Cuyahoga County, Ohio:
Cuyahoga County Utility & Microgrids
Request for Information

Submitted by:
Chaberton Energy

To: Cuyahoga County Department of Public Works and Department of Sustainability

June 30, 2022

1. Cover Letter

Chaberton Energy is excited respond to Cuyahoga County for this Request for Information for a County Utility & Microgrid. Chaberton Energy is a leading developer of renewable energy projects and applauds Cuyahoga County for taking an innovative approach to transform the energy grid.

Unmatched Expertise. Our team is uniquely capable of delivering on our commitments, with Chaberton Energy having all the in-house solar development, engineering, and financing capabilities to partner with Cuyahoga County on this exciting opportunity.

Financial Strength. Our team has a strong financial backing, which will ensure that projects can be delivered as promised. Greenbacker has invested over $2 billion in renewable energy assets over the last five years, currently raises approximately $50 million per month, and will be able to finance these projects leveraging its robust balance sheet. We are also open to partnering with local financial institutions to provide cost effective financing.

Competitive Price. Our prices are extremely competitive, while remaining realistic to make sure that we can deliver on our promises. We will commit to an "open book" policy to share the actual costs with the County, and work collaboratively to provide the most efficient solution.

Community Benefits. In addition to delivering a cost-competitive solution, we are excited to offer additional benefits to the residents of Cuyahoga County. We specialize in Community Solar, so we are experts in delivering green energy savings directly to residents. Furthermore, as a Public Benefits Corporation, we are focused on benefiting the community. We will work directly with County officials and community leaders to invest directly into the community.

We are excited to have the opportunity to partner with Cuyahoga County on this exciting opportunity.

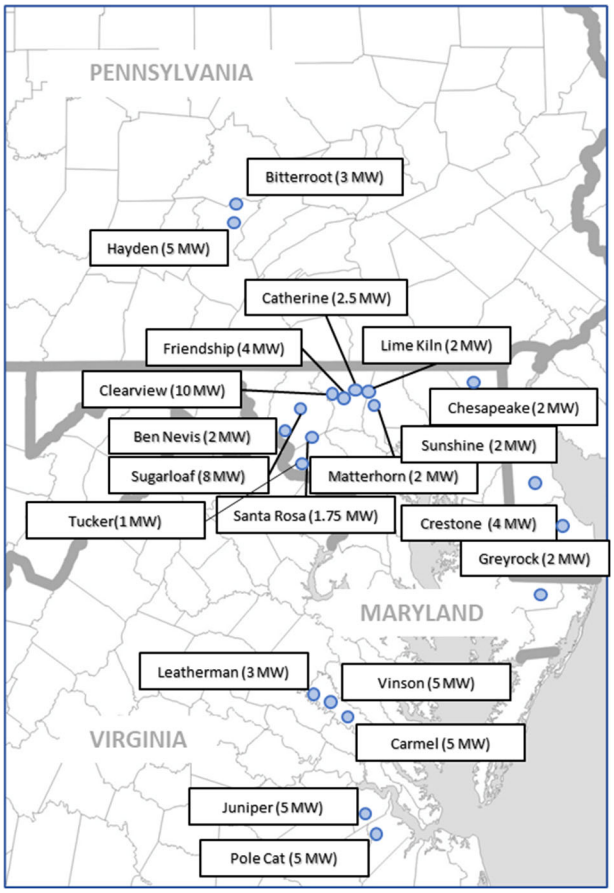
Stefano Ratti

Stefano Ratti
Chief Executive Officer
Chaberton Energy

2. Entity / Business Name, Summary of Services, & Relevant Experience

Chaberton Energy

Chaberton is a mid-Atlantic based solar energy company, which was founded with the specific goal of developing distributed energy generation projects. Its predecessor company, Chaberton, LLC, has provided services in the renewable energy industry since 2011. Chaberton is an affiliate of Greenbacker Capital*.



Chaberton focuses on community solar and non-profit and institutional customers. Chaberton originates and develops projects, running the entire development process, including design, permitting, interconnection, real estate, and contracting. Chaberton is currently developing projects across Ohio, Maryland, Delaware, Virginia, Pennsylvania, Michigan, Oregon, and New Mexico with a broader pipeline of additional projects currently in the origination stage. Chaberton is based in North Bethesda, MD. Its Virginia office is located in Midlothian, VA.

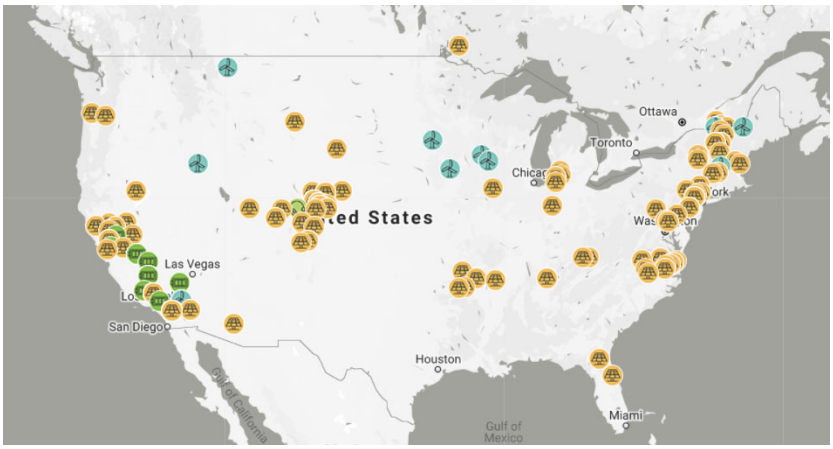
Chaberton's principals have extensive experience in the energy industry and have developed a rigorous gated process for the development of mid-size solar projects, which ensures that all the project activities are performed efficiently and in the right sequence to ensure the most expeditious project outcome and ensure success in maintaining project budget and schedule. This gated process also ensures capital resources are appropriately allocated to the most important development elements.

Chaberton has a nimble team of 20 experienced professionals. 20% of Chaberton's employees are veterans. Chaberton has a strong focus on educational institutions; for example, Chaberton signed a Power Purchase Agreement with Loyola University Maryland in 2021 for a 2 MWac project.

* Chaberton is partially owned by Greenbacker Development Fund, one of the funds in the Greenbacker Group.

Greenbacker Capital

Over the last 5 years, Greenbacker has invested over $2 billion in renewable energy assets, in 259 projects nationwide, with 800 MW of operating solar energy assets currently under management, over 1 GW in construction, and over 3GW in the pipeline. Greenbacker has built this portfolio by carefully maintaining budget and schedule on each project delivered and matching the portfolio's production with large-scale energy off-takers. Most of the projects under management, or under development, are in the 1-10 MW range, similar to the types of facilities contemplated in this RFP.



Greenbacker's U.S. Footprint (as of June 30, 2021).

Greenbacker has a dedicated asset management and operations team of ~20 full-time professional operators and engineers. By using in-house resources, Greenbacker can operate projects more efficiently than third parties, and they can use their strong balance sheet to resolve any issues that may arise.

Chaberton Energy / Greenbacker Capital Relevant Project Experience

Name & Location	Power Off Taker	Size (MWdc)
Oak Leaf Portfolio, Colorado	Community Solar	12 x 1.9
Phoenix, Maryland	WLG	3.1
Blue Star, Maryland	Washington College	7.8
Catholic Charities, Washington DC	Catholic Charities	2.0
Lafarge Hagerstown, Maryland	Lafarge	13
Denver Airport, Colorado	Denver Airport	12.4
Friendship Solar I, Maryland	Community Solar	3.2
Friendship Solar II, Maryland	Loyola University	3.1
Clearview Solar, Maryland	Howard County	14

Staff

Chaberton Energy has a seasoned & experienced staff. Chaberton will take the lead on defining a broader team of partnerships to deliver the full scope of services that Cuyahoga County is looking for.

Stefano Ratti
Chief Executive Officer

Stefano Ratti is the founder of Chaberton Energy and serves as Chief Executive Officer. Stefano had previously developed projects for third-party owners, including the origination and development of over 100 MW of solar energy projects in the mid-Atlantic. Stefano also built and led a greenfield development team at Enviva, a leader in the production and logistics of solid biofuels, and led, from conception to financing and construction, the development of nearly one billion dollars of invested capital across three production plants and one export terminal. Prior to working at Enviva and Chaberton, Stefano held executive positions at Areva, was a Project Leader at the Boston Consulting Group, and also worked at General Electric (Power Systems), Navigant Consulting, and the Center for Environmental Energy Engineering at the University of Maryland. Stefano received a Bachelor's and Master's degree, magna cum laude, in Mechanical and Energy Systems Engineering from the Polytechnic University of Milan and has completed executive education programs at Duke University, Babcock University, and Harvard Business School.

Michael Doniger
Chief Operating Officer

Mike Doniger is Chief Operating Officer at Chaberton Energy. Committed to Lean/Operations Excellence principles, Mike began his career in the US Navy culminating in service as Chief Engineer of a nuclear-powered submarine. In 2008, realizing the growing need for leadership in the area of clean energy, Mike joined a young biomass-to-energy start-up that has since grown to be the world's leading supplier of utility-grade wood pellets and in 2015 conducted a first-of-its-kind Master Limited Partnership IPO as Enviva Partners, LP (NYSE: EVA) focused on solid biomass fuel. At Enviva, Mike held several senior engineering, operations, and development positions as the company grew to a $1B market capitalization leading the deployment of over $500M in growth capital and implementing the processes necessary to operate 7 manufacturing facilities, 4 ports, and nearly 600 people. Mike now leads Chaberton Energy's engineering and operations activities.

John Gnesda
Director, Development & Engineering

John Gnesda is the Director of Development & Engineering for Chaberton Energy. John has 10+ years of design and leadership experience with power system engineering, power system protection, PLC/SCADA programming, and photovoltaic solar design & optimization. John is a registered professional engineer in Ohio, Pennsylvania, New Jersey, New York, Maryland, Delaware, New Mexico, and Virginia. As Vice President of Renewables at ARM Group LLC, John has been responsible for the full life cycle of solar project engineering & design, including implementing battery storage. John holds a Master of Engineering in Electrical Engineering from Iowa State University, a Siemens Solutions Partner Certification, and has completed the Solar Energy International: PV Design Consideration and the Scheitzer Engineering Laboratories: SEL PROT 401: Protecting Power Systems for Engineers courses.

3. Roles Fulfilled

Chaberton Energy is an experienced developer of renewable energy projects. Chaberton has on staff expertise in origination, development, permitting, engineering, finance, and project management in developing renewable energy assets. Between in-house capabilities and already existing strategic partners, Chaberton can provide services under multiple roles as identified by Cuyahoga County. For those roles with Chaberton does not have already covered either via in house or external partnership resources, Chaberton will take the lead in identifying partners and managing the entire team to deliver a comprehensive solution to the County. Some of the roles which Chaberton and our already established partners can provide are below:

- Utility Management
    - Manage Construction and Ongoing Operations: Oversee the development and construction of microgrids and distributed generation projects, etc.
- Developer of Utility Customers, Distributed Generation Projects, and/or Microgrids
    - Develop distributed generation projects (e.g., in-front-of-the-meter solar, battery storage, etc.) for individual customers or the County Utility to be off-takers. Provide the capital and insurance for these projects. Assist in necessary contracts.
    - Develop microgrid projects (e.g., single site or multi-customer district). Provide the capital and insurance for these projects. Assist in necessary contracts.
- Design and Construction Team (Engineering, Procurement, Construction) of Distributed Infrastructure, Distributed Generations, and/or Microgrids
    - Design (Engineering and Other)
    - Procurement of equipment / materials
    - Construct distribution infrastructure, distributed generation, and/or microgrids
    - Support distributed generation and microgrid operations in conjunction with, or on behalf of the County Utility and/or its manager or operator

Chaberton recommends additional roles to cover other expected responsibilities during development. There will likely be additional roles that come up during development; Chaberton will be able to identify and provide resources, either internal or external, to cover these additional roles.

- Site Identification
    - Identify feasible sites for the development of distributed generation assets, working with the County to select sites that provide the highest value to the grid
    - Site control contract negotiation & structuring
- Community Engagement
    - Create a plan for communicating with the Community, both in general on project plans and more directed in communities in which these projects are planned to be located
    - Perform community outreach, schedule and hold community meetings, and handle direct community communications
- Design Optimization
    - Detailed engineering design optimization, reviewing multiple designs scenarios and collaboratively pursuing the one which provides the greatest benefit

Challenges / Barriers

Project development is a difficult process with an elevated level of risk. The team at Chaberton are experts of developing successful projects and being able to manage the various responsibilities that are part of project development. Challenges include siting issues, neighbor / community feedback, site environmental considerations, and utility infrastructure limitations, among others. The optimal way to manage these challenges

is ensuring proper and comprehensive due diligence, as well as proper project development and management, including stage gated development done in a way to eliminate risk efficiently.

Project Development Timeline

Project development is a timely process. Origination & site contracting may take 3 – 6 months. It is typical for project development to require 9 – 18 months, which includes local permitting and interconnection studies. Chaberton plans to coordinate with the County and the overall project team to ensure the timeline for specific project development meets the overall project timeframe. Detailed engineering & optimization is included in the 9 – 18-month timeframe; this will take approximately 2 – 4 months, with constant coordination among the project team and the County. Outreach and contracting for subscribers to Distributed Generation Assets is also included in the 9–18-month timeframe; this will take approximately 3 – 6 months.

County Coordiantion

Chaberton welcomes meeting with the County to better define the scope of goals of this Initiative.

4. Appendix Questions

We have answered some of the questions as posed in the Appendix. As the Opportunity matures and we establish additional partnerships to provide the full scope of services, we will be able to provide a more holistic response to all the questions.

1. Vision
    a. What is your vision as to how the County Utility could fit into the emerging energy ecosystem?
        i. The County Utility has an opportunity to leverage both regional resources and industry resources. To reach the full potential of the Utility's goals, careful consideration needs to be given to the structure of programs so that industry capital can be leveraged to its fullest extent. We this this as an opportunity for renewable power to be both generated and utilized locally, with the benefits of this low cost and inflation proof power flowing through directly to residents.
    b. How might the County Utility improve services compared to traditional systems?
        i. Capitalization of projects; integration of programs (energy efficiency combined with renewables); and grid modernization as cornerstone to resiliency.
    c. How would you propose building a system in a manner that constraints cost based upon available loads, yet is flexible enough to adapt to new end users who are attracted to the system?
        i. The inclusion of large users who offer interruptible power needs will provide significant grid services. By incentivizing these types of users, including being able to offer locally generated green power, we will be able to better manage grid resiliency.
    d. How might your approach be different for new developments, such as industrial or commercial parks, versus industrial customers? Would you envision merging district energy or transportation or hydrogen into the development?
    e. How might you go about marketing your vision to end users?
        i. Capitalizing on existing best practices currently used by third party energy suppliers, including community solar subscription organizations, with adding significant community engagement.
2. Business Model Economics
    a. How do you envision revenue flowing through the various entities?
        i. The Utility has the potential to deploy on-bill financing for various programs to ensure the lowest costs of capital and minimal barriers to entry for your users.
    b. The County envisions a scenario where the developer / concessionaire is compensated through a pass-through model from power purchase agreements with individual customer / off-takers. Do you see any problem with this model or have suggestions on possible alternative compensation models?
        i. We see this model as viable. We would recommend a structure similar to Community Choice Aggregation, in which the utility customers are automatically 'opted in' to subscriptions / PPA's in order to have a larger customer base and expedite the timeframe. If each customer needed to be contacted and contracted with individually, likely this timeframe will be prohibitive.
    c. What process would you take with the County to design customer billing (i.e., tariffs) in a fair and transparent way?
    d. What types of tariffs are needed to support the County initiative?
    e. Would you be willing to provide the capital for the scope / role the County envisions?
        i. Chaberton Energy is willing to provide the necessary capital for distributed generation assets. These could include the necessary assets for microgrids as well, depending on how the benefits of the microgrids are monetized to the project owner. These benefits could include demand / capacity payments, or grid reliability charges to customers.

f. How would you ensure prices for specific projects (e.g., new distribution line or a microgrid) are competitive?
    i. Solar energy is currently one of the most cost competitive forms of energy generation. By capitalizing on low-cost energy, the costs to consumers can be structured in a way that allows for the installation & maintenance of required distribution infrastructure and microgrids.

3. Organization Models
    a. Would you be willing to contract directly with the County to be responsible for the full scope of this initiative?
        i. Chaberton Energy is willing to contract with the County for those parts of the scope which fall on Chaberton' s services. There are certain services that Chaberton will need to partner with other firms, and for those we foresee contracts being signed directly between them and the County.
    b. What are the tradeoffs for one firm serving all roles versus separate firms serving separate roles?
        i. Based on the goals of the County, it is unlikely that a single entity will be able to fulfill all roles. The scope includes various tasks which typically require a unique skill set. We feel the County will be best served by partnering with a team that specializes in certain areas to fulfil the full scope.
    c. How would you structure the relationship between yourself, the County, and other entities (if applicable)?
    d. What level of responsibility, if any, would you be willing to have for microgrid project identification and development, customer identification and selection, customer contract negotiation, etc…
        i. We are willing to take on the development responsibility & risk for microgrid project identification & development, but would require the full collaboration and support of the County and utility.
    e. What level of pre-design and other information or assurances would you need to respond to an RFP/Q and engage in negotiations with the County?
    f. What level of commitment would you need to have from potential County utility customers to respond to an RFP/Q and engage in negotiations with the County?
        i. This will depend on if the County is planning to have an 'opt in' scenario for utility customers. If not, even just some high-level feedback from utility customers showing interest will suffice to move forward.

4. Concession Agreements & Other Contracts
    a. What contracts will need to be in place and between what entities?
    b. What critical terms and conditions need to be addressed?
    c. What term lengths would respondent be comfortable with for a distributed energy of microgrid PPA?
        i. PPA terms typically range between 15 and 25 years. The longer the term allows for more competitive rates. The most standard term is 25 years.
    d. What additional information would you need to sign a contract with the County for a scope of work?

5. Initiative Timelines
    a. What is a typical turn-around time for you to sign a contract for your role(s)?
        i. Once the role is better defined, and partners are identified to provide the full scope, final contracting should take between 30 and 60 days.
    b. What is a typical development time for a microgrid, from customer recruitment through operation? What are the major milestones?
    c. What impact on this initiative do you foresee, if any, from the current supply chain disruptions?
        i. Supply chain disruptions are a serious problem for most industries. In solar development, this has led to both increased costs and longer timeframes on most major equipment. The

best way to deal with supply chain issues is to order equipment in sufficient capacity and with additional timeframe built in.

6. Technology
    a. What technologies should the County consider to address power issues for commercial and industrial customers? (power quality issues vs. short power outages vs. long power outages)
    b. Can you provide high-level cost estimates for distribution infrastructure, distributed generation, and/or microgrid across difference sizes (e.g., 14.4kV feeder, 1MW/1MWh battery, 5MW solar PV).
        i. At a follow up meeting, Chaberton will be able to provide a high-level cost estimate for both a 5MW solar project and a 1MW/1MWh battery storage solution.
    c. Are there ranges of economic feasibility that the County should be aware of when considering on-site generation, storage, etc. For example, do projects only over X MW prove to be economically feasible in your experience?
        i. Solar development & construction costs are decreased based on capacity. However, we can group multiple projects together to allow for competitive pricing on smaller systems. Project viability likely should be determined on a case-by-case basis.
    d. How should cybersecurity of the utility, individual microgrids, customers, or other pertinent entities be ensured?
    e. What is your approach to managing: capacity and transmission peak load contributions? Energy market arbitrage? Frequency regulation?
7. Diversity, Equity, and Inclusion
    a. How will you ensure Diverse, Equitable, and Inclusive (DEI) partnership(s) throughout this Initiative?
        i. Building stakeholder groups focused on DEI issues; ensuring programs are inclusive and low-income programs are separate and distinct from market rate offerings; strategic marketing to disadvantaged communities.
8. Other
    a. What potential risks, setbacks, or hurdles do you see for this Initiative?
    b. Please provide any other information that you feel would be pertinent to the County at this stage of the process.
        i. We think an essential piece of this infrastructure will include large users with interruptible power demands. Chaberton has a unique concept in how to implement these types of large users into the system in a way that will significantly increase grid stability.