible emissions from Furnace #1 shall not exceed 20% opacity on a six (6)-minute block average except for no more than one (1) six (6)-minute block average per hour of not more than 27% opacity except for periods of startup and shutdown.

The exhaust from Stack #3 is a combination of emissions from both fuel burning and process emissions. There are additional opacity requirements for Furnace #1 and Pre-Dryer #1 contained in *Visible Emissions* rule 06-096 CMR 101. However, the standards above are determined to be more stringent. Therefore, emissions from Stack #3 shall be limited to the opacity requirements for Furnace #1 above.

Within 180 days of startup of Furnace #1 and Pre-Dryer #1, MWP shall submit to the Department a startup and shutdown protocol and apply to amend their license to incorporate definitions for both startup and shutdown as well as address an opacity limit for periods of startup and shutdown.

4. Periodic Monitoring

MWP shall keep records of the number of operating hours of Furnace #1 on a monthly and 12-month rolling total basis.

MWP shall keep records of the tons of wood fired in Furnace #1 on a monthly basis. It is assumed that the green wood fired in Furnace #1 has an average moisture content of 45%.

MWP shall monitor Furnace #1 for PM and/or opacity as required by 40 CFR Part 60, Subpart Db, §60.48b.

MWP shall monitor the secondary voltage on the ESP continuously and record the reading at least once per 8-hour shift whenever Furnace #1 is in operation.

MWP shall conduct initial performance testing on Furnace #1 to demonstrate compliance with the opacity and NSPS PM emission limits (lb/MMBtu) within 60 days of achieving maximum production, but not later than 180 days after initial startup, in accordance with 40 CFR Part 60, Subpart Db.

MWP shall perform subsequent performance tests for opacity using 40 CFR Part 60, Appendix A, Method 9 per the schedule contained in 40 CFR Part 60, Subpart Db.

Within 180 days of startup of Furnace #1 and Pre-Dryer #1, MWP shall perform stack testing on Stack #3 for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, CO, and VOC to determine compliance with the licensed emission limits (lb/hr). When performing stack testing for compliance purposes, Furnace #1 and Pre-Dryer #1 shall be operated under normal operating conditions.

Records shall be maintained documenting startups, shutdowns, and malfunctions for Furnace #1 and its associated control equipment. These records shall include dates, times, duration, cause, and method utilized to minimize duration of the event and/or to prevent reoccurrence.

#### D. Material Handling

This project will involve the installation of new material handling equipment, including conveyors for wood fuel and wood chips to be processed in Pre-Dryer #1 as well as an ash handling system.

Wood conveyors will be either enclosed or covered. Ash handling systems will be enclosed and convey ash to totes. Bottom ash will be conditioned with water. Ash totes will be transferred to covered containers and trucked off-site for disposal.

Stockpiles, roadways, conveyors, transfer points, and building vents shall be subject to the fugitive emissions and general process sources visible emissions limits, as applicable, already contained in MWP's existing license in Conditions (18) and (19).

E. Inventory Calculations

For the purposes of submissions of annual emissions inventory per 06-096 CMR 137, *Emission Statements*, MWP shall estimate actual emissions for the system (i.e. Furnace #1 and Pre-Dryer #1 combined). If the electronic reporting system used to report emissions lists these units separately, MWP shall report all emissions for the system under Furnace #1 and report zero emissions from Pre-Dryer #1.

Inventory emissions for all pollutants shall be calculated by multiplying the hours of operation of Furnace #1 by the lb/hr emission limit contained in the air emission license.

F. Existing Dryer #1 PM Limits

In 2011 the Department redefined PM<sub>10</sub> to include both filterable and condensable materials. When the particulate matter emission limits for Dryer #1 were established, they were intended to include only filterable PM. MWP has proposed a new PM<sub>10</sub> limit of 12.8 lb/hr which is based on the previous limit of 8.5 lb/hr plus an additional 4.3 lb/hr of condensables. The Department agrees that a higher PM<sub>10</sub> limit of 12.8 lb/hr to include condensables is appropriate.

G. Annual Emissions

1. Total Annual Emissions

MWP shall be restricted to the following annual emissions, based on a 12 month rolling total. The tons per year limits were calculated based on the following:

- Operation of Furnace #1 and Pre-Dryer #1 at full capacity for 8,200 hr/year;
- Operation of Dryer #1 at full capacity for 7,950 hr/year; and
- Operation of the Cyclone Baghouse for 7,950 hr/year.

**Total Licensed Annual Emissions for the Facility**

**Tons/year**

(used to calculate the annual license fee)

	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC
Dryer #1	33.8	50.9	50.9	20.3	19.9	60.0	49.7
Cyclone Baghouse	2.0	2.0	2.0	—	—	—	—
Furnace #1 & Pre-Dryer #1	68.9	68.9	68.9	15.2	97.6	243.5	49.2
<b>Total TPY</b>	<b>104.7</b>	<b>121.8</b>	<b>121.8</b>	<b>35.5</b>	<b>117.5</b>	<b>303.5</b>	<b>98.9</b>

## 2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through ‘Tailoring’ revisions made to EPA’s *Approval and Promulgation of Implementation Plans*, 40 CFR Part 52, Subpart A, §52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO<sub>2</sub>e).

The quantity of CO<sub>2</sub>e emissions from this facility is greater than 100,000 tons per year, based on the following:

- the facility’s operational limits;
- worst case emission factors from the following sources: U.S. EPA’s AP-42, the Intergovernmental Panel on Climate Change (IPCC), and 40 CFR Part 98, *Mandatory Greenhouse Gas Reporting*; and
- global warming potentials contained in 40 CFR Part 98.

As defined in 06-096 CMR 100, any source emitting 100,000 tons/year or more of CO<sub>2</sub>e is a major source for GHG. This license includes applicable requirements addressing GHG emissions from this source, as appropriate.

## III. AMBIENT AIR QUALITY ANALYSIS

### A. Overview

A refined modeling analysis was performed to show that emissions from MWP, in conjunction with other sources, will not cause or contribute to violations of National Ambient Air Quality Standards (NAAQS) for SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub> or CO or to Class II increments for SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> or NO<sub>2</sub>.

Based upon the magnitude of proposed emissions increase and the distance from the source to any Class I area, the affected Federal Land Managers (FLMs) and MEDEP-BAQ have determined that an assessment of Class I Air Quality Related Values (AQRV) is not required.

### B. Model Inputs

The AERMOD-PRIME refined dispersion model was used to address NAAQS and increment impacts. The modeling analysis accounted for the potential of building wake

and cavity effects on emissions from all modeled stacks that are below their calculated formula GEP stack heights.

All modeling was performed in accordance with all applicable requirements of the Maine Department of Environmental Protection, Bureau of Air Quality (MEDEP-BAQ) and the United States Environmental Protection Agency (USEPA).

A valid five-year hourly off-site meteorological database was used in the AERMOD-PRIME refined modeling analysis. The following parameters and their associated heights were collected at the Madison Paper Industries meteorological monitoring site, located in Madison, during the five-year period 1991-1995:

**TABLE III-1 : Meteorological Parameters and Collection Heights**

Parameter	Sensor Height(s)
Wind Speed	10 meters, 70 meters
Wind Direction	10 meters, 70 meters
Standard Deviation of Wind Direction (Sigma A)	10 meters, 70 meters
Temperature	10 meters, 70 meters

When possible, surface data collected at the Augusta NWS site were substituted for missing surface data. All other missing data were interpolated or coded as missing, per USEPA guidance. In addition, hourly Augusta NWS data, from the same time period, were used to supplement the primary surface dataset for any required variables that were not explicitly collected at the Madison meteorological monitoring site.

Surface meteorological data was combined with concurrent hourly cloud cover and upper-air data obtained from the Caribou National Weather Service (NWS). Missing cloud cover and/or upper-air data values were interpolated or coded as missing, per USEPA guidance.

All necessary representative micrometeorological surface variables for inclusion into AERMET (surface roughness, Bowen ratio and albedo) were calculated using the AERSURFACE utility program and from procedures recommended by USEPA.

Point-source parameters, used in the modeling for MWP are listed in Table III-2.

**TABLE III-2 : MWP Point Source Stack Parameters**

MWP Stacks	Stack Base Elevation (m)	Stack Height (m)	GEP Stack Height (m)	Stack Diameter (m)	UTM Easting NAD83 (m)	UTM Northing NAD83 (m)
<b>CURRENT/PROPOSED</b>						
• Existing Dryer Line Stack	127.10	18.59	43.32	0.91	447,729	4977,137
• New TOF/Dryer Stack	126.19	38.10	68.62	1.52	447,850	4977,116
<b>2012 BASELINE (PM<sub>2.5</sub> INCREMENT)</b>						
• Existing Dryer Line Stack	127.10	18.59	43.32	0.91	447,729	4977,137
<b>1987 BASELINE (NO<sub>2</sub> INCREMENT)</b>						
• No MWP sources existed in the 1987 baseline year; no NO <sub>2</sub> baseline credit to be taken.						
<b>1977 BASELINE (SO<sub>2</sub>/PM<sub>10</sub> INCREMENT)</b>						
• No MWP sources existed in the 1977 baseline year; no SO <sub>2</sub> or PM <sub>10</sub> baseline credit to be taken.						

Emission parameters for MWP for NAAQS and Class II increment modeling are listed in Table III-3. The emission parameters for MWP Pellets are based on the maximum license allowed operating configuration.

For the purpose of determining maximum predicted impacts, the following assumptions were used:

- all NO<sub>x</sub> emissions were conservatively assumed to convert to NO<sub>2</sub> (USEPA Tier I Method),
- all particulate emissions were conservatively assumed to convert to PM<sub>10</sub> and PM<sub>2.5</sub>

**TABLE III-3 : MWP Stack Emission Parameters**

MWP Stacks	Averaging Periods	SO <sub>2</sub> (g/s)	PM <sub>10</sub> /PM <sub>2.5</sub> (g/s)	NO <sub>x</sub> (g/s)	CO (g/s)	Stack Temp (K)	Stack Velocity (m/s)
<b>MAXIMUM LICENSE ALLOWED</b>							
• New TOF/Dryer Stack	All	0.47	2.12	3.00	7.49	355.37	14.09
• Existing Dryer Stack (Maximum)	All	0.64	1.61	0.63	1.90	352.59	11.89
• Existing Dryer Stack (Typical)	All	0.48	1.21	0.47	1.43	352.59	8.92
<b>2012 BASELINE (PM<sub>2.5</sub> INCREMENT)</b>							
• Existing Dryer Line Stack	All	-	-1.61	-	-	352.59	11.89
<b>1987 BASELINE (NO<sub>2</sub> INCREMENT)</b>							
• No MWP sources existed in the 1987 baseline year; no NO <sub>2</sub> baseline credit to be taken.							
<b>1977 BASELINE (SO<sub>2</sub>/PM<sub>10</sub> INCREMENT)</b>							
• No MWP sources existed in the 1977 baseline year; no SO <sub>2</sub> or PM <sub>10</sub> baseline credit to be taken.							

C. Single Source Modeling Impacts

Refined modeling was performed for a total of five operating scenarios that represented a range of MWP operations.

The AERMOD-PRIME model results for MWP alone are shown in Table III-4. Maximum predicted impacts that exceed their respective significance level are indicated in boldface type. For comparison to the Class II significance levels, the impacts for all pollutants/averaging periods were conservatively based on the maximum High-1<sup>st</sup>-High predicted values. No further modeling was required for pollutants that did not exceed their respective significance levels.

**TABLE III-4 : Maximum AERMOD-PRIME Impacts from MWP Alone**

Pollutant	Averaging Period	Max Impact ( $\mu\text{g}/\text{m}^3$ )	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Class II Significance Level ( $\mu\text{g}/\text{m}^3$ )	Load Case
SO <sub>2</sub>	1-hour	<b>30.87</b>	447,720	4977,010	127.85	<b>10<sup>a</sup></b>	Minimum
	3-hour	<b>31.65</b>	447,720	4977,010	127.85	<b>25</b>	Minimum
	24-hour	<b>12.48</b>	447,820	4976,910	127.04	<b>5</b>	Maximum
	Annual	<b>1.12</b>	447,740	4976,940	126.65	<b>1</b>	Maximum
PM <sub>10</sub>	24-hour	<b>33.23</b>	447,630	4977,230	128.22	<b>5</b>	Maximum
	Annual	<b>2.90</b>	447,740	4976,940	126.65	<b>1</b>	Maximum
PM <sub>2.5</sub>	24-hour	<b>23.48</b>	447,720	4976,970	127.11	<b>none<sup>b</sup></b>	Typical
	Annual	<b>2.64</b>	447,760	4976,920	127.21	<b>none<sup>b</sup></b>	Maximum
NO <sub>2</sub>	1-hour	<b>48.93</b>	449,000	4979,100	198.29	<b>10<sup>a</sup></b>	Maximum
	Annual	<b>1.46</b>	447,750	4977,350	128.00	<b>1</b>	Maximum
CO	1-hour	376.46	449,100	4979,000	193.07	<b>2,000</b>	Maximum
	8-hour	79.86	447,640	4977,230	128.79	<b>500</b>	Maximum

<sup>a</sup> Interim Significant Impact Level (SIL) adopted by Maine

<sup>b</sup> Previous Significant Impact Levels (SIL) remanded by USEPA in 2013

D. Combined Source Modeling Impacts

As indicated in boldface type in Table III-4, other sources not explicitly included in the modeling analysis must be accounted for by using representative background concentrations for the area.

Background concentrations, listed in Table III-5, are derived from representative rural background data for use in the Eastern Maine region.

**TABLE III-5 : Background Concentrations**

Pollutant	Averaging Period	Background Concentration ( $\mu\text{g}/\text{m}^3$ )	Date	Monitoring Site
SO <sub>2</sub>	1-hour	24	2009-2011	Presque Isle
	3-hour	18		
	24-hour	11	2009-2011	Acadia National Park
	Annual	1		
PM <sub>10</sub>	24-hour	20	2011-2013	Acadia National Park
	Annual	10		
PM <sub>2.5</sub>	24-hour	17	2008-2010	Greenville
	Annual	5		
NO <sub>2</sub>	1-hour	43	2009-2012	Presque Isle
	Annual	4	2010-2012	
CO	1-hour	365	2010-2012	Acadia National Park
	8-hour	322		

MEDEP examined other nearby sources to determine if any impacts would be significant in or near MWP's significant impact area. Due to MWP's location, extent of the predicted significant impact area and other nearby source's emissions, MEDEP has determined that no other sources would be included in combined-source modeling.

The maximum AERMOD-PRIME modeled impacts, which were explicitly normalized to the form of their respective NAAQS, were added with conservative rural background concentrations to demonstrate compliance with NAAQS, as shown in Table III-6.

Because all pollutant/averaging period impacts using this method meet NAAQS, no further NAAQS modeling analyses need to be performed.

**TABLE III-6 : Maximum Combined Source Impacts ( $\mu\text{g}/\text{m}^3$ )**

Pollutant	Averaging Period	Max Impact ( $\mu\text{g}/\text{m}^3$ )	Receptor UTM E (m)	Receptor UTM N (m)	Receptor Elevation (m)	Back-Ground ( $\mu\text{g}/\text{m}^3$ )	Total Impact ( $\mu\text{g}/\text{m}^3$ )	NAAQS ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	1-hour	26.46	447,730	4977,020	128.02	24	50.46	196
	3-hour	24.65	447,640	4977,250	128.11	18	42.65	1,300
	24-hour	10.59	447,740	4976,890	124.28	11	21.59	365
	Annual	1.12	447,740	4976,940	126.65	1	2.12	80
PM <sub>10</sub>	24-hour	26.80	447,740	4976,900	124.54	20	46.80	150
	Annual	2.90	447,740	4976,940	126.65	10	12.90	50
PM <sub>2.5</sub>	24-hour	13.71	447,740	4976,940	126.65	17	30.71	35
	Annual	2.64	447,760	4976,920	127.21	5	7.64	12
NO <sub>2</sub>	1-hour	27.62	447,670	4977,220	130.66	43	70.62	188
	Annual	1.46	447,750	4977,350	128.00	4	5.46	100
CO	1-hour	279.30	449,000	4979,100	198.29	365	644.30	40,000
	8-hour	77.59	447,620	4977,250	127.16	322	399.59	10,000

E. Secondary Formation of PM<sub>2.5</sub>

Since proposed PM<sub>2.5</sub> emissions for this modification are greater than 15TPY and SO<sub>2</sub>/NO<sub>x</sub> emissions are expected to be greater than 40TPY, a qualitative review of secondary impacts due to PM<sub>2.5</sub> precursor emissions (secondary PM<sub>2.5</sub>) is required. In accordance with *Guidance for PM<sub>2.5</sub> Permit Modeling* (USEPA 454/B-14-001, 2014), a PM<sub>2.5</sub> compliance demonstration must account for both primary PM<sub>2.5</sub> from a source's direct PM emissions, as well as secondarily formed PM<sub>2.5</sub> from a source's precursor emissions of NO<sub>x</sub> and SO<sub>2</sub>.

A detailed qualitative assessment of secondary formation was submitted which analyzed the following factors: fuels being used at MWP, historic atmospheric and meteorological conditions, existing background air quality data, PM<sub>2.5</sub> speciation, quantity of NO<sub>x</sub> and SO<sub>2</sub> precursor emissions and the physical/temporal alignment at predicted maximum impacts from the AERMOD-PRIME modeling.

Based on the data presented in the PM<sub>2.5</sub> qualitative assessment addressing secondary formation, MEDEP-BAQ has determined that no significant secondary PM<sub>2.5</sub> formation is likely to occur. Therefore, no additional review of NO<sub>x</sub> and SO<sub>2</sub> precursor emissions, in relation to NAAQS or Class II increment modeling, is required.

F. Class II Increment

The AERMOD-PRIME refined model was used to predict maximum Class II increment impacts.

Results of the Class II increment analysis are shown in Tables III-7. All modeled maximum increment impacts were below all increment standards. Because all predicted increment impacts meet increment standards, no additional Class II SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and NO<sub>2</sub> increment modeling needed to be performed.

**TABLE III-7 : Class II Increment Consumption**

Pollutant	Averaging Period	Max Impact (µg/m <sup>3</sup> )	Receptor UTM E (km)	Receptor UTM N (km)	Receptor Elevation (m)	Class II Increment (µg/m <sup>3</sup> )
SO <sub>2</sub>	3-hour	24.65	447,640	4977,250	128.11	512
	24-hour	10.59	447,740	4976,890	124.28	91
	Annual	1.12	447,740	4976,940	126.65	20
PM <sub>10</sub>	24-hour	26.80	447,740	4976,900	124.54	30
	Annual	2.90	447,740	4976,940	126.65	17
PM <sub>2.5</sub>	24-hour	6.16	447,900	4979,500	126.60	9
	Annual	2.90	447,740	4976,940	126.65	4
NO <sub>2</sub>	Annual	1.46	447,750	4977,350	128.00	25

Federal guidance and 06-096 CMR 115 require that any major new source or major source undergoing a major modification provide additional analyses of impacts that would occur as a direct result of the general, commercial, residential, industrial and mobile-source growth associated with the construction and operation of that source.

**GENERAL GROWTH:** Some increases in local emissions due to construction related activities are expected to occur for several months, with the majority of emissions due to truck and construction-vehicle traffic (such as soil removal, concrete delivery/pouring, delivery of materials, etc.). Increases in potential emissions of NO<sub>x</sub> and PM<sub>2.5</sub> due to vehicles will likely be temporary and short-lived. Emissions of dust from construction related activities will be minimized by the use of "Best Management Practices" for construction on-site.

**RESIDENTIAL, COMMERCIAL AND INDUSTRIAL GROWTH:** Population growth in the impact area of the proposed source can be used as a surrogate factor for the growth in emissions from residential combustion sources. The manpower requirements, operations and support required for the construction and operation of MWP will, for the most part, be available from the surrounding communities. It is expected that no new significant residential, commercial and industrial growth will follow from the modification associated with MWP.

**MOBILE SOURCE AND AREA SOURCE GROWTH:** Since area and mobile sources are considered minor sources of NO<sub>2</sub>, their contribution to increment has to be considered. Technical guidance from USEPA points out that screening procedures can be used to determine whether additional detailed analyses of minor source emissions are required. Compiling a minor source inventory may not be required if it can be shown

that little or no growth has taken place in the impact area of the proposed source since the pollutant baseline dates (1977/1988) were established. Very little growth has taken place in the surrounding area of MWP since the baseline dates. In addition, no significant long-term increase in Vehicle Miles Travelled (VMT) is expected as a result of the modification. No further analyses of mobile or area source growth are needed.

G. Impacts on Plants, Soils & Animals

In accordance with guidance provided in USEPA's Prevention of Significant Deterioration manual, MWP evaluated the impacts of its emissions using procedures described in *A Screening Procedure for the Impacts of Air Pollution on Plants, Soils and Animals* (USEPA, 450/2-81-078, 1980).

Maximum predicted impacts from the AERMOD-PRIME modeling were compared to USEPA's 'Screening Concentrations' (see Table III-8), which represent the minimum concentration at which adverse growth effects or tissue injury in sensitive vegetation can be expected. For comparison to the Screening Concentrations, the model impacts for all pollutants/averaging periods were conservatively based on the maximum High-1<sup>st</sup>-High predicted values.

**TABLE III-8 : Maximum Impacts on Plants, Soils & Animals ( $\mu\text{g}/\text{m}^3$ )**

Pollutant	Averaging Period	Max Impact ( $\mu\text{g}/\text{m}^3$ )	Screening Concentration ( $\mu\text{g}/\text{m}^3$ )
SO <sub>2</sub>	1-hour	47.11	917
	3-hour	31.65	786
	Annual	1.12	18
NO <sub>2</sub>	4-hour	48.15	3,760
	8-hour	31.08	3,760
	Month	3.18	564
	Annual	1.46	94
CO	Week	53.36	1,800,000

Because all predicted impacts are below the Screening Concentrations, no further assessment of the impacts to plants, soils and animals is required, per USEPA guidance.

H. Class I Impacts

Based upon the magnitude of proposed emissions increase and the distance from MWP to any Class I area, the affected Federal Land Managers (FLMs) and MEDEP-BAQ have determined that an assessment of Class I Air Quality Related Values (AQRVs) is not required.

I. Summary

In summary, it has been demonstrated that MWP in its proposed configuration will not cause or contribute to a violation of any NAAQS for SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub> or CO or to Class II increments for SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> or NO<sub>2</sub>.

**ORDER**

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-989-71-E-A subject to the conditions found in Air Emission License A-989-71-D-R/M and in the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

**The following shall replace Condition (16)(F) of Air Emission License A-989-71-D-R/M:**

(16) **Dryer #1**

- F. Emissions from Dryer #1 shall not exceed the following [06-096 CMR 115, BPT]:

<b>Emission Unit</b>	<b>PM (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>	<b>SO<sub>2</sub> (lb/hr)</b>	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>	<b>VOC (lb/hr)</b>
Dryer #1	8.5	12.8	5.1	5.0	15.1	12.5

**The following shall replace Condition (16)(I) of Air Emission License A-989-71-D-R/M:**

- I. MWP shall test the wet scrubber exhaust stack for PM<sub>10</sub> once every three years (with the next test completed by 12/31/15) to demonstrate compliance with the licensed emission limit. If MWP fails a stack test, MWP shall test annually until compliance is

demonstrated for three consecutive years before returning to testing once every three years. [06-096 CMR 115, BPT]

**The following are New Conditions:**

**(22) Furnace #1 and Pre-Dryer #1**

- A. Furnace #1 is licensed to fire wood/biomass materials. [06-096 CMR 115, BACT]
- B. MWP shall not exceed an annual operating limit of 8,200 hr/year for Furnace #1. [06-096 CMR 115, BACT]
- C. Furnace #1 and Pre-Dryer #1 shall both exhaust through Stack #3 which shall have a minimum height of 125-feet above ground level. [06-096 CMR 115, BACT]
- D. Control Equipment
  - 1. Emissions of PM/PM<sub>10</sub>/PM<sub>2.5</sub> from Furnace #1 shall be controlled by the operation and maintenance of an ESP except for periods of startup and shutdown. During normal operation, MWP shall operate, at a minimum, the number of ESP chambers and number of fields per chamber that operated during the most recent demonstration of compliance with the licensed particulate matter emission limits. [06-096 CMR 115, BACT]
  - 2. Emissions of PM/PM<sub>10</sub>/PM<sub>2.5</sub> from Furnace #1 and Pre-Dryer #1 shall be controlled by the operation and maintenance of a cyclone and multiclone. [06-096 CMR 115, BACT]
  - 3. Emissions of NO<sub>x</sub> from Furnace #1 shall be controlled by the operation and maintenance of an FGR system. [06-096 CMR 115, BACT]
- E. Emissions shall not exceed the following:

<b>Emission Unit</b>	<b>Pollutant</b>	<b>lb/MMBtu</b>	<b>Origin and Authority</b>
Furnace #1	PM	0.030	40 CFR Part 60, §60.43b(h)(1)

F. Emissions shall not exceed the following [06-096 CMR 115, BACT]:

<b>Emission Unit</b>	<b>PM (lb/hr)</b>	<b>PM<sub>10</sub> (lb/hr)</b>	<b>PM<sub>2.5</sub> (lb/hr)</b>	<b>SO<sub>2</sub> (lb/hr)</b>	<b>NO<sub>x</sub> (lb/hr)</b>	<b>CO (lb/hr)</b>	<b>VOC* (lb/hr)</b>
Furnace #1 & Pre-Dryer #1 (Combined)	16.8	16.8	16.8	3.7	23.8	59.4	12.0

\*Expressed as propane

G. Visible emissions from Stack #3 shall not exceed 20% opacity on a six (6) minute block average basis, except no more than one (1) six minute period per hour of not more than 27% opacity except for periods of startup and shutdown.  
[40 CFR Part 60, §60.43b(f) and 06-096 CMR 115, BACT]

H. Within 180 days of startup of Furnace #1 and Pre-Dryer #1, MWP shall submit to the Department a startup and shutdown protocol and apply to amend their license to incorporate definitions for both startup and shutdown as well as address an opacity limit for periods of startup and shutdown. [06-096 CMR 115, BACT]

I. Stack Testing

1. MWP shall conduct initial performance testing on Furnace #1 to demonstrate compliance with the opacity and NSPS PM emission limits (lb/MMBtu) within 60 days of achieving maximum production, but not later than 180 days after initial startup, in accordance with 40 CFR Part 60, Subpart Db.  
[40 CFR Part 60, §60.46b(d)]
2. MWP shall perform subsequent performance tests for opacity using 40 CFR Part 60, Appendix A, Method 9 per the schedule contained in 40 CFR Part 60, Subpart Db. [40 CFR Part 60, §60.48b(a)]
3. Within 180 days of startup of Furnace #1 and Pre-Dryer #1, MWP shall perform stack testing on Stack #3 for PM, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>x</sub>, CO, and VOC to determine compliance with the licensed emission limits (lb/hr). When performing stack testing for compliance purposes, Furnace #1 and Pre-Dryer #1 shall be operated under normal operating conditions. [06-096 CMR 115, BACT]

J. Periodic Monitoring

1. MWP shall keep records of the number of operating hours of Furnace #1 on a monthly and 12-month rolling total basis. [06-096 CMR 115, BACT]

2. MWP shall keep records of the tons of wood fired in Furnace #1 on a monthly basis. It is assumed that the green wood fired in Furnace #1 has an average moisture content of 45%. [40 CFR Part 60, §60.49b(d)(2)]
3. MWP shall monitor Furnace #1 for PM and/or opacity as required by 40 CFR Part 60, Subpart Db, §60.48b.
4. MWP shall monitor the secondary voltage on the ESP continuously and record the reading at least once per 8-hour shift whenever Furnace #1 is in operation. [06-096 CMR 115, BACT]
5. Records shall be maintained documenting startups, shutdowns, and malfunctions for Furnace #1 and its associated control equipment. These records shall include dates, times, duration, cause, and method utilized to minimize duration of the event and/or to prevent reoccurrence. [06-096 CMR 115, BACT]
6. MWP shall maintain a log documenting maintenance activities performed on the major equipment located at the facility, including Furnace #1, Pre-Dryer #1, the ESP, and all facility cyclones/multiclones. [06-096 CMR 115, BACT]

**K. Reporting**

1. MWP shall submit notification of the date of initial startup to the Department and the Environmental Protection Agency (EPA) per the requirements of 40 CFR Part 60, §60.49b(a).
2. MWP shall submit to the Department and EPA the test data from the initial performance test per the requirements of 40 CFR Part 60, §60.49b(b).
3. MWP shall submit to the Department and EPA semiannual excess emission reports per the requirements of 40 CFR Part 60, §60.49b(h).

Maine Woods Pellet Company, LLC,  
Athens Capital Holdings, LLC, &  
Athens Energy LLC  
Somerset County  
Athens, Maine  
A-989-71-E-A

28

Departmental  
Findings of Fact and Order  
Air Emission License  
Amendment #1

- (23) MWP shall apply for a Part 70 license within 12 months of commencing operation under the proposed scenario as provided in 40 CFR Part 70.5. [06-096 CMR 140, Section 3]

DONE AND DATED IN AUGUSTA, MAINE THIS 13 DAY OF May, 2015.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Maia Allen Robert Corne for  
PATRICIA W. AHO, COMMISSIONER

**The term of this amendment shall be concurrent with the term of Air Emission License A-989-71-D-R/M.**

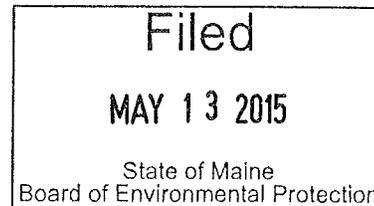
PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 2/20/15

Date of application acceptance: 2/20/15

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.



**SCHEDULE C**

**to**

**Operating Agreement**

**for**

**ATHENS ENERGY LLC**

**Form of Membership Unit Certificate**

**Section VI, Question 6.1 Corporations**

**Attachment A: Amended and Restated Limited Liability Company Agreement of Athens  
Energy LLC**

Section VI, Question 61, Corporations  
Attachment A

AMENDED AND RESTATED LIMITED LIABILITY COMPANY AGREEMENT  
OF  
ATHENS ENERGY LLC

THIS AMENDED AND RESTATED LIMITED LIABILITY COMPANY AGREEMENT is made and entered into by and among **ATHENS ENERGY LLC**, a Maine limited liability company (the “Company”), and the Member(s) listed on Schedule A attached hereto, and is to be effective as of September 4, 2014 (the “Effective Date”).

WITNESSETH:

WHEREAS, the undersigned Persons wish to enter into this Agreement to set forth the terms and conditions on which the management, business and financial affairs of the Company shall be conducted.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

ARTICLE I

DEFINITIONS

1.1 In addition to the terms defined elsewhere in this Operating Agreement, the following terms shall have the following respective meanings:

“Act” means the Maine Limited Liability Company Act, 31 M.R.S. §§ 1501 et seq., as the same may be amended from time to time, and any successor provisions thereto.

“Articles of Organization” means the Articles of Organization of the Company as filed with the Secretary of State, as the same may be amended from time to time pursuant to the Act and the terms of this Agreement.

“Capital Account” means, as of any given date, the Capital Contribution to the Company by a Member as adjusted up to the date in question pursuant to Articles VIII and IX hereof.

“Capital Contribution” means:

- (a) the total amount of cash, together with
- (b) the total fair market value of assets as determined by agreement between the contributing Member and the Management Committee at the time of contribution (reduced

by any debt thereon subject to which the Company takes the assets, or which the Company assumes in connection with such assets),

which a Member or his predecessor in interest has contributed to the Company.

“Code” means the Internal Revenue Code of 1986, as the same may be amended from time to time. Where there is a reference in this Agreement to a specific provision of the Code, such reference shall be deemed to refer to such provision as in effect on the date first above written and, to the extent not inconsistent therewith, to any successor provision thereto.

“Deficit Capital Account” means, with respect to any Member, the deficit balance, if any, in such Member’s Capital Account as of the end of any Fiscal Year, after giving effect to the following adjustments:

(a) credit to such Capital Account any amount which such Member is obligated to restore under Section 1.704-1(b)(2)(ii)(c) of the Treasury Regulations, as well as any addition thereto pursuant to the next to last sentence of Sections 1.704-2(g)(1) and (i)(5) of the Treasury Regulations, after taking into account thereunder any changes during such year in limited liability company minimum gain attributable to any nonrecourse debt (as determined under Section 1.704-2(d) of the Treasury Regulations) or any Member nonrecourse indebtedness minimum gain attributable to any Member nonrecourse debt (as determined under Section 1.704-2(i)(3) of the Treasury Regulations); and

(b) debit to such Capital Account the items described in Sections 1.704-1(b)(2)(ii)(d)(4), (5) and (6) of the Treasury Regulations.

This definition of Deficit Capital Account is intended to comply with the provisions of Treasury Regulations Section 1.704-1(b)(2)(ii)(d) and 1.704-2, and will be interpreted consistently with those provisions.

“Depreciation” means, for each Fiscal Year, an amount equal to the depreciation, amortization, or other cost recovery deduction allowable with respect to an asset for such Fiscal Year, except that if the Gross Asset Value of an asset differs from its adjusted basis for federal income tax purposes at the beginning of such Fiscal Year, Depreciation shall be an amount which bears the same ratio to such beginning Gross Asset Value as the federal income tax depreciation, amortization, or other cost recovery deduction for such Fiscal Year bears to such beginning adjusted tax basis; provided, however, that if the adjusted basis for federal income tax purposes of an asset at the beginning of such Fiscal Year is zero, Depreciation shall be determined with reference to such beginning Gross Asset Value using any reasonable method selected by the Management Committee.

“Distributable Cash” shall be determined at the end of each Fiscal Year and means all cash, revenues and funds received by the Company, less the sum of the following to the extent paid or set aside by the Company: (i) all principal and interest payments on indebtedness of the Company and all other sums paid to lenders, vendors or other creditors (including to Members in their capacities as lenders, vendors or other creditors); (ii) all cash expenditures incurred incident

to the normal operation of the Company's business; and (iii) such Reserves as the Management Committee deems reasonably necessary to the proper operation of the Company's business, including funds necessary or desirable for reinvestment by the Company.

“Farm Credit” means Farm Credit East, ACA, a corporation organized and existing under the Farm Credit Act of 1971, as amended, with an office and place of business in Auburn, Maine, and its successors and assigns.

“Fiscal Year” means the Company's fiscal year, which shall be the calendar year ending December 31 each year.

“Gross Asset Value” means, with respect to any asset, the asset's adjusted basis for federal income tax purposes, except as follows:

(a) the initial Gross Asset Value of any asset contributed by a Member to the Company shall be the gross fair market value of such asset, as determined by the Management Committee.

(b) the Gross Asset Values of all Company assets shall be adjusted to equal their respective gross fair market values, as determined by the Management Committee as of the following times: (i) the acquisition of an additional interest by any new or existing Member in exchange for more than a de minimis Capital Contribution; (ii) the distribution by the Company to a Member of more than a de minimis amount of property as consideration for such Member's entire interest in the Company; and (iii) the liquidation of the Company within the meaning of Section 1.704-1(b)(2)(ii)(g) of the Treasury Regulations; provided, however, that adjustments pursuant to clauses (i) and (ii) above shall be made only if the Management Committee reasonably determines that such adjustments are necessary or appropriate to reflect the relative economic interests of the Members in the Company;

(c) the Gross Asset Value of any Company asset distributed to any Member shall be adjusted to equal the gross fair market value of such asset on the date of distribution as determined by the Management Committee; and

(d) the Gross Asset Values of Company assets shall be increased (or decreased) to reflect any adjustments to the adjusted basis of such assets pursuant to Sections 734(b) or 743(b) of the Code, but only to the extent that such adjustments are taken into account in determining Capital Accounts pursuant to Section 1.704-1(b)(2)(iv)(m) of the Treasury Regulations, Sections 8.3 and 9.2 hereof and subparagraph (g) under the definition of Net Profits and Net Losses hereunder; provided, however, that Gross Asset Values shall not be adjusted pursuant to this definition to the extent the Management Committee reasonably determines that an adjustment pursuant to subparagraph (b) of this definition is necessary or appropriate in connection with a transaction that would otherwise result in an adjustment pursuant to this subparagraph (d).

If the Gross Asset Value of an asset has been determined or adjusted pursuant to subparagraph (a), (b) or (d) of this definition, then such Gross Asset Value shall thereafter be adjusted by the

Depreciation taken into account with respect to such asset for purposes of computing Net Profits and Net Losses.

“Majority Vote of the Members” means the affirmative vote, assent, consent, or other action of Members who own at least fifty-one percent (51%) of the Membership Units eligible to vote at the time of the vote in question.

“Management Committee” means the Management Committee elected pursuant to the terms of Article VII of this Agreement.

“Managers” means the member(s) of the Management Committee. The Managers are each individually referred to herein as a “Manager”.

“Member” means each Person who now or hereafter owns one or more Membership Units and who has been admitted as a Member in accordance with this Operating Agreement, until such Person (i) ceases to be the owner of any Membership Units, or (ii) is otherwise deemed to have ceased being a Member pursuant to this Operating Agreement or the Act.

“Membership Percentage” means, with respect to each Member, the number of Membership Units owned by such Member divided by the total number of issued and outstanding Membership Units on the date of the event giving rise to the calculation of such Member’s Membership Percentage.

“Membership Unit” or “Unit” means a unit of undivided fractional ownership interest in the Company.

“Net Profits” and “Net Losses” mean, for each Fiscal Year, an amount equal to the Company’s net taxable income or loss for such year as determined for federal income tax purposes (including separately stated items) in accordance with the accounting method and rules used by the Company and in accordance with Section 703 of the Code with the following adjustments:

(a) any items of income, gain, loss and deduction allocated to Members pursuant to Section 9.2 hereof shall not be taken into account in computing Net Profits or Net Losses for purposes of this Agreement;

(b) any income of the Company that is exempt from federal income tax and not otherwise taken into account in computing Net Profits and Net Losses (pursuant to this definition) shall be added to such taxable income or loss;

(c) any expenditure of the Company described in Section 705(a)(2)(B) of the Code and not otherwise taken into account in computing Net Profits and Net Losses (pursuant to this definition) shall be subtracted from such taxable income or loss;

(d) in the event the Gross Asset Value of any Company asset is adjusted pursuant to clause (b) or (c) of the definition of Gross Asset Value, the amount of such

adjustment shall be taken into account as gain or loss from the disposition of such asset for purposes of computing Net Profits and Net Losses;

(e) gain or loss resulting from any disposition of any Company asset with respect to which gain or loss is recognized for federal income tax purposes shall be computed with reference to the Gross Asset Value of the asset disposed of, notwithstanding that the adjusted tax basis of such asset differs from its Gross Asset Value;

(f) in lieu of the depreciation, amortization and other cost recovery deductions taken into account in computing such taxable income or loss, there shall be taken into account Depreciation for such Fiscal Year; and

(g) to the extent an adjustment to the adjusted tax basis of any Company asset pursuant to Section 734(b) of the Code or Section 743(b) of the Code is required pursuant to Section 1.704-1(b)(2)(iv)(m)(4) of the Treasury Regulations to be taken into account in determining Capital Accounts, the amount of such adjustment shall be treated as an item of gain (if the adjustment increases the basis of the asset) or loss (if the adjustment decreases the basis of the asset) from the disposition of the asset and shall be taken into account for purposes of computing Net Profits or Net Losses.

“Operating Agreement” or “Agreement” means this Amended and Restated Limited Liability Company Agreement including all Exhibits, Schedules, and attachments hereto, as originally executed and as amended from time to time.

“Person” means any individual, entity, association, or trust, including without limitation any corporation, limited liability company, or partnership, and the heirs, executors, administrators, legal representatives, successors, and assigns of such Person where the context so permits.

“Reserves” means reserves set aside by the Company for working capital, capital improvements, payments of periodic expenditures, debt service, or other purposes determined to be appropriate by the Management Committee.

“Secretary of State” means the Secretary of State of the State of Maine.

“Subsidiary” means Athens Capital Holdings, LLC, a Maine limited liability company.

“Transfer” means voluntarily sell, assign, transfer, exchange, pledge, encumber, hypothecate, or otherwise dispose of.

“Treasury Regulations” means proposed, temporary and final regulations promulgated under the Code in effect as of the date of filing the Articles of Organization and the corresponding sections of any regulations subsequently issued that amend or supersede such regulations.

## ARTICLE II

### FORMATION OF COMPANY; DURATION

2.1 Formation. The Company was formed at the time of the filing of the initial Articles of Organization with the Secretary of State.

2.2 Duration. The Company shall exist indefinitely, until dissolved in accordance with this Operating Agreement or applicable law.

2.3 Name. The name of the Company is Athens Energy LLC. The Company may do business under any assumed name that is permissible under the Act and under all other applicable laws, rules, and regulations and is approved by the Management Committee.

2.4 Principal Place of Business. The Company's principal place of business shall be Athens, Maine, or such other location as is approved by the Management Committee.

2.5 Registered Office and Registered Agent. The address of the Company's registered office is 84 Harlow Street, P.O. Box 1401, Bangor, Maine 04402. The name and address of the Company's registered agent is William H. Hanson, 84 Harlow Street, P.O. Box 1401, Bangor, Maine 04402. The registered office and registered agent may be changed from time to time as the Management Committee deems advisable by filing notice of such changes with the Secretary of State in accordance with M.R.S. Title 5, Chapter 6A (Maine Model Registered Agents Act).

2.6 Amended and Restated Operating Agreement. This Amended and Restated Operating Agreement amends and restates, in its entirety, the existing Operating Agreement of the Company and any amendments thereto.

## ARTICLE III

### BUSINESS OF COMPANY

The Company exists for the purpose of engaging in any and all business to the fullest extent permitted under the Act and other applicable law.

## ARTICLE IV

### MEMBERS AND MEMBERSHIP UNITS

4.1 Membership Units. Proprietary interests in the Company are constituted exclusively by Membership Units. Except as otherwise provided herein, (i) each Membership Unit shall represent an identical economic interest in the Company and (ii) each such Unit shall be entitled to one (1) vote on any matter submitted to a vote of the Members. Authorized Membership Units in the Company are as follows: 1,000 Units. All Units shall be securities governed by Article 8 of the Uniform Commercial Code as in effect in the State of Maine, and shall be evidenced by certificates in the form attached hereto as Schedule C, which certificates shall be signed by the

Management Committee or an authorized Officer of the Company. The certificated Units shall bear a legend in substantially the following form: “THIS CERTIFIES THAT \_\_\_\_\_ IS THE OWNER OF \_\_\_\_ MEMBERSHIP UNITS IN ATHENS ENERGY LLC. THIS CERTIFICATE, INCLUDING THE RIGHTS ATTENDANT THERETO, SHALL BE A SECURITY GOVERNED BY ARTICLE 8 OF THE MAINE UNIFORM COMMERCIAL CODE. THIS CERTIFICATE AND THE MEMBERSHIP UNIT(S) REPRESENTED BY THIS CERTIFICATE ARE TRANSFERRABLE ONLY IN COMPLIANCE WITH THE PROVISIONS OF THE AMENDED AND RESTATED LIMITED LIABILITY COMPANY AGREEMENT OF ATHENS ENERGY LLC, AND WITH APPLICABLE LAW. THE MEMBERSHIP UNIT(S) REPRESENTED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE UNITED STATES SECURITIES ACT OF 1933, AS AMENDED, AND APPLICABLE STATE LAWS, AND MAY NOT BE SOLD, ASSIGNED, OR TRANSFERRED EXCEPT PURSUANT TO AN EXEMPTION FROM THE SECURITIES ACT AND APPLICABLE STATE LAW. ANY ATTEMPTED TRANSFER OF THE MEMBERSHIP UNIT(S) IN CONTRAVENTION OF THESE RESTRICTIONS ON TRANSFER WILL BE VOID.” Replacement certificates shall not be issued without the express written consent of Farm Credit, as provided in Section 10.5 of this Agreement.

4.2 Members. As of the date of this Operating Agreement, the names of the Member(s), their respective Capital Contributions and the number of their Membership Units are set forth on Schedule A.

## ARTICLE V

### RIGHTS AND DUTIES OF MEMBERS

5.1 Management by Management Committee. Subject to the additional terms of this Operating Agreement, the Company and its business shall be managed by the Management Committee in accordance with the provisions of Article VII hereof.

5.2 Voting Rights. Except as otherwise specifically required by the Act or other applicable law, (i) all Members entitled to vote on a matter shall be entitled to one (1) vote for each Membership Unit he owns which is entitled to be voted on such matter, and (ii) the Members shall only be entitled to vote with respect to matters which specifically require a vote of the Members under the Act.

5.3 Restriction on Authority of Members. Except to the extent provided by the Act or by any other express terms of this Operating Agreement, no Member shall have the power to act for or on behalf of, or to bind, the Company without first obtaining the authorization, by resolution or by written consent, of the Management Committee. Such resolution or written consent may be specific as to a proposed action, or may be continuing until revoked by the Management Committee, and such specific or continuing resolution or written consent shall be effective according to its terms.

5.4 Indemnification by Members. A Member (including a Manager) who takes any unauthorized action purportedly on behalf of the Company shall indemnify and hold the

Company and the other Members harmless from any costs (including without limitation reasonable attorneys' fees) or damages incurred by any such indemnified parties as a result thereof. The Company and any Member entitled to indemnification under this Section 5.4 shall be entitled to set off against, withhold, proceed against or collect or receive from the Company, as applicable, all or any part of the indemnifying Member's Membership Units, any amounts distributable with respect thereto or, following the withdrawal of such Member or the dissolution of the Company, any amounts payable to the indemnifying Member pursuant to this Operating Agreement, in order to enforce his/its rights hereunder. The obligations of the Members hereunder shall survive the dissociation of any Member from the Company and the dissolution or termination of the Company.

5.5 Company Debt Liability. The Members will not be personally liable for any debts, losses, liabilities or expenses of the Company beyond their respective Capital Contributions, except as expressly provided in this Operating Agreement or as otherwise required by applicable law. Nothing in this section modifies the Members' liability to Farm Credit to the extent set forth in other agreements between and among those parties.

5.6 No Fiduciary Duties; Limitation of Liability. No Member (including a Manager) shall have any fiduciary duties to the Company, another Member or another Person that is a party to or otherwise bound by this Agreement other than as required by the implied contractual covenant of good faith and fair dealing and any other or greater duties, whether arising at law or in equity, are hereby eliminated. No Member (including a Manager) shall be liable to the Company, another Member or another Person that is a party to or otherwise bound by this Agreement, for any act or omission taken or suffered by such Member in connection with the business or operations of the Company or arising out of this Agreement, except (a) as provided in Section 5.3 (Indemnification by Members) above, (b) to the extent that such act or omission shall have constituted a bad faith violation of the implied covenant of good faith and fair dealing, or (c) to the extent such act or omission shall have constituted an uncured material breach of this Agreement. A Member in breach of this Agreement will have 30 days after the Member's receipt of written notice of breach to cure the Member's breach, unless the breach is not reasonably capable of being cured, in which case the right to cure will not apply.

5.7 Access to Company Books. Subject to such reasonable restrictions as may be imposed by the Management Committee, each Member and Farm Credit shall have the right, during ordinary business hours and upon reasonable notice, to inspect and copy any Company documents, books and records.

5.8 Priority and Return of Capital. Except as otherwise provided in this Operating Agreement, no Member shall have priority over any other Member as to the return of Capital Contributions and as to distributions; provided that this Section shall not apply to loans (as distinguished from Capital Contributions) which a Member has made to the Company.

5.9 Other Activities. Each of the Members acknowledges that the other Members are engaged in other business activities, which shall not be restricted by this Agreement except as specifically provided in this Agreement.

## ARTICLE VI

### MEETINGS OF MEMBERS

6.1 Meetings. Special or annual meetings of the Members for any purpose may be called by the Management Committee, by any Member or Members holding at least 50% of the Membership Units entitled to vote at such meeting, or by Farm Credit. Farm Credit will have the right to attend all meetings of the Members.

6.2 Place of Meetings. The Person setting the time for or calling a meeting pursuant to Section 6.1 hereof may designate any place, within or without the State of Maine, as the place of meeting for any such meeting of the Members. If no designation is made, the place of meeting shall be the principal office of the Company.

6.3 Notice of Meetings. Written notice stating the place, day and hour of a meeting of the Members and the purpose or purposes for which the meeting is called shall be delivered to each Member entitled to vote at such meeting and to Farm Credit not less than ten (10) and no more than thirty (30) days before the date of the meeting by or at the direction of the Person setting the time for or calling the meeting. The time of delivery of any notice of a meeting of the Members shall be determined pursuant to Section 12.1 hereof.

6.4 Meeting of all Members. If all of the Members entitled to vote on a particular matter shall meet at any time and place and consent to the holding of a meeting at such time and place, and if Farm Credit has been given prior notice of the meeting under Section 6.3, such meeting shall be valid without call or notice, and at such meeting lawful action may be taken with respect to such matter.

6.5 Record Date. For the purpose of determining Members entitled to notice of or to vote at any meeting of Members or any adjournment thereof, or Members entitled to receive payment of any distribution, the date on which notice of the meeting is mailed or the date on which the resolution declaring such distribution is adopted, as the case may be, shall be the record date for such determination of Members. When a determination of Members entitled to vote at any meeting of Members has been made as provided in this Section, such determination shall apply to any adjournment thereof.

6.6 Quorum. Any one or more Members holding at least fifty percent (50%) of the Membership Units entitled to be voted at any meeting of the Members or by means of a telephone connection or other electronic means which allows full opportunity to both hear and address the meeting, represented in person, or by one or more duly authorized representatives, shall constitute a quorum at such meeting of Members. In the absence of a quorum at any such meeting, the Members holding a majority of the Membership Units so represented may adjourn the meeting from time to time for a period not to exceed sixty (60) days without further notice. However, if the adjournment is for more than sixty (60) days, or if after the adjournment a new record date is fixed for the adjourned meeting, a notice of the adjourned meeting shall be given to each Member of record entitled to vote at the meeting and to Farm Credit. At such adjourned

meeting at which a quorum shall be present or represented, any business may be transacted which might have been transacted at the meeting as originally noticed. The Members present at a duly organized meeting may continue to transact business until adjournment, notwithstanding the withdrawal during such meeting of that number of represented Membership Units whose absence would cause there to be present less than a quorum.

6.7 Manner of Acting. If a quorum is present, any action of the Members shall be approved by the Majority Vote of the Members, unless a greater or different vote is required by the Act, by the Articles of Organization, or by this Operating Agreement. Unless otherwise specifically provided herein or required under applicable law, Members who have an interest (economic or otherwise) in the outcome of any particular matter upon which the Members vote or consent may vote or consent upon any such matter and their Membership Units, vote or consent, as the case may be, shall be counted in the determination of whether the matter was approved by the Members.

6.8 Action by Members Without a Meeting. Action required or permitted to be taken at a meeting of Members may be taken without a meeting if the action is evidenced by one or more written consents describing the action taken, signed by the Members entitled to vote whose votes would be sufficient to take the action in question if given at a meeting, and acknowledged by Farm Credit, and delivered to the Company for inclusion in the minutes or for filing with the Company records. Action taken under this Section 6.8 is effective when Members entitled to vote whose votes would be sufficient to take the action in question if given at a meeting have signed the consent, and Farm Credit has acknowledged the consent, unless the consent specifies a different effective date. The record date for determining Members entitled to take action without a meeting shall be the date the first Member signs a written consent. A copy of any action taken under this Section 6.8 shall be promptly provided to all Members who have not signed the written consent(s) in question and to Farm Credit.

6.9 Waiver of Notice. When any notice is required to be given to any Member, a waiver thereof in writing signed by the Person entitled to such notice, whether before, at, or after the time stated therein, shall be equivalent to the giving of such notice. The execution of a written consent as referenced in Section 6.8 above shall constitute a waiver of any required notice of the action being taken.

## ARTICLE VII

### MANAGEMENT BY MANAGEMENT COMMITTEE

7.1 Powers of Management Committee. Except to the extent otherwise specifically provided by the terms of this Agreement or the Act, the Management Committee shall have complete and exclusive authority to take, or to authorize the taking of, any and all actions necessary, convenient, or desirable for the management of the Company and of its business. By way of illustration but not of limitation, it is intended that the Management Committee shall have (but not be limited to) all of the powers and authority of the Board of Directors of a Maine business corporation, including, without limitation the power and authority to take any of the following actions on behalf of the Company, subject to Section 7.2:

- (a) purchase, license, lease, or otherwise acquire any assets or property;
- (b) sell, license, lease, pledge, mortgage, or otherwise dispose of or encumber any part of the business of the Company and/or all or any part of the assets or property of the Company;
- (c) enter into contracts (including guaranties), incur liabilities, borrow money, issue notes, bonds, and other obligations, and offer, sell, and issue new Membership Units;
- (d) lend money, invest and reinvest the Company's funds, and receive and hold assets and property as security for repayment;
- (e) conduct the Company's business, establish Company offices, and exercise the powers of the Company within or without the State of Maine;
- (f) employ, engage, or retain any Persons to act as employees, agents, brokers, accountants, lawyers or in such other capacity as the Management Committee may deem necessary or desirable;
- (g) institute, prosecute, defend, and/or settle any proceeding or action in the Company's name;
- (h) participate in partnership agreements, joint ventures, or other associations of any kind with any Person or Persons; and
- (i) take any other action that furthers the business and affairs of the Company.

7.2 Limitations on Authority of Management Committee. In addition to any restrictions or limitations upon the authority of the Management Committee contained in the Act or elsewhere in this Agreement, the Management Committee shall have no authority to take any of the following actions, unless such actions are first authorized by a Majority Vote of the Members and the express written consent of Farm Credit, such consent not to be unreasonably withheld, conditioned, or delayed:

- (a) amend the Articles of Organization;
- (b) amend this Operating Agreement; or
- (c) cause the Company to merge, consolidate, or convert with or into any corporation, firm or other entity.

7.3 Constitution and Election of Management Committee. The Management Committee shall consist of not less than one (1) and not more than five (5) Persons, as fixed by a Majority

Vote of the Members from time to time. The Managers shall be elected by a Majority Vote of the Members. Each Manager shall hold office until a successor shall have been duly elected or appointed and shall have qualified or until such Manager's death, disability, resignation, or removal pursuant to this Operating Agreement. A Manager may be removed at any time, for any reason or no reason, by the Majority Vote of the Members. The Member(s) hereby designate the following Person(s) as the Manager(s) of the Company:

Linkletter & Sons, Inc.

7.4 Meetings and Actions of the Management Committee. Meetings of the Management Committee may be called by any Manager by giving notice to all Managers no less than twenty-four (24) hours before the time set for the meeting. The notice shall set forth the date, time, place, and purpose of the meeting, and the time of delivery of such notice shall be determined pursuant to Section 12.1 hereof. A majority of the Managers entitled to vote at a meeting of the Management Committee, present in person or by means of a telephone connection which allows full opportunity to both hear and to address the meeting, shall constitute a quorum at any meeting of the Management Committee. Action of the Management Committee shall require the affirmative vote, assent, consent, or other action of a majority of the Managers entitled to vote at such meeting of the Management Committee, except where the Act specifically requires otherwise. Action taken without a meeting, and evidenced by unanimous written consents signed by the Managers serving as of the date the first such consent is signed, shall be as valid as the action of the Management Committee as if it had been taken at a meeting.

7.5 Compensation of Managers. Except as approved by a Majority Vote of the Members or as otherwise provided herein, the Company may not compensate Managers in their capacity as such, but may reimburse them for any actual and necessary expenses incurred by the Managers in such capacity.

7.6 Officers. The Management Committee may designate one or more Persons to be officers of the Company (collectively, the "Officers") and may remove any such Person as an officer of the Company. Any officers so designated shall have such titles and, subject to the other provisions of this Operating Agreement, have such authority and perform such duties as the Management Committee may delegate to them, including the power to execute documents, and shall serve at the pleasure of the Management Committee. Unless the authority of the Person designated as the officer in question is limited or expanded in the document appointing such officer or is otherwise specified by the Management Committee, any officer so appointed shall have the same authority to act for the Company as a corresponding officer of a Maine corporation would have to act for a Maine corporation in the absence of a specific delegation of authority; provided, however, that unless such power is specifically delegated to the officer in question either for a specific transaction or generally, no such officer shall have the power to act in a manner that is contrary to the provisions of Article VII hereof. The Management Committee, in its discretion, may ratify any act previously taken by an officer acting on behalf of the Company. The names of the officers of the Company shall be set forth on a schedule maintained at the Company's registered office. Such schedule may be modified from time to time to reflect changes thereto and shall be made available to any Member upon request. The

current Officers of the Company designated by the Management Committee are listed on Schedule B hereto.

7.7 Compensation of Officers. The salaries, if any, of the Officers shall be reasonably fixed from time to time by the Management Committee. No Officer shall be prevented from receiving a salary solely for the reason that such Officer is also a Member.

7.8 Indemnification.

(a) General. The Company shall in all cases indemnify (i) Farm Credit and (ii) any Person who is or was a Member, Manager or Officer, and who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was, in the case of Farm Credit, a creditor with certain rights under this Agreement, and in all other cases, a Member, Manager or Officer, against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement, to the extent actually and reasonably incurred by Farm Credit or that Person, as applicable, in connection with such action, suit or proceeding (collectively, "Expenses"); provided, that no indemnification may be provided for any Person with respect to any matter as to which that Person shall have been finally adjudicated:

(i) Not to have acted honestly or in good faith;

(ii) Not to have acted in the reasonable belief that such Person's action was in or not opposed to the best interests of the Company or its Members;

(iii) With respect to any criminal action or proceeding, to have had reasonable cause to believe that that Person's conduct was unlawful; or

(iv) To have acted without authorization under or in violation of this Operating Agreement.

The Company may, in the discretion of the Management Committee, indemnify any other Person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he is or was an employee or agent of the Company, or is or was serving at the request of the Company as a director, officer, trustee, partner, fiduciary, employee, or agent of a corporation, partnership, joint venture, trust, pension or other employee benefit plan, or other enterprise, against Expenses, subject to the foregoing proviso.

The termination of any action, suit or proceeding by judgment, order or conviction adverse to that Person, or by settlement or plea of nolo contendere or its equivalent, shall not of itself create a presumption that (i) that Person did not act honestly or in the reasonable belief that that Person's action was in or not opposed to the best interests of the Company or its Members or, in the case of a Person serving as a fiduciary of an employee benefit plan or trust, in or not opposed to the best interests of that plan or trust or its participants or beneficiaries, (ii) with respect to any criminal action or proceeding, had reasonable cause to believe that that Person's conduct was

unlawful, or (iii) that Person acted without authorization under or in violation of this Operating Agreement.

(b) Derivative Actions. The Company shall not indemnify any Person with respect to any claim, issue or matter asserted by or in the right of the Company as to which that Person is finally adjudicated to be liable to the Company unless the court in which the action, suit or proceeding was brought shall determine that, in view of all the circumstances of the case, that Person is fairly and reasonably entitled to indemnity for such amounts as the court shall deem reasonable.

(c) Advancement of Expenses. Expenses (including, without limitation, reasonable attorneys fees) incurred in defending a civil, criminal, administrative or investigative action, suit or proceeding with respect to which indemnification exists under Section 7.8(a) hereof, shall be paid by the Company in advance of the final disposition of that action, suit or proceeding.

(d) Indemnification Rights Under Operating Agreement Not Exclusive; Enforceable by Separate Action. The indemnification and entitlement to advances of expenses provided by this Section 7.8 shall not be deemed exclusive of any other rights to which those indemnified may be entitled under any agreement, vote of the Members or otherwise, both as to action in that Person's official capacity and as to action in another capacity while holding such office, and shall continue as to a Person who has ceased to be a Manager, Officer, employee, agent, trustee, partner or fiduciary and shall inure to the benefit of the heirs, executors and administrators of such a Person. A right to indemnification required by this Section 7.8 may be enforced by a separate action against the Company if an order for indemnification has not been entered by a court in any action, suit or proceeding in respect to which indemnification is sought.

(e) Insurance. The Company may purchase and maintain insurance on behalf of any Person who is or was a Member, Manager, Officer, employee or agent of the Company, against any liability asserted against that Person and incurred by that Person in any such capacity, or arising out of that Person's status as such, whether or not the Company would have the power to indemnify that Person against such liability under this Section 7.8.

(f) Amendment. Any amendment, modification or repeal of this Section 7.8 shall not deny, diminish or otherwise limit the rights of any Person to indemnification or advance hereunder with respect to any action, suit or proceeding arising out of any conduct, act or omission occurring or allegedly occurring at any time prior to the date of such amendment, modification or repeal.

## ARTICLE VIII

### CONTRIBUTIONS TO THE COMPANY AND CAPITAL ACCOUNTS

8.1 Members' Capital Contributions. As of the date of this Agreement, each Member shall have transferred to the Company the money or other property described on Schedule A attached hereto as his Capital Contribution, and the Members agree that the value of the capital contributions shall be as shown on Schedule A.

8.2 Additional Capital Requirements. No Member shall be required to make any Capital Contributions in addition to those contemplated by Section 8.1 hereof, nor to restore any Deficit Capital Account. No Member may make additional Capital Contributions without the prior written authorization of the Management Committee.

8.3 Capital Accounts. A separate Capital Account shall be maintained for each Member in accordance with the capital accounting rules of Section 704(b) of the Code and the Treasury Regulations thereunder. The balance in each Member's Capital Account as of the date hereof shall be the amount of such Member's Capital Contribution (as set forth on Schedule A hereto). Thereafter, a Member's Capital Account shall be credited with (i) the amount of any subsequent Capital Contribution to the Company by such Member; (ii) such Member's distributive share of items of Company income and gain; and (iii) such other amounts as may be required for the Capital Account to be determined and maintained in accordance with the rules of Section 1.704-1(b)(2)(iv) of the Treasury Regulations (including Section 1.704-1(b)(2)(iv)(g) thereof). A Member's Capital Account shall be debited with (I) such Member's distributive share of items of Company loss and deduction; (II) the amount of cash or the fair market value of any property distributed from the Company to such Member (reduced by the amount of debt, if any, assumed by such Member in connection with the distribution); and (III) such other amounts as may be required for the Capital Account to be determined and maintained in accordance with the rules of Section 1.704-1(b)(2)(iv) of the Treasury Regulations (including Section 1.704-1(b)(2)(iv)(g) thereof). It is the parties' specific intent that Capital Accounts shall be maintained in accordance with the capital account maintenance rules contained in Section 704(b) of the Code and the Treasury Regulations thereunder, and this Section 8.3 shall be construed and applied to achieve such result.

8.4 Transferred Interests. In the event that any Membership Units are transferred in accordance with the terms of this Agreement, the transferee shall succeed to the Capital Account of the transferor to the extent it relates to the transferred Membership Units.

8.5 Withdrawal or Reduction of Members' Contributions to Capital. Except as otherwise specifically provided in this Agreement, a Member shall not receive out of the Company's property any part of his Capital Account until all liabilities of the Company, except liabilities to Members on account of their Capital Accounts, have been paid or there remains property of the Company sufficient to pay them; and a Member, irrespective of the nature of his Capital Contribution, has only the right to receive cash in return for his Capital Account, and only to the extent provided by the terms of this Agreement.

## ARTICLE IX

### ALLOCATIONS, INCOME TAX, DISTRIBUTIONS, ELECTIONS AND REPORTS

9.1 Allocations of Profits and Losses from Operations. The Net Profits and Net Losses of the Company for each Fiscal Year will be allocated among the Members as follows:

(a) Net Profits shall be allocated:

(i) First, to the Members who received allocations of Net Losses under Section 9.1(b) with respect to one or more prior Fiscal Years, in proportion to and in the reverse order of the allocation of such Net Losses, until the cumulative allocations of Net Profits under this Section 9.1(a) for all Fiscal Years equals the cumulative allocations of Net Losses under Section 9.1(b) for all Fiscal Years; and

(ii) Second, to all of the Members, pro rata, in accordance with their respective Membership Percentages.

(b) Net Losses shall be allocated:

(i) First, to the Members who received allocations of Net Profits under Section 9.1(a)(ii) with respect to one or more prior Fiscal Years, in proportion to such allocations, until the cumulative allocations of Net Losses under this Section 9.1(b)(i) for all Fiscal Years equals the cumulative allocations of Net Profits under Section 9.1(a)(ii) for all Fiscal Years;

(ii) Second, to the Members having positive Capital Account balances, pro rata, in accordance with such balances; and

(iii) Third, to all of the Members, pro rata, in accordance with their respective Membership Percentages.

9.2 Special Allocations to Capital Accounts and Certain Other Income Tax Allocations. Notwithstanding Section 9.1 hereof:

(a) If any Member unexpectedly receives any adjustments, allocations, or distributions described in Sections 1.704-1(b)(2)(ii)(d)(4), (5), or (6) of the Treasury Regulations, which create or increase a Deficit Capital Account of such Member, then items of Company income and gain (consisting of a pro rata portion of each item of Company income, including gross income, and gain for such year and, if necessary, for subsequent years) shall be specially allocated to such Member in an amount and manner sufficient to eliminate, to the extent required by the Treasury Regulations, the Deficit Capital Account so created as quickly as possible. It is the parties' intent that this Section 9.2(a) be interpreted to comply with the alternate test for economic effect set forth in Section 1.704-1(b)(2)(ii)(d) of the Treasury Regulations.

(b) If any Member would have a Deficit Capital Account at the end of any Company taxable year, the Capital Account of such Member shall be specially credited with items of membership income (including gross income) and gain in the amount of such excess as quickly as possible.

(c) With respect to any Member, notwithstanding the provisions of Section 9.1 hereof, the amount of Net Losses for any taxable year that would otherwise be allocated to such

Member pursuant to Section 9.1 hereof shall not cause such Member to have a Deficit Capital Account balance, or increase such Member's Deficit Capital Account balance. Any Net Losses in excess of the limitation set forth in this Section 9.2(c) shall be allocated among the other Members pro rata, to the extent that each, respectively, is liable or exposed with respect to any debts or other obligations of the Company.

(d) Notwithstanding any other provision of this Section 9.2, if there is a net decrease in the Company's minimum gain as defined in Treasury Regulation Section 1.704-2(d) during a taxable year of the Company, then the Capital Accounts of each Member shall be allocated items of income (including gross income) and gain for such year (and if necessary for subsequent years) equal to that Member's share of the net decrease in Company minimum gain. This Section 9.2(d) is intended to comply with the minimum gain charge-back requirement of Section 1.704-2 of the Treasury Regulations and shall be interpreted consistently therewith. If in any taxable year that the Company has a net decrease in the Company's minimum gain, if the minimum gain charge-back requirement would cause a distortion in the economic arrangement among the Members and it is not expected that the Company will have sufficient other income to correct that distortion, the Management Committee may in its discretion (and shall, if requested to do so by a Member) seek to have the Internal Revenue Service waive the minimum gain charge-back requirement in accordance with Treasury Regulation Section 1.704-2(f)(4).

(e) Notwithstanding any other provision of this Section 9.2, if there is a net decrease in partner (Member) nonrecourse debt minimum gain, as defined in Treasury Regulation Section 1.704-2(i), during a taxable year of the Company, then the Capital Account of each Member shall be allocated items of income (including gross income) and gain for such year (and if necessary for subsequent years) in proportion to and to the extent of each such Member's share if any, of such net decrease in partner (Member) nonrecourse debt minimum gain, except to the extent that such allocation would not be required by Treasury Regulation Section 1.704-2(i)(4). This Section 9.2(e) is intended to comply with the partner (Member) nonrecourse debt minimum gain charge-back requirement of Section 1.704-2(i) of the Treasury Regulations and shall be interpreted consistently therewith.

(f) Items of Company loss, deduction and expenditures described in Section 705(a)(2)(B) of the Code which are attributable to any nonrecourse debt of the Company and are characterized as partner (Member) nonrecourse deductions under Section 1.704-2(i) of the Treasury Regulations shall be allocated to the Members' Capital Accounts in accordance with said Section 1.704-2(i) of the Treasury Regulations.

(g) Beginning in the first taxable year in which there are allocations of "nonrecourse deductions" as described in Section 1.704-2(b) of the Treasury Regulations) such deductions shall be allocated to the Members in the same manner as Net Profits or Net Losses are allocated for such period.

(h) In accordance with Section 704(c)(1)(A) of the Code and Section 1.704(b)(2)(iv)(g) of the Treasury Regulations, if a Member contributes property or is deemed to contribute property pursuant to Treasury Regulation Section 1.704-1(b)(2)(iv)(g) with a Gross Asset Value that differs from its adjusted basis at the time of contribution (or deemed

contribution), income, gain, loss and deductions with respect to the property shall, solely for federal income tax purposes (and not for Capital Account purposes), be allocated among the Members so as to take account of any variation between the adjusted basis of such property to the Company and its Gross Asset Value as of the beginning of the relevant taxable year (or portion thereof). The allocation method shall be the “Remedial Allocation” method pursuant to Treasury Regulation Section 1.704-3(d).

(i) Any credit or charge to the Capital Accounts of the Members pursuant to Sections 9.2 (a), (b), (c), (d), (e), (f) and/or (g) hereof shall be taken into account in computing subsequent allocations of Net Profits and Net Losses pursuant to Section 9.1 hereof, so that the net amount of any items charged or credited to Capital Accounts pursuant to Sections 9.1 and 9.2 (a), (b), (c), (d), (e), (f) and/or (g) hereof and shall to the extent possible, be equal to the net amount that would have been allocated to the Capital Account of each Member pursuant to the provisions of this Article IX if the special allocations required by Sections 9.2 (a), (b), (c), (d), (e), (f) and/or (g) hereof had not occurred.

### 9.3 Mandatory Distributions; Discretionary Distributions of Distributable Cash; Tax Distributions.

(a) *Mandatory Distributions.* The Company shall make monthly distributions to the Members pro rata in accordance with their respective Membership Percentages on the last business day of each month of all Company revenue net of (1) interest, fees, and expenses due and owing to Lenders (as such term is defined in the Loan Agreement, by and among, the Company, the Subsidiary, CCG Sub-CDE 25, LLC, a Delaware limited liability company, CCG Sub-CDE 29, LLC, a Delaware limited liability company, CCG Sub-CDE 31, LLC, a Delaware limited liability company) by the Company or the Subsidiary, (2) all operating expenses and expenditures incurred incident to the normal operation of the Company’s business, including rent due and owing to Subsidiary; and (4) such Reserves as the Management Committee deems reasonably necessary to the proper operation of the Company’s business, which amount shall not be greater than a reasonable estimate of the Company’s expected operating expenses for the two months following such distribution.

The Members hereby direct the Company to:

(i) deposit sixty percent (60%) of such mandatory distributions to the “Lockbox Account” named in that certain Hypothecation, Pledge, Security Agreement and Assignment of Distributions by and between Farm Credit and the Members, to be entered into on or about September 12, 2014 (“Pledge Agreement”). Such distributions shall be used exclusively as provided for in the Pledge Agreement; and

(ii) pay the remaining forty (40%) of such mandatory distributions directly to such Member in the form and manner reasonably requested by such Member. Such distributions are intended to approximate the federal and state income taxes due with respect to income earned by the Company and allocated to such Member. On or before April 15 of each year, each Member shall certify to Farm Credit as

to the cumulative amount of federal and state income taxes each paid (or if a Member is pass-through tax entity, the cumulative amount of federal and state income taxes paid by its members or shareholders) on account of their ownership of the Membership Units with respect to the prior calendar year. If the actual amount of income taxes paid by the Members (or if a Member is pass-through tax entity, the cumulative amount of federal and state income taxes paid by its members or shareholders) on an aggregate basis in a prior calendar year is materially less than the amount of distributions under this Section 9.3(a)(ii) in such prior calendar year (a “Prior Year Excess Tax Distribution”), the Members hereby direct that the distributions which would otherwise be made directly to the Members under this Section 9.3(a)(ii) in the then current calendar year first be directed to the Lockbox Account in an amount equal to the Prior Year Excess Tax Distribution.

To the extent the Management Committee reasonably determines that distributions under this Section 9.3 would have an adverse income tax impact on any Member, the Management Committee shall make such distributions on a non-pro rata basis; provided, that in no event shall less than sixty percent of the aggregate of all mandatory distributions described in this Section 9.3(a) be directed to the Lockbox Account.

(b) *Discretionary Distributions.* Except as otherwise provided in this Section, and Sections 9.5 and 11.3, the Company may in the discretion of the Management Committee distribute Distributable Cash to the Members. Any such distribution shall be made to all of the Members, pro rata, in accordance with their respective Membership Percentages. All amounts withheld pursuant to the Code or any provisions of state or local tax law with respect to any payment or distribution to the Members from the Company shall be treated as amounts distributed to the relevant Member or Members pursuant to this Section 9.3. No distributions may be made under this subsection without the prior written consent of Farm Credit, which may be withheld in Farm Credit’s sole discretion.

(c) *Tax Distributions.* The Company may annually distribute to each Member an amount of cash sufficient in amount to pay any state and federal income taxes on income earned by the Company and allocated to such Member. Distributions hereunder shall be made to each Member in proportion to his or her Membership Percentage, in an amount reasonably calculated to equal or exceed the highest tax liability for the year in question of any Member on account of his or her membership in the Company (taking into account the deductibility of state income taxes for federal income tax purposes). Any distribution made pursuant to Section 9.3(a)(i) or 9.3(b) shall be deemed a distribution pursuant to this Section to the extent such distributions are sufficient to satisfy the requirements of this Section 9.4. No distributions may be made under this subsection without the prior written consent of Farm Credit, such consent not to be unreasonably withheld, conditioned or delayed.

9.4 Limitation Upon Distributions. Notwithstanding anything contained herein to the contrary, no distribution shall be declared and paid if, in the determination of the Management Committee, after giving effect to the distribution, the distribution would be improper under Section 1555 of the Act.

9.5 Accounting Principles. For financial accounting purposes (but not for federal income tax or Capital Account maintenance purposes) the Net Profits and Net Losses of the Company shall be determined in accordance with generally accepted accounting principles applied on a consistent basis.

9.6 Interest On and Return of Capital Contributions. No Member shall be entitled to interest on any Capital Contribution or to return of any Capital Contribution except as otherwise specifically provided for herein.

9.7 Returns and other Elections. The Company shall prepare and timely file all tax returns required to be filed by the Company pursuant to the Code and all other tax returns and other reports deemed necessary and required in each jurisdiction in which the Company does business, including without limitation, all sales and use tax filings and annual reports with the Secretary of State. Copies of such returns and other reports, or pertinent information therefrom, shall be made available to the Members within a reasonable period of time after the end of the Company's Fiscal Year, and in any event, as soon as they are available.

9.8 Taxation as Partnership. The Management Committee shall make any and all elections and take any and all other actions necessary to cause the Company to be taxed as a partnership under the Code. In the event that the Company's counsel or accountants advise that, as a result of any change in applicable laws or regulations, or administrative or judicial interpretations thereof, or otherwise, it is necessary or desirable to amend the terms of this Agreement or of the Articles of Organization in order to preserve or protect the Company's treatment as a partnership for tax purposes, then

(a) the Members shall make such amendments to this Agreement or the Articles of Organization, as the case may be, that preserve and protect such partnership status, and which secondarily preserve the economic arrangement among the parties to the greatest extent possible, and which tertiary preserve the management structure of the Company to the greatest extent possible; and

(b) all Members agree to vote for and approve any such amendments.

9.9 Elections; Tax Matters Member. Any elections which may or are required to be made by the Company for tax purposes, whether on a federal, state or local return, or otherwise, shall be determined by the Management Committee. The tax matters member shall be Linkletter & Sons, Inc. or such other Member as shall from time to time be designated by the Management Committee, and shall have and exercise all duties and privileges of a tax matters member or tax matters partner under the Code. The tax matters member may call upon the Management Committee and employees for assistance and advice, and may retain attorneys, accountants, or other professional advisors, all to the extent the tax matters member may deem advisable. The tax matters member shall to the extent reasonably practicable consult with the other Members prior to taking any action or decision which could have a material financial consequence to any Member or to the Company. The tax matters member shall be entitled to reimbursement by the

Company of his actual costs (including reasonable attorney's fees) incurred in the course of serving as tax matters member.

## ARTICLE X

### TRANSFERABILITY

10.1 Admission of Additional Members. No additional Members may be admitted unless authorized by the Management Committee and agreed to in writing by Farm Credit. In the event of the admission of additional Member(s), such admission shall be conditioned on the execution by such Person(s) of a counterpart of this Agreement (or an amended and restated version of hereof) and the payment by such Person(s) of any required Capital Contribution. Following the admittance of any new Member, Schedule A shall be revised to reflect the name of such new Member and the number of Membership Units issued or transferred to such new Member. If a Member who is a natural person dies or a court of competent jurisdiction adjudges him or her to be incompetent to manage his or her person or his or her property, subject to the other provisions of this Operating Agreement, the Member's executor, administrator, guardian, conservator, or other legal representative may exercise all of the Member's rights for the purpose of settling his or her estate or administering his or her property.

10.2 Transferee. Unless and until any transferee of a Membership Unit is admitted as a Member pursuant to this Article X, such transferee (a) has only the right to receive, in accordance with the transfer, any allocations and/or distributions to which the transferor would otherwise be entitled and (b) is not entitled to participate in the management or conduct of the Company's business, or have access to records or other information concerning the Company's business. The Membership Units belonging to a transferee who has not been admitted as a Member shall (i) be disregarded for purposes of determining quorums, votes, and all other matters related to management of the Company and (ii) remain subject to all of the restrictions, terms, and conditions contained in this Agreement.

### 10.3 Transfer General.

(a) Except as otherwise provided by this Operating Agreement, no Member shall have the right to sell, assign, transfer, exchange, pledge, encumber, hypothecate or otherwise transfer for consideration (collectively "sell" or "sale") or gift or otherwise transfer for no consideration whether or not by operation of law (collectively "gift") his Membership Units without the prior written authorization of the Management Committee. Each Member hereby acknowledges the reasonableness of the restrictions on sale and gift of Membership Units imposed by this Operating Agreement in view of the nature of the Company's business and the relationship among the Members. Accordingly, the restrictions on sale and gift contained herein shall be specifically enforceable, and any purported sale or gift of a Membership Unit (or any part thereof) made in violation of this Section shall be null and void.

(b) Notwithstanding anything contained in the foregoing Subsection (a), a Member may freely devise or bequeath by Will or other testamentary instrument all or any portion of his or her Membership Units to (i) another Member, (ii) a descendant or descendants of a Member, (iii) any trust for the benefit of a Member's spouse or descendants of a Member so long as all of the remainder beneficiary or remainder beneficiaries of the trust are descendants of a Member, or (iv) any trust or custody account under any Uniform Gifts to Minors Act or Uniform Transfers to Minors Act exclusively for the benefit of any such one or more descendants of a Member. Any Membership Unit or Units held by a custodian under any Uniform Gifts to Minors Act or Uniform Transfers to Minors Act, or any Membership Unit or Units held by a trustee, may be distributed in accordance with the terms thereof to the beneficiary or beneficiaries of such custody account or trust who is a descendant of a Member. The personal representative of the estate of a deceased Member shall, pursuant to the terms of Section 10.4(b), sell to the Company any Membership Units owned by said deceased Member which do not descend or are not bequeathed or devised in accordance with this Subsection. For purposes of this Operating Agreement, "descendant" shall include any descendants by adoption.

#### 10.4 Transfers by Operation of Law.

(a) Subject to Section 10.3(b) above, in the event that a Member (i) files a voluntary petition under any bankruptcy or insolvency law, or a petition for the appointment of a receiver, or makes an assignment for the benefit of creditors, (ii) is subjected involuntarily to such a petition or assignment, or to an attachment or other legal or equitable interest with respect to its Membership Units, and such involuntary petition, or assignment, attachment or other interest is not discharged within thirty (30) days after its date, or (iii) otherwise is subjected to a transfer of his or her Membership Units by operation of law or pursuant to a judicial decree or settlement of judicial proceedings (including, without limitation, in the event of divorce), then said Member shall be deemed to have offered all of his or her Membership Units to the Company as provided in this Section 10.4. Such offer shall be irrevocable for a period of thirty (30) days and within said time period the Company may, by delivering a written notice of acceptance to such Member, accept the offer in respect of all, but not less than all, of said Membership Units. If the Company does not elect to purchase all of the Membership Units of such Member, such Membership Units shall be deemed to have been offered to the remaining Members, individually, for an additional thirty (30) days following the thirty (30) day period during which the Company could purchase the Membership Units. The Membership Units shall be subject to purchase by the remaining Members pro rata in accordance with their Units owned. If the Company or the remaining Members do not notify said selling Member of its or their decision in respect of the Membership Units within the applicable thirty (30) day offering period, said offer to sell shall be deemed not to have been accepted by the Company or the remaining Members, as the case may be.

(b) Purchase Price. The purchase price at which the Company or a remaining Member, as the case may be, may elect to purchase all or a portion of Membership Units under this Section 10.4 shall be a ratable portion of the lesser of (i) the Selling Member's Capital Account balance adjusted through the date of purchase, or (ii) the selling Member's Capital Contributions, in either case reduced by any unpaid Capital Contributions the Selling Member is required to pay pursuant to this Operating Agreement (the "Purchase Price").

(c) Payment of Purchase Price. If the Company or any remaining Members elect to purchase Membership Units in accordance with the provisions of this Section 10.4, transfer of said Membership Units shall be made at the office of the Company on a mutually satisfactory business day within sixty (60) days of acceptance of the offer to sell by the Company, or the remaining Members, as the case may be. Delivery of instruments evidencing such transfer to the Company or the remaining Members, as the case may be, shall be made upon receipt by the transferor Member of cash representing the aggregate purchase price for the Membership Units.

10.5 Transfer and Other Provisions Applicable to Farm Credit. Notwithstanding anything in this Agreement to the contrary:

(a) The Members (for purposes of this Section 10.5, "Pledgors") intend to pledge, collaterally assign, and conditionally transfer all of their right, title and interest in the Company and Membership Units to Farm Credit as collateral security for the repayment of certain Indebtedness as defined in a certain Hypothecation, Pledge, Security Agreement and Assignment of Distributions (Membership Interests of Athens Energy, LLC) among Farm Credit and all of the Members listed on Schedule A (the "Pledge Agreement"); and

(b) Upon any Event of Default (as defined in the Pledge Agreement), (i) Farm Credit shall automatically succeed to all of the Pledgors' right, title and interest in and to the Company and Membership Units, including without limitation: (1) all of the Pledgors' "transferable interest" (as such term is defined in Section 1502 of the Act); (2) all of the Pledgors' rights to participate in the management of the business and affairs of the Company, including the right to vote on any matter submitted to a vote of the Members; and (3) all other rights and interests associated with the Pledgors' status as "members" (as such term is defined in Section 1502 of the Act) of the Company; and (ii) the Management Committee will automatically dissolve and Farm Credit will automatically be exclusively vested with all rights of the Management Committee; and

(c) Upon any Event of Default, Farm Credit shall automatically be deemed admitted as a Member of the Company and the Pledgors shall automatically be deemed dissociated as Members of the Company, and such admission and dissociation shall not require or be conditioned on: (1) the prior approval of the Management Committee, the Company, or any other Person, (2) payment of any Capital Contribution or sale price, or (3) execution of this Agreement or any consent or any other agreement by Farm Credit or any other Person; and

(d) For avoidance of doubt, the parties hereby agree that notwithstanding the transfer and admission provisions in Sections 10.1 through 10.4 of this Agreement, which shall not apply to Farm Credit, upon any Event of Default, Farm Credit shall automatically become the sole Member of the Company without the consent of the Management Committee and without any requirement to first offer the Membership Units to the Company, the Members, or any other Person; and

(e) Farm Credit shall have no liability as a Member or otherwise by virtue of the Pledge Agreement described herein; and

(f) The Company shall not dissolve, file a certificate of cancellation, dispose of all or substantially all of its assets or Membership Units, file for bankruptcy or similar protection, cease business operations, merge, consolidate with or into any other entity, or take any similar or related action without the prior written consent of Farm Credit, such consent not to be unreasonably withheld, conditioned, or delayed; and

(g) This Agreement may not be amended, modified, restated, or otherwise altered without the prior written consent of Farm Credit, such consent not to be unreasonably withheld, conditioned, or delayed, and any purported amendment, modification, restatement or other alteration of this Agreement in contravention of this subsection will be void; and

(h) No Pledgor may transfer, sell, assign, convey, grant any option with respect to, grant, create, permit or suffer any lien on or otherwise dispose of its/his/her Membership Units (by operation of law or otherwise), modify its/his/her Membership Percentage, or disassociate from the Company, and no new Member may be admitted, without the prior written consent of Farm Credit, such consent not to be unreasonably withheld, conditioned, or delayed, except that any Member may transfer, sell, assign, or convey such Person's Membership Units to any other Member without the consent of Farm Credit provided that prior to engaging in such a transaction such Members shall provide Farm Credit with all instruments, documents, and other agreements reasonably requested by Farm Credit as necessary to ensure that Farm Credit maintains a perfected, first priority security interest in all of the Membership Units of the Company; and

(i) Additional Membership Units may not be authorized or issued without the prior written consent of Farm Credit, such consent not to be unreasonably withheld, conditioned, or delayed; and

(j) No changes may be made to the make-up of the Management Committee without the prior written consent of Farm Credit, such consent not to be unreasonably withheld, conditioned, or delayed; and

(k) The Company's Articles of Organization, including any change in legal name or jurisdiction of organization, shall not be amended without the prior written consent of Farm Credit, such consent not to be unreasonably withheld, conditioned, or delayed; and

(l) It is the intent of the parties that Farm Credit shall, at all times while the Indebtedness is outstanding, have a perfected, first priority security interest in all of the Membership Units of the Company (including management and voting rights) and, upon any Event of Default, Farm Credit shall become the sole Member of the Company. Accordingly, the parties agree to promptly execute and deliver such further documents, instruments, and assurances, and take such further action, as may be reasonably requested by Farm Credit to carry out the purpose and intent of the foregoing and of this Section 10.5.

Notwithstanding anything to contrary in this Agreement, Farm Credit agrees that it shall not exercise its rights or remedies under this Section in a manner that would cause the Company and the Subsidiary (on a combined basis) to (i) cease to be a "qualified active low-income community business" under § 45D of the Code or 36 Me. Rev. Stat. Ann. §5219-HH, or (ii) cease to be a corporation or partnership for federal and Maine income taxes, or (iii) have

ownership (on a direct or indirect basis) that overlaps more than 90% with that of the ownership (on a direct or indirect basis) of Linkletter Timberlands, LLC (or the successor holder of that certain promissory note evidencing a loan from Linkletter Timberlands, LLC, to USBCDC Investment Fund 72, LLC, a Missouri limited liability company).

## ARTICLE XI

### DISSOLUTION AND TERMINATION

#### 11.1 Dissolution.

(a) The Company shall be dissolved upon the occurrence of any of the following events:

(i) the dissolution of the Company is approved by the Majority Vote of the Members; or

(ii) the sale or other disposition of all or substantially all of the assets of the Company or the permanent cessation of the Company's business operations; or

(iii) the entry of a final and non-appealable order or decree by a court of competent jurisdiction dissolving the Company.

(b) The Company shall not be dissolved, notwithstanding the occurrence of any event (except those specified in Section 11.1(a)), which would otherwise cause a dissolution under the Act, and the Management Committee is authorized to take any and all lawful actions necessary to prevent such dissolution.

11.2 Effect of Dissolution. Upon the dissolution of the Company, the Company shall cease to carry on its business, except insofar as may be necessary for the winding up of its business, but its separate existence shall continue until a certificate of cancellation has been issued by the Secretary of State or until a decree dissolving the Company has been entered by a court of competent jurisdiction.

#### 11.3 Winding Up, Liquidation and Distribution of Assets.

(a) Upon dissolution, the Management Committee shall immediately proceed to wind up the affairs of the Company in accordance with the requirements of the Act and other applicable law. In furtherance of the winding up of the Company, the Management Committee shall:

(i) Sell or otherwise liquidate all of the Company's assets as promptly as practicable (except to the extent the Management Committee may determine to cause the distribution of any assets to the Members in kind and the prospective recipients consent to such distribution in kind);

(ii) Discharge or make reasonable provision for all liabilities of the Company, including liabilities to Members who are also creditors (other than liabilities to Members for distributions and the return of capital) and establish such reserves as may be reasonably necessary to provide for contingent liabilities of the Company;

(iii) Distribute the remaining assets of the Company in the following order of priority:

(1) First, to all of the Members, pro rata, in accordance with the cumulative amount of all accrued but unpaid pre-dissolution distributions for which the Company is liable to the Members;

(2) Second, to all of the Members, pro rata, in accordance with the positive balance in their respective Capital Accounts; and

(3) Third, to all of the Members, pro rata, in accordance with their respective Membership Percentages.

(b) The Management Committee shall cause an accounting to be made of the accounts of the Company and of the Company's assets, liabilities and operations, from the date of the last previous accounting until the date of dissolution.

(c) If any assets of the Company are distributed in kind, the net fair market value of such assets as of the date of dissolution shall be determined by the Management Committee. Such assets shall be deemed to have been sold to the distributee Members in proportion to their respective Membership Percentages as of the date of dissolution for their fair market value.

11.4 Certificate of Cancellation. Upon completion of the winding up, liquidation and distribution of the assets, the Company shall be deemed terminated and the Management Committee shall forthwith file with the Secretary of State a certificate of cancellation. Thereafter, the Management Committee, as liquidating trustee, shall have authority to distribute any Company property discovered after termination, convey real estate and take such other action as may be necessary on behalf of and in the name of the Company.

11.5 Return of Capital Contribution – Nonrecourse. Except as provided by law or as expressly provided in this Agreement, upon dissolution, each Member shall look solely to the assets of the Company for the return of his Capital Contribution. If the Company's assets remaining after the payment or discharge of the debts and liabilities of the Company are insufficient to return the Capital Contribution of a Member, such Member shall have no recourse against any other Member.

## ARTICLE XII

### BOOKS AND RECORDS; REPORTS

Records to be Maintained. The Management Committee shall maintain the following records at the principal office of the Company:

- (a) A current list of the full name and last known business address of each Member or former Member;
- (b) A copy of the Articles of Organization and all amendments thereto;
- (c) A copy of this Agreement and all amendments hereto; and
- (d) Such other documents as are required to be maintained under the Act.

All records of the Company shall be open to inspection and copying by any Member and by Farm Credit on reasonable notice; provided, however, that any Member or Farm Credit, as applicable, requesting access to such records shall be responsible for all related costs of access.

## ARTICLE XIII

### MISCELLANEOUS PROVISIONS

13.1 Notices. Any notice, demand, or communication required or permitted to be given by any provision of this Agreement shall be deemed to have been sufficiently given or served for all purposes if delivered personally to the party whom the same is directed or, if sent by registered or certified mail, postage and charges prepaid, addressed to the Member's and/or the Company's address, as appropriate, which is set forth in this Agreement. Except as otherwise provided herein, any such notice shall be deemed to be given three business days after the date on which the same is deposited in a regularly maintained receptacle for the deposit of United States mail, addressed and sent as aforesaid.

13.2 Application of Maine Law. This Agreement, and the application and interpretation hereof, shall be governed exclusively by its terms and by the laws of the State of Maine (excluding any choice of laws provisions or conflict of laws principles which would require reference to the laws of any other jurisdiction).

13.3 Waiver of Action for Partition. Each Member irrevocably waives during the existence of the Company any right that he may have to maintain any action for partition with respect to the property of the Company.

13.4 Execution of Additional Instruments. Each Member hereby agrees to execute such other and further statements of interest and holdings, designations, powers of attorney and other instruments necessary for the Company to comply with any laws, rules or regulations.

13.5 Construction. In this Agreement, words used in the singular form shall be construed as though they also are used in the plural form, and vice versa, and the masculine gender shall include the feminine and neuter genders, and vice versa, where applicable.

13.6 Headings. The headings in this Agreement are inserted for convenience only and are in no way intended to interpret, define, or limit the scope, extent or intent of this Agreement or any provision hereof.

13.7 Waivers. A failure or delay by any party to enforce any right under this Agreement shall not at any time constitute a waiver of such right or any other right, and shall not modify the rights or obligations of any party under this Agreement. Any waiver by a party of any right under this Agreement shall not constitute a waiver of such right in the future.

13.8 Rights and Remedies Cumulative. The rights and remedies provided by this Agreement are cumulative and the use of any one right or remedy by any party shall not preclude or waive the right to use any or all other remedies. Said rights and remedies are given in addition to any other rights the parties may have by law, statute, ordinance or otherwise.

13.9 Severability. If any provision of this Agreement or the application thereof to any Person or circumstance shall be invalid, illegal or unenforceable to any extent, the remainder of this Agreement (or such provision) and the application thereof shall not be affected and shall be enforceable to the fullest extent permitted by law.

13.10 Heirs, Successors and Assigns. Each and all of the covenants, terms, provisions and agreements herein contained shall be binding upon and inure to the benefit of the parties hereto and, to the extent permitted by this Agreement, their respective heirs, legal representatives, successors and assigns.

13.11 Creditors. None of the provisions of this Agreement shall be for the benefit of or enforceable by any creditors of the Company except (i) in the case of Farm Credit, as provided in this Agreement, and (ii) as specifically otherwise required by the Act. Farm Credit constitutes an intended third party beneficiary of this Agreement.

13.12 Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same instrument.

13.13 Injunctive Relief. The Members acknowledge that any violation of the terms and conditions of this Agreement by a Member (“Breaching Member”) will cause irreparable harm to the other Members (each a “Non-Breaching Member”), to the Company and to Farm Credit, that damages for such harm will be incapable of precise measurement, and that, as a result, the Non-Breaching Members, the Company and Farm Credit will not have an adequate remedy at law to redress the harm caused by such violation. Therefore, in the event of a violation of any of the terms and conditions of this Agreement, in addition to their other remedies, the Non-Breaching Members, the Company or Farm Credit, as applicable, shall be entitled, without proof of actual damage, to injunctive relief, including but not limited to temporary restraining orders and/or temporary or permanent injunctions to restrain or enjoin such violation, and to specific

performance of this Agreement. Each Member agrees to and hereby does submit to jurisdiction by any state or federal court in Portland, Maine, for that purpose, and each Member hereby waives any right to raise any question of jurisdiction or venue in any action a Non-Breaching Member, the Company or Farm Credit may bring in any such court against the Breaching Member. In addition to other relief to which they shall be entitled, each Non-Breaching Member, the Company and Farm Credit shall be entitled to recover from the Breaching Member the costs and reasonable attorney's fees incurred in enforcing the terms and conditions of this Agreement.

13.14 Amendment. Subject to the additional terms of this Agreement, any amendment or restatement of this Agreement must be approved by a Majority Vote of the Members.

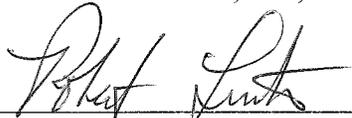
13.15 Integration. This Agreement constitutes the parties' entire agreement with respect to the subject matter hereof, and supersedes any and all prior oral or written agreements or understandings with respect thereto, including without limitation any prior Limited Liability Company Operating Agreement with respect to the Company.

**[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]**

IN WITNESS WHEREOF, the Company and the undersigned Members have executed this Operating Agreement as of the date first written above.

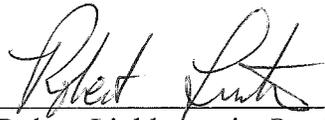
ATHENS ENERGY LLC

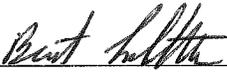
By: Linkletter & Sons, Inc., Manager

By:   
Robert Linkletter, its President

MEMBERS

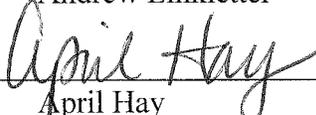
LINKLETTER & SONS, INC.

By:   
Robert Linkletter, its President

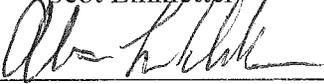
  
Brent A. Linkletter

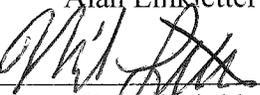
  
Matthew R. Linkletter

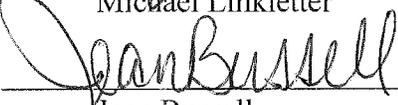
  
Andrew Linkletter

  
April Hay

  
Scot Linkletter

  
Alan Linkletter

  
Michael Linkletter

  
Jean Bussell

**SCHEDULE A**  
**to**  
**Operating Agreement**  
**for**  
**ATHENS ENERGY LLC**

<u>Member</u>	<u>Membership Units</u>	<u>Capital Contributions</u>
Linkletter & Sons, Inc.	920	\$738,520
Brent A. Linkletter	10	\$8,027
Matthew R. Linkletter	10	\$8,027
Andrew Linkletter	10	\$8,027
April Hay	10	\$8,027
Scot Linkletter	10	\$8,027
Alan Linkletter	10	\$8,027
Michael Linkletter	10	\$8,027
Jean Bussell	10	\$8,027

**SCHEDULE B**

**to**

**Operating Agreement**

**for**

**ATHENS ENERGY LLC**

**Officers of the Company**

Robert Linkletter — President