**PROJECT FACT SHEET**

**FOR PROFESSIONAL CONSULTANTS**

<table>
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<tr>
<th>PROJECT:</th>
<th>SM-5635, CHP and Energy Feasibility Study</th>
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<td>LOCATION:</td>
<td>University of Florida, Main Campus (Gainesville)</td>
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**A. OWNER FACTS:**

The University of Florida (Gainesville, FL) is a major public land-grant research university. The state's oldest, largest, and most comprehensive university, the University of Florida (UF) is among the nation's most academically diverse public universities. The University has a long history of established programs in international education, research, and service. It is one of only 17 public land-grant universities nationwide and the only university in Florida belonging to the Association of American Universities. With more than 50,000 students, the University of Florida is now one of the five largest universities in the nation.

The main UF campus includes 2,000 acres with more than 900 buildings, including 170 with classrooms and laboratories. The northeast corner of campus is listed as a historic district on the National Register of Historic Places. The University’s extensive capital improvement program has resulted in facilities ideal for 21st century research, including the McKnight Brain Institute; the Health Professions, Nursing and Pharmacy Building; the Cancer and Genetics Research Complex; and the Nanoscale Research Facility. UF's current facilities have a book value of more than $1 billion and a replacement value of $2 billion.

For any additional information about the University of Florida, please visit the University’s web page at [www.ufl.edu](http://www.ufl.edu).

**B. PROJECT BACKGROUND:**

**CHP, Steam, and Electricity**

UF signed two agreements in June 1992 with Florida Power Corporation (now Progress Energy Florida / Duke Power) – an agreement regarding steam and electricity sales and a sublease agreement. Under the terms of these agreements, Florida Power agreed to:

- Install a 47 megawatt (MW) combined heat and power (CHP) or “co-generation” plant on the UF campus to serve as the principle source of 250 psi steam; and
- Operate & maintain two University-owned standby boilers in the Rabon Plant.

The 1992 agreements expire December 2014, presenting an opportunity for UF to extend the agreement, negotiate revised terms, or have Progress Energy remove the CHP plant by the end of 2015.

The CHP, which is Located on Mowry Road near the Health Science Center, generates electricity that is connected back to the Progress Energy grid and uses waste heat from a General Electric LM6000 series gas turbine (scheduled to be replaced in Spring 2013) to produce steam through a heat recovery steam generator. The CHP steam generator has a capacity of 220,000 lbs/hr and delivers steam to the UF-owned Weil Plant at 250 psi and the UF-owned Rabon Plant at 250 psig and 70 psi. Steam is then distributed at 70 psi across campus through a UF-owned and UF-maintained underground steam & condensate piping distribution system. This steam is the principal source of critical thermal energy once converted at the buildings to heating hot water and domestic hot water, but is also used in its raw form for autoclaves and other such equipment.
Steam demand ranges from 40,000 lbs/hr to 210,000 lbs/hr depending on the time of year, building type & size, and other factors. The CHP uses UF wastewater for cooling water.

The Lacy Rabon, Jr. Chilled Water Plant – formerly called Heat Plant #2 – houses (2) natural gas and fuel oil standby boilers – Boiler #4 (circa 1972; nameplate 40,000 lb/hr) and Boiler #5 (circa 1977; nameplate 120,000 lb/hr) – that provide steam to approximately 142 buildings on campus when the Progress Energy CHP is out of service for maintenance or repairs. The actual total capacity of the standby boilers is, which is well below the 210,000 lb/hr campus peak demand. To help close the gap between the actual capacity of these boilers (roughly 155,000 lb/hr) and the peak demand (210,000 lb/hr), UF recently installed utility connections at the Rabon Plant for a temporary 60,000 lb/hr boiler and intends to replace Boiler #4 with a new 80,000 lb/hr boiler by Spring 2014, the 100% construction documents for which have already completed by RMF Engineering (Baltimore, MD).

The UF campus is fed by three Progress Energy electric substations, which in turn feed 23 kV or 12.47 kV power to UF–owned substations that reduce the distribution voltage from to 4.16 kV, 13.8 kV, or 12.47 kV. Electrical demand ranges from 35 MW to 75MW.

CHP Controls & Monitoring

The plant uses a Foxboro Digital Control System (DCS) for control, monitoring, and trending/reporting. This system allows for instant visualization of operating conditions and efficiencies, periodic reports, and historic analysis of performance.

Background Documents

See the project website for general/background information regarding the CHP and utility infrastructure. Supporting data and additional documents will be made available to the shortlisted consultants in advance of the interviews.

C. PROJECT DESCRIPTION:

An experienced consultant is sought to analyze present conditions and evaluate potential future alternatives for the procurement, generation, delivery, and use of reliable, sustainable, efficient, and cost-effective distributed utilities across the main UF campus – specifically, steam and electricity. Alternatives may include, but are not restricted to, renegotiating a more cost effective utility rate structure, procurement and operation of the existing CHP facility, or installation of new CHP facilities and/or other technologies best suited to serve the University's long term needs.

The selected firm will initially provide feasibility study services, financial and life cycle cost analyses, conceptual design services, and cost estimating services for fees estimated between $150,000 and $200,000, but may be further contracted to provide full design, construction administration, or other consulting services.

The selected consultant shall conduct research, interviews, site visits, and meetings and develop data analysis, cost estimates, and conceptual design documents as needed to produce a comprehensive, investment-grade feasibility study that UF can use to make informed decisions regarding the CHP and long-term generation of steam.

The feasibility study shall include an assessment of options for generating steam – with and without the CHP – and a more thorough development of the option deemed to provide the best long-term solution for UF. Such options may include the installation of new plant(s) and equipment, such as combined heat & power gas turbine(s) with heat recovery steam generator(s), steam boilers, and other steam or steam + electricity-generating equipment.
Specific tasks include:
1. Serving as UF’s technical advisor/agent on supply-side energy generation and procurement strategies, with consideration given to fiscal, operational, sustainability, and regulatory factors.
2. Making recommendations for new or renegotiated steam & electricity sales and sublease agreements with Progress Energy or other utility provider(s), including specific terms and requirements that account for changes since the 1992 agreement was executed; are more considerate of existing and future campus conditions; are in concert with UF’s broader energy efficiency and sustainability goals; and account for future regulatory changes likely to occur over the next 50 years.
3. Analyzing existing plant/systems performance data and interviewing UF staff – including Physical Plant Division managers and operators – as needed to develop a complete understanding of existing conditions, facilities, and considerations.
4. Analyzing current and projected campus steam, electrical, and natural gas demands.
5. Reviewing prior related studies, reports, and other data.
6. Developing and analyzing ideas for improving overall efficiency and reliability of the steam system, including, but not limited to:
   - Options that take advantage of the energy transfer in the pressure drop of steam delivered to the UF steam network at 70 psi from the Progress Energy CHP at 250 psi (steam backpressure turbine chiller(s), backpressure turbine electric generator, etc.)
   - Additional steam-powered electrical generators and chillers to take advantage of low steam prices in off-peak times
   - Standby boilers and/or boiler upgrades to provide partial redundancy
   - Incinerating campus waste to generate steam and electricity
   - Renewable energy solutions
7. Developing viable options for new steam-generating plant(s) or equipment to supplement or replace the Progress Energy CHP; analyzing those options; and recommending the option determined to be the best overall solution for UF. Along with consideration of sustainability factors (e.g., carbon footprint), the basis for this recommendation shall include a life cycle cost analysis that considers first costs, operating costs, and incremental electric power production.
8. Detailing the optimal (recommended) solution in terms of design, first cost, annual operating costs, and schedule for completion:
   a) Conceptual Schematic Design drawings, narratives, and supplemental information for the recommended solution, including a site plan, machine location plans and elevations, heat balance diagrams, preliminary piping and instrumentation diagrams, electrical one-line diagrams, and equipment literature.
   b) Comprehensive, investment-grade cost estimate for design and construction of the optimal (recommended) solution, including:
      (1) New steam-generating equipment and ancillary equipment/systems required to support its operation. This may include additional boiler capacity or provisions for connections to standby boilers as needed to minimize or eliminate the gap between supply and peak demand.
      (2) Upgrades to or replacement of existing equipment as necessary.
      (3) Piping, valves, and supports associated with the new, upgraded, or replacement equipment, including interfaces with new and existing equipment/systems.
      (4) Electrical equipment, conduit, cabling/wiring, and related devices required for operation of the new/supplemental plant and equipment, including interconnection with existing campus systems.
      (5) New controls.
      (6) Structural, architectural, and site-related work.
(7) Operational & logistics costs, such as temporary modifications for installation access and maintenance of existing CHP operations that must continue uninterrupted throughout construction.

(8) Soft costs such as engineering/design fees; CM/GC fees and general conditions costs; offsite storage and other facilities/resources required during construction; costs for testing and/or commissioning of the new facility; and contingencies.

(9) Costs associated with meeting regulatory requirements. For example, the current EPA air permit for the CHP is held by Progress Energy, but is “transferable” to UF per the 1992 agreement. Identify costs, schedule, and any miscellaneous issues to make this transfer applicable to the new CHP.

C) Determination of projected annual operating costs, including:

1) Development of an hourly campus thermal energy load characterization.

2) Modeling of base and incremental cases that simulate plant operation in response to hourly thermal energy demand – with and without a gas turbine/HRSG addition – to determine incremental annual operation of the Rabon Plant boilers and the optimal (recommended) solution.

3) Preparation of heat, water, and material balances to determine levels of annual heat input, electric power production, water use, catalyst and chemicals use, and other considerations that would contribute to annual costs and revenues from operation of the Rabon Plant.

4) Application of pricing forecasts to determine annual costs for fuel, water, and other commodities; the value of electric power supplied directly to campus load; and revenue from power sold to the local electric utility.

d) Preparation of a financial analysis that forecasts discounted cash flows for the base and incremental operating cases, along with other relevant metrics such as incremental net present value and internal rate of return stemming from the installation and operation of the optimal (recommended) solution.

e) Development of a schedule showing the duration and sequence of tasks required to deliver the optimal (recommended) solution, including design, permitting, bidding, submittals/shop drawings, equipment procurement & delivery, construction, and testing/commissioning.

f) Production of a Basis of Design (BOD) narrative/report to describe both the scope of work and the rationale(s)/background for critical selections or assumptions. Examples of aspects to be covered in the BOD include demand projections; features and relative advantages of machine locations/layouts; structural and architectural considerations; temporary modifications and provisions required during construction; correlation of new plant/equipment with existing, including system upgrades necessary to support gas turbine/HRSG operation; interfaces with existing mechanical, electrical, and control systems; and regulatory/environmental considerations.

g) Explanation of the permits or other regulatory notices required, if any, for the optimal (recommended) solution.
D. SELECTION CRITERIA and PROCESS:

Applicants will be evaluated on the basis of their past performance, experience, personnel, references, and responses to questions posed both in the shortlist and interview phases. Scores will be based on the following non-prioritized criteria as illustrated in the (5) past project examples listed in the PQS submittal. Additional criteria may be outlined for short-listed applicants.

- Experience with and past performance on similar projects - district energy/CHP studies involving planning, research, financial analysis, and design for institutional clients (higher education, governmental agencies, etc.) similar to UF in terms of size and utility demand
- Capability, expertise, and availability of proposed staff
- Knowledge & experience with historic and legal/regulatory context in the State of Florida, environmental considerations, and sustainability aspects (efficiency, carbon footprint, etc.)
- Project management experience and ability to communicate
- Correlation of study/analysis recommendations to actual implemented solution(s)

To ensure the validity of the work and the process itself, preference will be given to consultants/teams not tied to specific solutions, products, or systems.

Scores from the shortlist phase are not additive with scores from the interview phase, but the Committee reserves the right to consider information provided in the PQS submittal during the interview phase.

Since it is anticipated that most consultants most capable of performing this work have no history of work for or at the University of Florida, past performance ratings shall not be part of the scoring methodology.

E. ARCHITECT/ENGINEER SELECTION & CERTIFICATION COMMITTEE:

1. Jeff Chorlog, Assistant Vice-President
   Physical Plant Division, University of Florida

2. Keith Ponitz, Engineer
   Physical Plant Division, University of Florida

3. Bill Weltner, Engineer
   Physical Plant Division, University of Florida

4. Howie Ferguson, Assistant Director
   Facilities Planning & Construction, University of Florida

5. Kevin Heinicka, Director
   IFAS Facilities Planning & Operations, University of Florida
F. SCHEDULE:

The anticipated schedule for selection, award, negotiation, and work is as follows:

<table>
<thead>
<tr>
<th>Event</th>
<th>Date/Time</th>
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<tbody>
<tr>
<td>Applications Due</td>
<td>Friday, June 14, 2013, 3:00 PM Eastern</td>
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<tr>
<td>Shortlist Meeting</td>
<td>Week of June 17-21, 2013</td>
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<tr>
<td>Final Interviews</td>
<td>Week of July 15-19, 2013</td>
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<tr>
<td>Contract Negotiation &amp; Execution</td>
<td>July 22-31, 2013</td>
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<tr>
<td>Kickoff Meetings</td>
<td>Week of August 5-9, 2013</td>
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<tr>
<td>Deliverable #1 (analysis of options and recommendation of best option)</td>
<td>October 18, 2013</td>
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<tr>
<td>UF Direction re: Deliverable #1</td>
<td>November 1, 2013</td>
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<tr>
<td>Deliverable #2 (50% development of best value option conceptual design)</td>
<td>January 10, 2014</td>
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<tr>
<td>Review meeting(s)</td>
<td>January 24, 2014</td>
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<tr>
<td>Deliverable #3 (100% conceptual design)</td>
<td>March 14, 2014</td>
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<tr>
<td>Review meeting(s)</td>
<td>April 4, 2014</td>
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G. PROCESS INFORMATION:

1. See the SM-5635 Professional Qualifications Supplement (PQS) and PQS Instructions for detailed information on the required submittal.

2. Provide an electronic copy of the submittal prior to the designated date and time. Do not provide any hard copies, and do not deliver the e-copy on CD or flash drive to UF. Instead, e-mail the file per the following instructions. Late electronic submittals, blank/corrupt files, unsigned submittals, or those using forms other than the project-specific PQS forms are grounds for disqualification.
   - Provide all proposal/submittal documents in a single (searchable) PDF file
   - Attach this file to an e-mail addressed to sm5635@connect.ufl.edu
   - The email + attached proposal shall not exceed 30 MB
   - The sender will receive an auto-response that the mail was received by UF; contact the UF project manager if you do not receive this receipt within an hour or so of sending.

3. At least three applicants will be selected for the interview phase, unless fewer than three apply. In the event of a tie in the shortlist ranking, when the margin between two applicants among the top scores is less than one/tenth (0.1), the Committee may select additional applicants for interview.

4. All applicants will be notified of the results of the short-listing in writing. The short-listed applicants will be informed of the results via the quickest means possible (phone, fax, e-mail) and will be provided with additional project information as needed. Unsuccessful applicants will be notified via letter only.

5. Following the interview phase, the committee will make a recommendation to the University Vice-President. All finalists will be notified in writing of the Vice-President’s action. Upon approval by the Vice-President, negotiations will be conducted in accordance with Section 287.055, Florida Statues.
6. If negotiations with the top-ranked and approved firm are unsuccessful, negotiations will be conducted with the second-ranked firm, upon approval by the Vice-President.

7. **Applicants shall direct all questions regarding the process or the results of short-listing and interviews to the FP&C Project Manager. Opportunities for direct interaction with Selection Committee members may be provided for finalists between the short-listing and interview phases.**

**H. GENERAL INFORMATION:**

1. The entity responsible for all aspects of project management is:

   Facilities Planning & Construction (FP&C)
   University of Florida
   232 Stadium / PO Box 115050
   Gainesville, FL 32611-5050
   Phone: (352) 273-4000
   Fax: (352) 273-4034
   Internet: [www.facilities.ufl.edu](http://www.facilities.ufl.edu)

2. Direct all inquiries to the FP&C Project Manager:

   Howie S. Ferguson, P.E.
   Phone: (352) 273-4026
   E-Mail: [hsferg@ufl.edu](mailto:hsferg@ufl.edu)

3. Interested applicants should register with FP&C as a potential applicant for the project in order to be notified of information, changes, updates, etc. Visit the FP&C website for more information.

4. All project-related information and the PQS submittal forms and instructions may be viewed or downloaded at the FP&C website.

5. Applicants are strongly encouraged to also review the UF *Design Services Guide*, template Owner/Professional contract, UF Design & Construction Standards, and other forms, guidelines, standards, and documents that pertain to work at the University of Florida.