

GREEN STRATEGIES LLC

RESPONSE TO REQUEST FOR INFORMATION

CUYAHOGA COUNTY UTILITY & MICROGRIDS

Green Strategies LLC is pleased to respond to Cuyahoga County's Request for Information (RFI) regarding the technical, commercial, and legal frameworks that would support the development of a municipal electric utility and multiple microgrids throughout Cuyahoga County.

1. Required Responses

Entity Name

Green Strategies LLC, an Ohio and Tennessee company

Summary of Services

Green Strategies is consulting company focused on helping customers navigate the complex and ever-changing energy and sustainability space.

- **Energy and Sustainability Strategy**
Creating a plan for achieving energy savings, carbon reduction goals, or sustainable operations by developing a portfolio approach with clear metrics and verification procedures to help pick the right projects to turn goals into realities cost effectively and measurably.
- **Energy Cost Management**
Helping clients understand the drivers of utilities costs, and then to lower those costs and risks.
- **Market Access and Business success**
Evaluating how to differentiate customer offerings and enter new markets by developing and refining a sustainability value proposition to customers.
- **Sustainability Culture**
Developing a culture of sustainability within an organization to deliver a myriad of benefits by aligning sustainability and corporate responsibility actions to core values, creating an authentic message that resonates with stakeholders.

Specific to this RFI, knowledge and experience in delivering these services to the potential customers of the Cuyahoga County Utility will be extremely useful as the Utility identifies, prioritizes, and develops projects, develops customer offerings and operational processes, and presents back to the community and County Council on results.

Relevant Experience

Green Strategies has experience in two (2) areas which will be important and useful in the proposed roles:

1. **Technical and Economic Microgrid Development**
Green Strategies has a deep understanding of the elements and systems that compose microgrids including generating equipment, electrical distribution, and controls. This knowledge enables Green Strategies to think innovatively about possible system configurations to meet potential County Utility customer needs. In addition, this experience extends to include how to financially evaluate different options for supplying energy and building models to show required payback for the County Utility, the potential developer of the projects and the customers .
Specific projects and experience include:
 - Working over the past five (5) years on the project teams working to understand and document the potential for microgrids in Cleveland, OH and Cuyahoga County
 - Working in engineering and project management roles for multiple microgrid installations in the pulp and paper, pharmaceutical, and institutional industries.

2. **Utility Customer Profiles**
In our work with a range of customers across industries and geographies, Green Strategies has built a knowledge of how customers evaluate the procurement of energy and energy related services. This knowledge includes how customers value renewable energy, resiliency and redundancy, utilities outsourcing, and relationships with utility providers.
Specific projects and experience include:
 - Leading the global energy procurement for a Fortune 500 company including electricity, renewable energy, and natural gas
 - Assisting customers in the development, execution, and evaluation of power supply contracts including both fixed price and spot market purchases
 - Providing technical, financial, and contracting consulting services to companies developing on-site solar or purchasing renewable energy through power-purchase agreements

Proposed Role(s)

Green Strategies envisions three (3) potential roles in the development and operation of the Cuyahoga County Utility.

1. **Program Consultant**
Green Strategies would be an advisor either working directly for the County or as a sub-contractor to the company developing and/or operating the Utility on the County's behalf. In this role, Green Strategies would leverage its industry knowledge and history in the development of the Utility to assist and provide additional expertise as needed. Contracting could be on a retainer or hourly service rate basis or could be fixed price for specific projects. In this role, Green Strategies would also propose to leverage the service contract to add temporary team members to assist in delivery with a particularly focus on

- hiring students from local universities (Cleveland State University, Case Western Reserve University, Cuyahoga Community College, and others) as analysts.
- 2. Business Development Representative**
One of the biggest challenges to development of the County Utility will be linking customers and the utility on projects. Green Strategies would play the role of intermediary working with the utility and its developer(s) to understand the types of preferred projects, identifying customers for those projects, and then working with the customer(s) and developer(s) to get those projects into the contracting phase. This process would also work in reverse, starting by identifying potential customer requirements, turning the requirements into projects, and then working with the developer to determine whether the project would be feasible and under what conditions. Green Strategies would propose a fee structure for these services as a percentage of realized revenue or cost per kWh sold which would minimize upfront costs and tie fees to performance.
 - 3. Advisory Board Member**
A role not directly defined in the RFI, but critical to success, is the creation of an Advisory Board for the Utility. The Advisory Board would provide guidance to Utility as well as County Council on the development and operation of the various aspects of the Utility. The Advisory Board would also be tasked with advocating for the residents and businesses of Cuyahoga County regardless of whether those parties were directly working with the Utility.

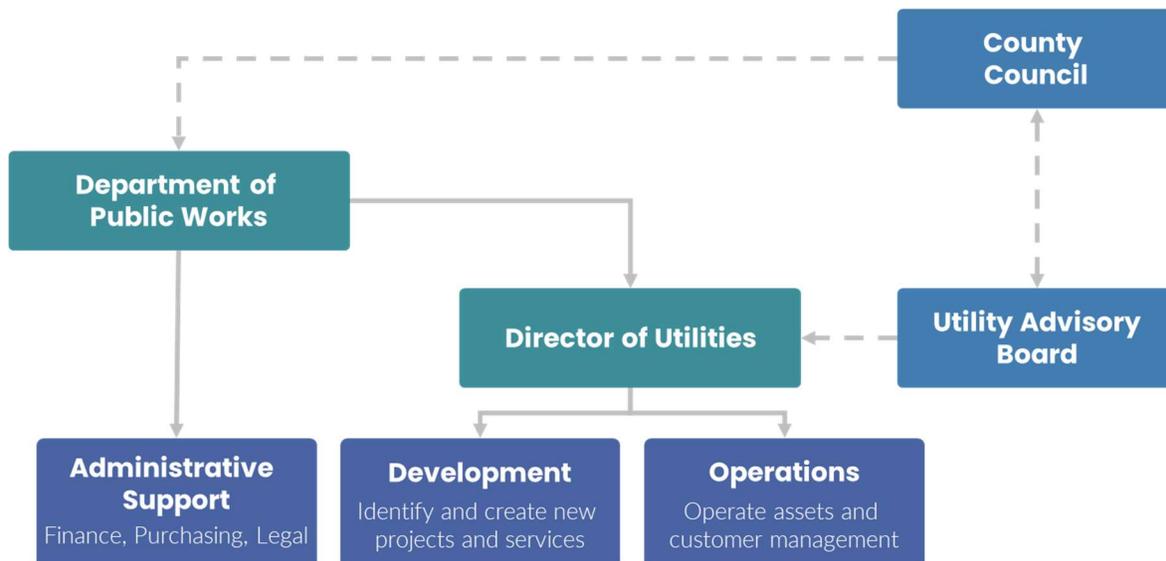


Figure 1. Utility Organizational Design with Proposed Advisory Board

Green Strategies is prepared to act quickly in moving forward with any of these roles and is very willing to meet with the County's RFI team to discuss.

Other Role(s)

In reviewing the roles as described in Section 3 of the RFP, the following additional roles should be noted.

1. Legal Counsel
This role may be comprised on both an enhancement to the existing legal counsel of the County and the contracting of outside legal counsel. There are numerous legal and contractual issues which will need to be resolved in a timely manner in both the development phase of the Utility as well as the operational phase, plus the potential given the utility environment in Ohio of potential litigation as the Utility grows. Having counsel on staff or a mechanism to quickly engage additional counsel will be important.
2. Advisory Board
As described above, the inclusion of an Advisory Board is best practice in the creation of a municipal utility. The Advisory Board will evaluate and recommend options across a wide range of topics, and therefore should be broad in its membership including people from the utility/energy industry, residents, and businesses, and/or government or regulatory roles.

2. Responses to Appendix Questions

1. Vision
 - a. What is your vision as to how the County Utility could fit into the emerging energy ecosystem?
 - b. How might the County Utility improve services compared to traditional systems?

A municipal utility brings three (3) key elements to the new energy ecosystem:

- *Commitment to location which is not the case for Investor Owned Utilities (IOUs)*
- *Regulatory flexibility since they are not subject to the public utilities commission, FERC, and other regimes which leads to innovation and speed of creating new services*
- *Financing stability of a public entity which provides a back stop for investment in infrastructure.*

These elements would allow the County Utility to fill gaps between customers' needs and the traditional distribution utility model. These services could include renewable energy, highly reliable energy, transportation electrification services, and energy efficiency programs.

- c. How would you propose building a system in a manner that constrains costs based upon available loads, yet is flexible enough to adapt to new end users who are attracted to the system?

Each project needs to be constructed based on an initial customer offtake with a contract in place, but with the potential to expand based on existing or potential new loads. This means creating a constellation of smaller systems across the County instead of a hub and spoke model with a monolithic large system attempting to service all clients.

- d. How might your approach be different for new developments, such as industrial or commercial parks, versus existing customers? Would you envision merging district energy or transportation or hydrogen into the development?

The clients should lead the conversation as to which services make sense for them. The County Utility should be willing to investigate whether it can economically provide those services and be as transparent as possible as to their reasoning. Specific to new versus existing customers, new customers provide additional flexibility in design, construction, and operation over existing customers. Additionally, the County may have goals beyond those of the County Utility in attracting a new business to NE Ohio meaning that a utility project may be coupled with other incentives.

- e. How might you go about marketing your vision to end users?

There are two types of marketing that would be done should Green Strategies be selected for Business Development. First would be a general awareness campaign making businesses in the targeted areas of the County aware of the Utility, its potential to provide services, and how a relationship might operate. Second would be to work with the developer on specific projects, e.g., land-fill solar locations, and approach those potential customers with a more robust presentation.

2. Business Economic Models

- a. How do you envision revenue flowing through the various entities?

The County would collect revenue from customers, although the billing system would be operated by the developer(s). The County would then pay the developer(s) and other parties. For most parties including developers, this would be a per kWh fee, but some services such as legal might be fixed or other fee structures. The developer would then use their income to pay back their development costs, cover their operational costs,

and make their margin.

- 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 problems with this model or have suggestions on possible alternative compensation models?

No issues with model as far as we are aware. This may be the only acceptable model since the County Utility needs to be the official interface to the customer.

- c. What process would you take with the County to design customer billing (i.e., tariffs) in a fair and transparent way?

Customer tariffs/contracts should be designed as transparently as possible, but unlike IOU tariff development should not be based on a pre-determined mark-up or margin. The County should establish procedures to ensure oversight and visibility:

- *Operate RFPs on a regular basis for developers on individual projects to ensure lower costs*
- *Require developers to be as transparent as possible about their cost structures and margins*
- *Participate in industry events and communicate with other utilities to see what others are paying for similar projects and services.*

- d. What types of tariffs are needed to support the County initiative?

This question is flawed – there can be no predetermination of tariffs. Guidelines for creating tariffs can be provided. Suggest that tariffs are kept as simple as possible with the ability for the client to drive complexity to meet their goals.

- e. Would you be willing to provide the capital for the scope/role the County envisions?

N/A

- f. How would you ensure prices for specific projects (e.g. new distribution line or a microgrid) are competitive?

Refer to 2.c. response.

3. Organization Models

- a. Would you be willing to contract directly with the County to be responsible for the full scope of this initiative?

No.

- b. What are the tradeoffs for one firm serving all roles versus separate firms serving separate roles?

The best scenario would be for one firm to be prime to the County. This would keep the County's costs for contract management, legal, reporting, etc. as low as possible. However, this would then be reflected in costs to the County since the prime would need to have mark-ups on the other services.

- c. How would you structure the relationship between yourself, the County, and other entities (if applicable)?

Green Strategies would likely be a sub-contractor to another party, although could be directly contracted by the County for Business Development and Advisory Board activities.

- 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 negotiations, etc.?

See RFI response.

- 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?

As long as a developer is in place, Green Strategies would be willing to negotiate contract(s) 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?

Same as above.

4. Concession Agreement & Other Contracts

- a. What contracts will need to be in place and between what entities?

The critical contracts would be between the customer and the County Utility (offtake contract) and then the County Utility and the developer

(developer contract). Other contracts may be needed for additional services such as legal or business development.

- b. What critical terms and conditions need to be addressed?

The most critical terms would be around liability, particularly for customer default. These would need to be addressed in both the offtake contract and the developer contract.

- c. What term lengths would respondent be comfortable with for a distributed energy or microgrid PPA?

The industry has been moving to shorter terms, but a term of at least 10 years is most common.

- d. What additional information would you need to sign a contract with the County for a scope of work?

None.

5. Initiative Timelines

- a. What is a typical turn-around time for you to sign a contract for your role(s)?

4-8 weeks depending on the legal review of terms.

- b. What is a typical development time for a microgrid, from customer recruitment through operation? What are the major milestones?

Customer recruitment is just one part of the timeline. We would expect the following major development phases:

<i>1. Customer / Project Identification</i>	<i>3-6 months</i>
<i>2. Initial Feasibility Assessment</i>	<i>3-6 months</i>
<i>3. Contracting (Offtake and Development)</i>	<i>6-12 months</i>
<i>4. Construction</i>	<i>12-24 months</i>

This timeline assumes no major legal or construction issues.

- c. What impact on this initiative do you foresee, if any, from the current supply chain disruptions?

Supply chain disruptions have been occurring in both the electrical materials and solar panel markets. This could delay a project a few months, but the majority of the timeline is more subject to contractual

negotiations and installation times.

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)

Customers will expect high quality power (power factor, harmonics, etc.) as well as high reliability power. This can be achieved with existing technologies in inverters, batteries, capacitors, and other power quality equipment available in the market today.

- b. Can you provide high-level cost estimates for distribution infrastructure, distributed generation, and/or microgrid technologies across different sizes? (e.g. 14.4 kV feeder, 1 MW/1 MWh battery, 5 MW solar PV)

No. Since Green Strategies is not a supplier of this equipment it would be inappropriate to estimate costs in the RFI.

- 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?

By leveraging different designs and technologies, systems can be built to cover a variety of production ranges. The important consideration is the long-term load since a system built for one demand level might be much less efficient at a different demand level. Economic feasibility also depends on the delivery model, i.e., a behind-the-meter customer solution which did not require interconnect costs would be more feasible at a small system size than an off-site solution at the same size.

- d. How should cybersecurity of the utility, individual microgrids, customers, or other pertinent entities be ensured?

This question cannot be answered in the RFI, but it is very important. Every effort should be made in the contracting and design process to ensure the highest available level of cybersecurity (some of which will be required for regulatory compliance).

- e. What is your approach to managing: capacity and transmission peak load contributions? Energy market arbitrage? Frequency regulation?

N/A. Green Strategies does not offer these services.

7. Diversity, Equity, and Inclusion

- a. How will you ensure Diverse, Equitable and Inclusive (DEI) partnership(s) throughout this Initiative?

Green Strategies supports all efforts to support DEI in the development of the Utility, its operational partnerships, and its customer approach.

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.

None currently, but Green Strategies is willing to participate in discussions to further analyze and strategize on the development of the County Utility.

3. Proposed Team Bio



ALI AHMED

Founder and Principal at Green Strategies LLC

Ali Ahmed is a recognized sustainability and energy management leader who has developed and managed more than 50 global energy and sustainability programs. With over 20 years of experience, he combines an uncommon level of technical depth, combined with an understanding of business operations to create value-added, high ROI energy and sustainability programs. His areas of expertise include demand-side energy management, the Internet of Things, building and industrial automation, energy procurement, renewable energy, and sustainable transportation solutions.

RELEVANT EXPERIENCE

- Analyzed corporate customer global site portfolio for on-site solar availability, technical feasibility, and financial impact including developing RFPs and providing individual installation oversight. Led to deployment of approximately 2 MW DC roof-top system thus far.
- Performed financial analysis of large-scale Virtual Power Purchase Agreements for disaggregation to multiple corporate off-takers.
- Analyzed 21M sf facility portfolio for availability, technical feasibility, and financial impact of on-site solar. Led to deployment of multiple systems totaling in excess of 4 MW.
- Led RFP and contracting for 25 MW off-site Virtual Power Purchase Agreement.
- Developed and led program to identify, implement, and track energy efficiency projects across global site portfolio.
- Analyzed potential availability and impact of deployment of on-site solar and energy efficiency projects across massive global location portfolio of confidential client.
- Worked with retailers to develop multi-site deployments of energy management systems.
- Worked in the Power and Energy Management Solutions team developing and delivering energy control and energy efficiency projects to industrial and institutional facilities globally.

EDUCATION AND CERTIFICATIONS

Case Western Reserve University - Weatherhead School of Management, EMBA

Case Western Reserve University, BS, Physics

Certified Energy Manager, Certified Energy Auditor, LEED Accredited Professional – New Construction

