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## RFP 43-16 Energy Solutions

### Addendum #2

March 15, 2016

The University of Maine

This purpose of this addendum is to provide the University's response to written questions pursuant to RFP#43-16 Energy Solutions and to clarify the data files available for reference.

University of Maine  
at Augusta

University of Maine  
at Farmington

University of Maine  
at Fort Kent

University of Maine  
at Machias

University of Maine  
at Presque Isle

The University has received a number of questions requesting energy and utility information, and has posted information pertinent to Phase I of this solicitation in accordance with Section 1.4 of the RFP, accessible to interested parties. Each interested party is encouraged to review the data provided. Below is a list of the information provided to date, **bold black** text indicating the folders, which contain the data files indicated below. Recently added information has been underlined. Responses directing the interested parties to refer to "RFP 43-16 Phs 1 data," are referring to the information listed below, posted as of this date.

#### **\*RFP 43-16 Phs 1 data**

University of  
Southern Maine

#### **RFP Documents**

- Request for Proposal
- Addendum 1: Updated Timeline
- Addendum 2: Response to Questions

#### **Energy use-purchase spreadsheets:**

- UMaine OronoCampusMonthlySteamPlantFuels 2012-2015.xlsx
- 2014-01 to 2016-01 UM Hourly NG use at steam plant 2016-03-10 ksd.xlsx
- UMaine OronoCampusMonthlyElectric 2012-2015.purchase.xlsx
- UMaine 11-2014 to10-2015 OronoCampus E and W Substation 15min interval purchased elect Data rev 2016-02-17 ksd.xlsx
- UMS.Annual.Electricity.purchases.xlsx
- UMaine Fy14-15 Electric and Gas Costs

**Misc**

- UMaine Facilities Management website info.pdf
- UMaine Orono Campus.pdf

**UMaine Orono Campus 2010 Energy Feasibility Report Abridged**

- 20100423 Drawing set appdx E.pdf
- 2010 UMaine Energy Feasibility Study Final Report Abridged.pdf

**UMaine Climate Action Plan**

- UMaine.ClimateActionPlan.pdf
- UMaine."CarbonFootprint.Report.pdf"

**UMaine general bldg info**

- 2014\_09\_17 ksd 2009\_05\_06 CAMPUS BLDG DATA.xlsx

**UMaine Steam Plant Scanned Logs**

- 600kw Steam TG hrly log sheets
- Steam Boilers daily log sheets

**UMaine utility maps**

- 2016\_02\_12 Reduced notes UM District Steam sys cond notes.pdf
- Campus Plan.dwg
- ELEDIS 11-16-15.pdf

Some questions received seek information for which the University may lack the data to respond altogether, or in a timely manner. Further, some of the information requested will pertain subsequent to Phase I of this process. In these cases, the University has indicated that this information is not available at this time.

Additional energy and utility information is expected to be made available as this process advances, and will be posted to the website. Section 1.9 Communication with the University indicates the responsibility of all Respondents to check the web site before submitting a response to ensure that they have all pertinent documents.

Q1. Information Request Summary:

Q1.1 Hourly electric energy consumption data (15-minute interval data preferred).

A1.1 Please see RFP 43-16 Phs 1 data\*

Q1.2 Hourly steam consumption data. Response:

A1.2 Please see RFP 43-16 Phs 1 data\*

Q1.3 One-line diagram of electrical distribution system.

A1.3 Please see RFP 43-16 Phs 1 data\*

Q1.4 Supplied steam pressure.

A1.4 Pressure delivered to campus is nominally 40~50 psig, please see RFP 43-16 Phs 1 data\* for additional information

Q1.5 Natural Gas pressure.

A1.5 Please see RFP 43-16 Phs 1 data\*

Q2. What is the total electrical usage over a 24-hour period and how does this vary by month?

A2. Please see RFP 43-16 Phs 1 data\*

Q3. In which section of the proposal should the Project Scope be included? Can this be classified as confidential information?

A3. Please provide the Project Scope as an attachment and label this Section 3 in your response. Please refer to section 1.12 Confidentiality in the RFP.

Q4. Section 2.0 states that “this energy solution solicitation is fundamentally a supply-side initiative.” What is the University’s definition of a “supply-side initiative”?

A4. The intent is primarily to identify energy sources to the campus, with consideration for demand-side scope as noted in the RFP.

Q5. Can a Respondent make arrangements to view the central plant before the Phase I submission due on March 24, 2016?

A5. Site visits will be scheduled in Phase II of the RFP process.

Q6. Please clarify the development status of the Juniper Ridge landfill gas pipeline to the University.

A6. The agreement between the University of Maine and Casella, the operator of the State of Maine Juniper Ridge Landfill, to build and operate a gas pipeline to supply landfill gas to the University steam plant, has expired. To our knowledge early in 2016 scrubbed landfill gas at the Juniper Ridge landfill was being flared.

Q7. Does the University of Maine expect respondents to contact local landowners and/or businesses, during Phase I of Energy Solutions RFP 43-16, to help evaluate the viability and

location for Project Concepts? Similarly, are Respondents allowed to discuss the RFP with local land owners and/or businesses?

A7. The University has no restrictions on respondent's discussions with local landowner or businesses.

Q8. Project Concepts and conceptual solutions seem to refer to the same thing. Under conceptual solutions, the RFP asks for a scope of work. Is that meant to describe the work to be done or the solutions provided?

A8. Section 2.0 articulates the Scope of Work requested, for the Project Concept(s) submitted.

Q9. In what section of the response should the Project Concept(s) be included? Should they be in Section 1 (4.1), or Section 3, as a separate Attachment?

A9. Please provide the Project Scope as an attachment and label this Section 3 in your response.

Q10.1 Can Respondents discuss project locations with UMaine personnel? If so, who should be contacted?

A10.1 Please see section 1.9 Communication with the University and RFP cover page.

Q10.2. Is land available near the central plant?

A10.2: The University cannot respond definitively at this time. The availability of University land and other assets is expected to be largely dependent upon nature of the submittals received through this solicitation.

Q11. Is Appendix A required for each and every request and/or questions submitted moving forward in Phase I and other Phases?

A11. Appendix A is required for access to the additional data as well as part of each respondent final submission. Phase II may have additional requirements to be determined.

Q12. In the 2010 Climate Report of U of M, It is stated that the University was doing cogeneration evaluation, but that was 6 years ago. What is the current status of cogeneration planning for the campus (electric size, location, steam load generation, etc.)- data was provided in the energy study on possible different sizes, etc.? Where was the cogen plant going to be located on campus?

A12. Following the 2010 Energy Feasibility Study Abridged\* the University had a basis of design document prepared for a natural gas fired turbine generator CHP plant, located near the East Campus substation. Since that study, the university has not pursued the CHP project for a number of internal reasons. But, the university continues to believe there are alternatives, from the UM campus energy systems status quo, that may meet the stated goals in this RFP. Consequently the University has chosen this RFP as the mechanism to find qualified respondents who are interested in working with the University towards a long term power purchase agreement to implement an energy solution.

Q13. In the RFP it states that GHG reduction lead would be renewables, and demand side (i.e. energy efficiency opportunities) would be considered as a lesser consideration, due to possible interruption of campus functions. Could we have a short summary of the energy savings measures implemented in campus buildings since 2010?

A13. This information is not available at this time.

Q14. We would like to understand the “big picture” plans for new buildings, and major renovations of existing buildings, say a spreadsheet, with approximate square footages, name of building, and time frame, and where approximately the new buildings would go on campus.

A14. This information is not available at this time.

Q15. What is the current GHG emissions, for 2015, and how does that compare to your 2008 baseline you published in the 2010 Climate Report?

A15. See the newly added file, “UMaine.CarbonFootprint.Report.pdf,” posted to the Google Drive.

Q16. What key measures have you implemented during the period 2010-2015 that helped bring the GHG emissions down? For example, further conversion of equipment from oil to gas (fuel switching, which was identified in 2010 as a key step), various energy conservation measures, abandoning and demolishing some old buildings, etc.

A16. This information is not available at this time.

Q17. Could we meet and discuss planning for lowering GHG emissions long term, and how do we make contact, given the limited time remaining to do so (name, address, phone number, email, etc.)?

A17. Based on the respondents selected in Phase 1, it’s anticipated that arrangements will be made in phase 2 to for site visits and to meet with UM personnel.

Q18. Landfill gas was mentioned as one area being considered by the University in 2010 as potential for GHG reduction and renewables. Has any work been done on this, is there a study available? - it was mentioned that the Juniper Ridge Landfill was the possible source, so we wonder what the current status of this possibility is, in terms of studies, layouts, plans, etc. and if so could we see them?

A18. The agreement between the University of Maine and Casella, the operator of the State of Maine Juniper Ridge Landfill, to build and operate a gas pipeline to supply landfill gas to the University steam plant, has expired. To our knowledge early in 2016 scrubbed landfill gas at the Juniper Ridge landfill was being flared.

Q19. Is there any more data on possible estimated volumes?

A19. The University does not have current information regarding landfill gas volumes and gas quality from the Juniper Ridge landfill operated by Casella Waste. Rates of natural gas use at the central steam plant is now available \*.

Q20. What is the current steam pressure generated in the central heating plant? What are the winter peaks and summer low steam flow rates in pounds/hr - in the 2010 energy study provided, based on 2009 data, such data was given, but the campus has been deliberately upgrading and apparently reducing steam loads from energy savings measures, and so we wanted to understand the current situation in 2016?

A20. Please see RFP 43-16 Phs 1 data\*

Q21. How many annual pounds per year of steam produced now- we were provided historical data?

A21. Please see RFP 43-16 Phs 1 data\*

Q22. Can you identify areas on the periphery of the main campus where uses for a solar PV farm or a new steam plant might be located, which would not necessarily interfere with your Master Plan for the main campus? (we realize another option is to add on to the existing steam plant).

A22. The University owns significant open fields (50+ acre) that borders Route 2 (Park St) that is adjacent to east substation on the East side of campus. For additional information, please see RFP 43-16 Phs 1 data\*

Q23. In the 2010 energy study, you indicate there are two electric service entrances, one at West Substation (at 12.47 KV), and the other off Rangeley Road (46KV) and they were out of phase and could not be connected together inside the campus, but that this was under investigation. Has any work been done on this?

A23. No. The East and West substations are out of phase.

Q24. In the energy study, it showed the East Service entrance had xfmr rating of 6250 KVA and West of about 4500 KVA. Is this still correct? It had been noted that the East side electric service entrance had been periodically overloaded/have changes been made to fix this problem, is it a growing problem, or has it been deemed a non-issue to date (2016)?

A24. The transformers at the East and West substations have not be changed since the 2010 energy study. Changes were made to the internal distribution of power to shift loads from the east substation. But the out phase power, power demands and equipment age continue to be areas of long term concern.

Q25. Can the University of Maine; Orono (UMaine) provide historical electric, steam and hot water loads? Ideally in hourly intervals and for at least one year out? If such documentation is unavailable, what are winter and summer peak load demands?

A25. Please see RFP 43-16 Phs 1 data\*

Q26. Can UMaine provide a milestone schedule for this RFP, e.g. the bidder award date and start date of the PPA?

A26. The University cannot provide any schedule beyond that provided in Section 1.7, and Addendum 1. Furthermore, the prospective schedule is expected to be largely dependent upon the quality and nature of the submittals received through this solicitation.

Q27. How does UMaine define "net" GHG emissions?

A27. UMaine defines net emissions consistent with industry accounting protocols.

For example: Gross campus non-biogenic GHG emissions, less purchased offsets, would yield net campus GHG emissions.

Q28. How much green/buildable land is, adjacent/ "over the fence" to the UMaine Campus?

A28. The University cannot respond definitively at this time. The availability of University land and other assets is expected to be largely dependent upon nature of the submittals received through this solicitation.

Q29. Can UMaine provide historical, electricity demand invoices?

A29. This information is not available at this time, however, please refer to RFP 43-16 Phs 1 data\* for limited electric and natural gas annual average costs that have provided.

Q30. How old and in what condition is the UMaine infrastructure? i.e. steam pipes

A30. There are multiple sections of dead end radial lines on the steam distribution system (versus a looped district heating system) that makes it difficult to do maintenance & upgrades as the system ages, as well as creates the potential of significant service impacts due to a single failure on a major radial line. Anecdotally, the main steam main have been found to in good shape with few signs of external corrosion, while the condensate return piping (generally a gravity system with pumped or flooded sections) suffers from external corrosion and leaks. There are numerous underground steam pits along with their associated pipe expansion anchoring steel that are approaching the end of their useful life. As funding priorities permit the University repairs or replaces steam pits and condensate lines.

Q31. Are there key performance indicators (KPI's) for the built environment at UMaine?

A31. With respect to energy and utilities, the University utilizes a number of annual KPI's, including: \$/mmbtu, mmbtu/gsf, \$/gsf, and MTCO<sub>2</sub>e/gsf.

Q32. How is energy tracked for the built environment at UMaine?

A32. Energy and utility usage and cost data is recorded for commercial (utility owned) meters, as invoiced monthly. Additionally, the University owns hundreds of meters on its own systems, of various utility types (e.g., electricity, water, condensate) including those meters located at the building level, and some submeters within buildings.

Q33. Will there be a furnished office space supplied to Service Provider?

A33. This information is not available at this time.

Q34. Will the Service Provider be able to use any existing tools & equipment?

A34. This information is not available at this time.

Q35. Did the previous service provider use any IWMS (Integrated Workplace Management Software) to facilitate coordination, maintenance management and subcontractor management?

A35. The University owns, operates and maintains the predominant energy infrastructure on campus, including electricity, steam, water, sanitary sewer, and storm drain. The University uses its own IWMS system.

Q36. Would the Service Provider be able to provide all facility maintenance services (i.e. janitorial, HVAC, exterior grounds maintenance)? Is there unionized or non-unionized staff, able to be contracted?

A36. The University cannot respond definitively at this time. Such an option would require understanding of, and consideration for, the many other attributes of any potential project.

Q37. Would a CHP system interconnected "behind the meter" be considered "supply-side" work as defined in Section 2.0 Scope of work in the RFP?



A.37. Yes

Q38. Were any upgrades suggested in the Vanderweil Power Group's Energy Feasibility Study implemented?

A38. A new 60,000 #/hr steam boiler (#8) was installed replacing two 30,000 oil fired boilers that were at the end of their useful life. Boiler 8 currently only fires natural gas but was designed so that with some equipment changes (burner, additional fuel train valves) it can co-fire NG and Landfill gas.

Q39. How many gallons of feed water are used monthly/annually by the central steam plant?

A39. Please see RFP 43-16 Phs 1 data\*

Q40. Can a Process & Instrumentation Diagram of the central steam plant be provided?

A40. This information is not available at this time.

Q41. What is University of Maine Orono campus' utility electric rate?

A41. This information is not available at this time.

Q42. What is University of Maine Orono campus' utility natural gas rate?

A42. This information is not available at this time.

Q43. Would University of Maine allow RECs from natural-gas fueled fuel cells to be sold into the REC {NEPOOL} market?

A43. The University cannot respond definitively at this time. Such an option would require understanding of, and consideration for, the many other attributes of any potential project.

Q44. Can you provide the units on one of each type of steam log?

A44. Please see RFP 43-16 Phs 1 data\*

Q45. Are the hourly/daily log sheets available in an electronic format (e.g. MS Excel)?

A45. Ans: Not at this time, likely by phase 2 of the RFP spreadsheet data will become available.

Q46. Would University of Maine Orono be interested in a net energy agreement with Emera Maine if RECs {NEPOOL} are not able to be sold?

A46. The University cannot respond definitively at this time. Such an option would require understanding of, and consideration for, the many other attributes of any potential project.

Q47. Does University of Maine Orono have any existing net energy billing contracts with Emera Maine?

A47. Not for the Orono campus.

Q48. Are there any issues with using the grass field next to the substation for use with a power plant (i.e., for proximity to the grid and your heating plant)?

A48. The University cannot respond definitively at this time. Such an option would require understanding of, and consideration for, the many other attributes of any potential project.



Q49. Is the make-up to the steam boilers provided by a municipal water supply?

A49. Yes

Q50. What kind of water treatment is used for the boiler make-up?

A50. Response: This information is not available at this time.

Q51. What are the last five year averages of natural gas prices per delivered mcc to the university?

A51. This information is not available at this time, however, please refer to RFP 43-16 Phs 1 data\* for limited electric and natural gas annual average costs that have provided.

Q52. What are the last five years average kw cost?

A52. This information is not available at this time, however, please refer to RFP 43-16 Phs 1 data\* for limited electric and natural gas annual average costs that have provided.

Q53. What is the actual internal cost assigned to steam per mmbtu?

A53. This information is not available at this time.

Q54. What is the average cost per ton of wood used for fuel?

A54. This information is not available at this time.

Q55. Does the university use a standard purchase contract for wood fuel?

A55. Response: This information is not available at this time.

Q56. What cost per mmbtu are projected for the Farmington and the Presque Isle wood fired steam or hot water?

A56. This information is not available at this time.

Q57. What were the capital costs of the Farmington and Presque Isle conversions?

A57. This information is not available at this time.

Q58. Does the university sell or utilize REC or other tax credits from its current production?

A58. This information is not available at this time.

Q59. What is the annual budgeted costs for refurbishment of "steam pits" at Orono?

A59. This information is not available at this time.

Q60. What boiler efficiency does the existing Orono steam plant operate at?

A60. Please see RFP 43-16 Phs 1 data. Each interested party may use the data provided to perform its own analyses, such as boiler efficiency.

Q61. What is the size, capacity, and location of the chillers used on campus at Orono?

A61. There are two steam absorption chillers that are only used during cooling seasons. There are a number of additional electric chillers across the campus.

Q62. Can you please provide the most 2 current years of electrical usage and cost data by month for the two main electrical services feeding the campus (east and west side). Can you please include current commodity and transmission and distribution costs?

A62. Please see RFP 43-16 Phs 1 data\*

Q63. Please include at least two months of electrical bills for both commodity and transmission and distribution so that we can verify tariff structure

A63. This information is not available at this time, however, please refer to RFP 43-16 Phs 1 data\* for limited electric and natural gas annual average costs that have provided.

Q64. Please provide the most 2 current years of fossil fuel (natural gas, oil, landfill gas) consumption and costs by month for the central boiler plant? Can you please include current commodity and transportation costs?

A64. This information is not available at this time, however, please refer to RFP 43-16 Phs 1 data\* for limited electric and natural gas annual average costs that have provided.

Q65. Please provide at least two months of natural gas, landfill gas and oil bills for both commodity and transportation costs (if applicable)

A65. This information is not available at this time, however, please refer to RFP 43-16 Phs 1 data\* for limited electric and natural gas annual average costs that have provided.

Q66. The following is a request for information, if available for use in developing our submittal to RFP # 43-16 – Energy Solutions: Spreadsheets with same data are acceptable instead of bills.

Q66.1. 2015 - Monthly Electricity T&D Bills (Emera) for each Orono Meter  
Including: kWh, kW Demand and Costs

A66.1. This information is not available at this time, however, please refer to RFP 43-16 Phs 1 data\* for limited electric and natural gas annual average costs that have provided.

Q66.2. 2015 - Monthly Electricity Supply Bills (Supplier) for each Orono Meter  
Including: kWh, kW Demand and Costs

A66.2. This information is not available at this time, however, please refer to RFP 43-16 Phs 1 data\* for limited electric and natural gas annual average costs that have provided.

Q66.3 2015 - Monthly Natural Gas T&D Bills (Bangor Gas) for each Orono Meter  
Including: Ccf or therms and Costs

A66.3 This information is not available at this time, however, please refer to RFP 43-16 Phs 1 data\* for limited electric and natural gas annual average costs that have provided.

Q66.4 2015 - Monthly Natural Gas Supply Bills (Supplier) for each Orono Meter  
Including: Ccf or therms and Costs

A66.4 This information is not available at this time, however, please refer to RFP 43-16 Phs 1 data\* for limited electric and natural gas annual average costs that have provided.

Q66.5. 2015 - Monthly Fuel Bills (not on steam loop) for each Orono location Including: Gallons, Ccf, therms and costs

A66.5. This information is not available at this time, however, please refer to RFP 43-16 Phs 1 data\* for limited electric and natural gas annual average costs that have provided.

Q66.6. 2015 – Steam Flow Interval Data – Main Header to Campus Loop Including: PPH, Pressure & Temperature interval data (typically 15 min)

A66.6 This information is not available at this time.

Q66.7. Primary Power System – One-Line Diagram(s); .pdf or .dwg format

A66.7. Please see RFP 43-16 Phs 1 data\*

Q66.8. Primary Power System – Campus Site Plan Drawing(s); .pdf or .dwg format

A66.8. Please see RFP 43-16 Phs 1 data\*

Q66.9. Primary Steam Loop – P&ID Drawings / Diagrams; .pdf or .dwg format

A66.9. This information is not available at this time.

Q66.10. Primary Steam Loop – Campus Plan View / Site View; .pdf or .dwg format

A66.10. Please see RFP 43-16 Phs 1 data\*

Q66.11. Primary Steam Loop – Equipment List (line sizes, traps, manholes, etc.)

A66.11. This information is not available at this time.

Q66.12. List of Campus Buildings with sq. ft. - Connected to Steam Loop

A66.12. Please see RFP 43-16 Phs 1 data\*

Q66.13. List of Campus Buildings with sq. ft. - Not Connected to Steam Loop

A66.13 Please see RFP 43-16 Phs 1 data\*

Q66.14. Campus Site Plan Drawing, .pdf or .dwg format

A66.14. Please see RFP 43-16 Phs 1 data\*

Q66.15. Campus Cooling Equipment List – Chillers, RTU's, DX Units with R-Tons

A66.15. Please see RFP 43.16 Phs1 data\*

Q66.16. Copy of Vanderweil's CHP Study

A66.16. Please see RFP 43-16 Phs 1 data\*

Q66.17. Existing Emissions Licensing / Permitting

A66.17. This information is not available at this time.

Q66.18. Green House Gas Emissions Reduction

A66.18. Please see RFP 43-16 Phs 1 data\*

Q66.19. Calculation methods used

A66.19. This information is not available at this time.

Q66.20. Criteria / Assumptions

A66.20. This information is not available at this time.

Q67. Is there a submittal File Size Restriction for emailed submittals?

A67. Individual Email submittals should be limited to 20MB.

Q68. Can electronic submittals be delivered on DVD in person or mail?

A68. Response submissions should be submitted electronically to [rachel.piper@maine.edu](mailto:rachel.piper@maine.edu).

Email subject line - Energy Solutions - RFP#43-16

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Piper', with a stylized flourish at the end.

Rachel Piper  
University of Maine System: Strategic Procurement  
Director of Strategic Sourcing