Mesa Associates, Inc.

Engineers and Consultants

Proposal to: Mike Foley, Department of Sustainability

Cuyahoga County

RFI CUYAHOGA COUNTY UTILITY & MICROGRIDS

Mesa Proposal # 22BPINMU.011

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1 INTRODUCTION – Entity, Summary of Services, and Relevant Experience

We understand Cuyahoga County, Ohio, has created a new energy utility, County Utility (CU), and CU's vision is to help transform Northeast Ohio's energy grid to be cleaner, more resilient, more secure, and more cost effective for its residents, industries, and commercial businesses via innovative and new strategies. CU must be able to serve the industrial, commercial, and residential customers with reliability levels consistent with the standards of advanced manufacturers (99.999 percent uptime) allowing Cuyahoga County to reclaim the major industrial status it once enjoyed with the new digital economy and advanced manufacturing.

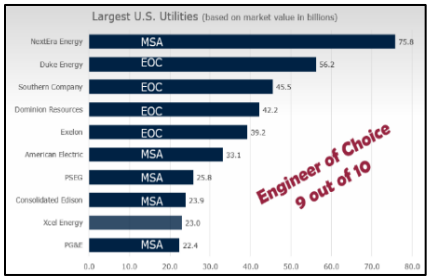
INTRODUCTION: Mesa Associates, Inc. (Mesa) is a full-service Engineering, Procurement, and Construction (EPC) firm providing Owners Engineering (OE), Civil/Structural, Electrical, I&C, Mechanical, and Systems Integration SOLUTIONS to electric utility, industrial, government, and municipal clients. Mesa is a minority and woman-owned business enterprise recognized in the State of Ohio and is ranked TOP 5 in EC&M Electrical Design Firms. Since our founding in 1988, we attribute our continuous growth to our attention to detail, ability to provide innovative designs consistent with the customer's needs, and to efficiently engineer constructability design; 97 percent of our $142M engineering revenue in 2021 was from existing customers. Mesa has a nationwide Distributed Energy Resiliency & Microgrid (DERM) team. We provide value for our industrial and utility clients by mastering the DERM market and successfully implementing projects with our partners. We bring this knowledge to bear on the execution of these projects along with the lessons learned that we gathered along this journey.

EC&M 2021 Top 40 Electrical Design Firms

2021	2020	FIRM NAME & LOCATION	REVENUE
1	1	Burns & McDonnell, Kansas City, Missouri	$583.7
2	2	Stantec, Inc., Edmonton, Alberta	$290.4
3	3	Tetra Tech, Inc., Pasadena, California	$207
4	4	Mott MacDonald, Iselin, New Jersey	$180
5	5	Mesa Associates Inc., Madison, Alabama	$126.3
6	9	Ulteig Engineers, Inc., Fargo, North Dakota	$79.6
7	7	Stanley Consultants, Muscatine, Iowa	$63.9
8	8	Carollo Engineers, Inc., Phoenix, Arizona	$59.5
9	NL	Salas O'Brien., Santa Ana, California	$49.4
10	6	Henderson Engineers, Inc., Lenexa, Kansas	$47.6

SAFETY: Every captured thought at work and at home begins with a safety discussion centered around "Zero Harm, Return Home Safe." We have an EMR rating of 0.8,1 and all our suppliers and contractors have been cleared with numerous safety systems, such as Vero Data Management System, and has up to date OSHA training and job-related refresh.

EXPERTISE: Mesa's electric utility client base includes major utilities and distributors as well as Public Owned Utilities (POU municipal and Co-Op) for counties like Cuyahoga. Our utility business began in 1990 with TVA and has currently grown to include AEP, Duke, First Energy, and a host of others as Engineer of Choice clients. Our government and industrial client base ranges from United States Departments of Defense and Energy to Alcoa Aluminum and Kroger along with a host of others. Mesa and our energy delivery partners have the nationwide DERM and Electrification and Grid Modernization (EGM) expertise as well as the development and implementation program that specializes in solutions for both renewable and dispatchable microgrid generation solutions/projects. We have projects from City Light in Seattle, WA, to Keys Energy in Key West, FL, which provide exciting, innovative, and cost-effective solutions to municipals systems from coast to coast.



We share your vision and want to assist CU in delivering innovative energy solutions to attract and retain clients who demand state-of-the-art technologies married with reliable and affordable energy delivery. Our forte is developing projects as OE and delivering safety-driven, high-quality, and cost-effective utility and industrial DERM EPC solutions. We would be honored to add Cuyahoga County to our expanding client list.

UNDERSTANDING: We recognize that CU will develop and work directly with their customers to deliver safe, reliable, and clean energy solutions based upon our team's energy and utility market knowledge, technical expertise, and installation proficiency. Mesa is honored to be considered for the CU Microgrid request for Information dated June 8, 2022 (Request). We are a proven successful solutions, development, and implementation partner for you. Collaboration is a key aspect of Mesa's team approach to projects and their success. We embrace this philosophy that success on these projects begins with effective collaboration between our team, CU, and the Cuyahoga County Community (Host) in order to provide tailored solutions resulting in successful projects. Our DERM team brings the commitment, knowledge, experience, expertise, collaborative approach, and project plan to begin delivering successful turn-key projects with CU throughout the county.

QUALITY: Mesa's staff of over 900 professional, technical, and administrative personnel in nineteen offices across the U.S. are culturally diverse, sensitive to customer desires, and highly skilled in their fields. Mesa's DERM team is led by SME engineers with decades of EPC, utility interconnection, reliability, and resiliency improvement experience. We are backed by 150+ PE's providing real world solutions. We pride ourselves in providing a good value for your dollar. As with all our projects, we utilize Mesa's QA/QC process to assure quality and, more importantly, to request Client Feedback. Our goal is to deliver industry leading budget, schedule, and scope communication as well as to provide world-class safety, quality, design, service, and innovative solutions while taking care of our customers' reputations. We are ready to serve CU utilizing our local Columbus, OH, office that houses our POU team and our nationwide corporate resources.

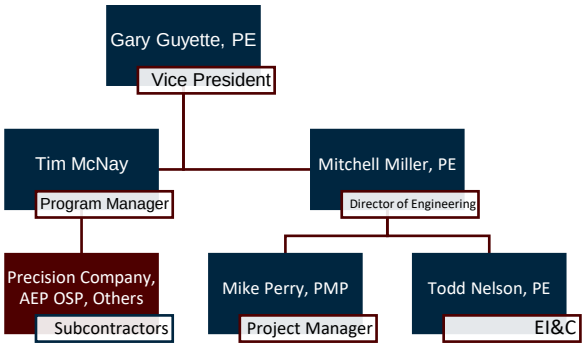
WHY MESA: We would like to share with you why we believe an experienced engineer-led team makes sense for this opportunity. We have core beliefs and expertise that can deliver success:

- At heart of every project is this philosophy that people are more important than plans.
- Mesa and our energy delivery partners have the nationwide DERM and EGM expertise, development, and implementation programs that specializes in solutions for both renewable and dispatchable microgrid generation solutions/projects for municipals systems from coast to coast, and we are ready for this challenge.
- We are an engineering firm that delivers creative, technically sound, and economically constructable solutions for our partners.
- We minimize your risk by providing excellent engineering services with intentional and focused efforts that meet Owner and Host's project requirements and goals.
- We consider, plan for, and mitigate risks; thus, allowing our team to deliver your project in an efficient, effective, and organized fashion.

- We provide value by mastering the DERM market and successfully installing these projects.
- This type of DERM project is not one of the many things of which Mesa is capable; it is THE type of project that Mesa's 900 engineers do in that we specialize in DERM integration projects.

We truly appreciate being given the opportunity to work with CU. We realize that each engineering request has an issue/opportunity and is searching for a solution. Mesa has successfully installed numerous DERM projects like these and look forward to working with CU.

2 PEOPLE: Leadership Team and Partners Roles



Mesa's project team philosophy that people are more important than plans is at the heart of every project; therefore, projects are only successful utilizing purposeful communication and hard work through experienced teams. Mesa's leadership team has performed numerous as well as complicated utility and industrial DERM integration projects. Please find below a brief introduction to the leadership of your DERM team. (A RACI Matrix will be provided once a collaborated detailed scope with activities is defined in Section 4, STEP 3 and 4.)

Tim McNay, Program Manager: Offices in Columbus, OH, and Pensacola, FL. Engineer of Record & Program Manager for numerous electric, water, and wastewater DERM projects involving upgrades, integrations, and retrofits for resiliency, storm hardening, and revenue generation with peaking, DR, and arbitrage. Tim has completed his 23rd DERM EPC project in five years with Mesa and his 116th DERM EPC project in his career. Tim has also worked for AMP-Ohio as Director of DERM Generation installing and upgrading along with O&M for 160 renewable and dispatchable assets from Cleveland to Cincinnati, OH.

Mike Perry, Project Manager: Office in Columbus, OH. PM for numerous electric, water, and wastewater POU DERM projects, especially municipal projects involving generation integrations and retrofits for resiliency, storm hardening, and revenue generation with peaking, DR, and arbitrage. Formerly Senior Vice President of Generation Operations for American Municipal Power Columbus, OH, Joint Action Agency representing 135 municipals in the Midwest and longtime Utility Director for the City of Hamilton, OH, a large municipal system between Cincinnati and Dayton, OH.

Mitch Miller, Director of Engineering: Electrical PE for numerous DERM Generator projects involving generation and substation upgrades, integrations, and retrofits for resiliency, storm hardening, and revenue generation with peaking, DR, and arbitrage. Mitch has 19 years of service at Mesa.

Precision Companies, Inc.: An industrial/utility contractor based in the Midwest. They have worked with Mesa as our construction contractor on DERM projects. They have completed work similar in scale and complexity to the CU projects for over 20 years. They place the highest priority on safety and on completing projects in a timely fashion. Precision has successfully completed projects all over the Midwest, so they have experience in finding the resources needed get the job done with the help of local DEI companies. They know the best path to successfully complete these projects.

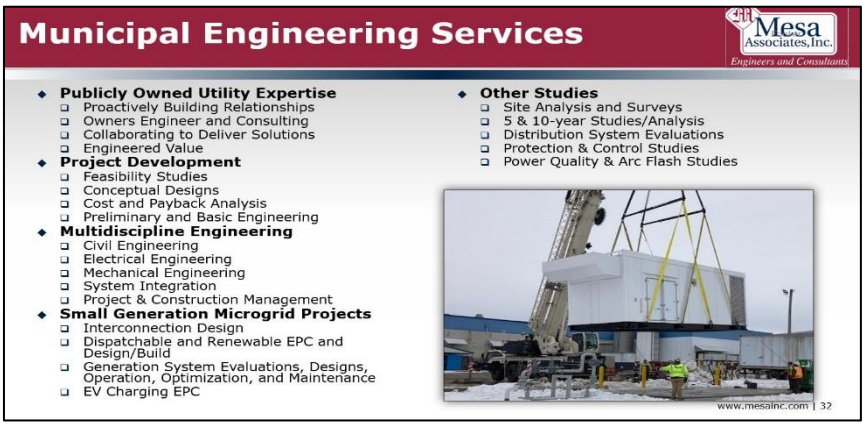
AEP On-site Partners: Owned by American Electric Power (AEP), they are one of the non-regulated competitive businesses that works to deliver customer-focused energy solutions nationwide. AEP OnSite Partners provides technical expertise, market knowledge, and investment capital for a geographically diverse array of energy projects, including solar, combined heat and power, energy storage, electrical substations, fuel cells, waste heat recovery, and peaking generation resources throughout the U.S. With the backing of one of the largest utilities in the US and a century of electric service expertise in Ohio and PJM, they can deliver ever changing market opportunities that will maximize CU efficiencies and revenue for decades to come along with funding and ownership opportunities.

3 PROGRAM: Expertise and Engineering Project Approach

Engineering
- Project Development
- Owner's Engineer
- Studies and Consulting
- Preliminary Engineering
- Detailed Engineering

Generation Microgrids
- Battery Storage / EV
- Dispatchable
- Renewables

Power Delivery
- Transmission Lines
- Substation & Switchyards
- Distribution Systems



Mesa's project and technical approach utilizes our decades of expertise to execute each activity according to the CU collaboration and discussions resulting in a detailed scope of work using our experience, expertise, and familiarity with previous DERM projects. Mesa's DERM philosophy provides consistent and proven processes that leads to predictable results and project success. Mesa will begin with the scope design concept and leverage the design team's decades of DERM experience to provide value engineering to the project.

Once the CU design has been agreed upon, Mesa, utilizing our long-established QA/QC process, will follow our processes and tools enabling us to support the project needs. Mesa will apply the essential engineering effort required to eliminate or mitigate significant procurement and construction risk items and quickly facilitate innovative solutions to maintain schedule. Mesa's design will also ensure the project is integrated as an effective and cost-efficient solution with ease of procurement, installation, operation, and maintainability.

- **Safety:** Every captured thought at work and at home begins with a safety discussion centered around "Zero Harm, Return Home Safe."
- **Project Initiation:** Every project begins with a written Project Execution Plan (PEP). The PEP consolidates and communicates information from the proposal to the Mesa project team. Mesa will conduct project kick-off meetings to review the PEP in detail with team members to ensure that all project team members understand and agree upon the scope, schedule, and requirements.
- **Design Review:** We will have design review meetings that will be highly interactive and iterative; therefore, activity coordination and communication between key stakeholders and the design team is vital to the overall success of the project. The early design evaluation reviews with stakeholders will include Host, vendors, state and local JHA representatives, etc., for overview of the project.
- **Quality Assurance:** Our projects are guided by a comprehensive QA program that serves as the foundation for our technical and management activities from award to the project turnover. Mesa has successfully executed thousands of multi-discipline projects in our 34-year history.
- **Document Management:** All design projects will be executed within Mesa's Document Management System to store, track, receive/review, check/issue, and monitor the status of project documentation. This system allows us to manage and control the project throughout its lifecycle.

4 PLAN: Roles, Design, and Functional Details of a Utility System Microgrid

The main design and project objective for this Request for Information is to deliver maximum value to CU, Mesa, and our partners based on efficient and effective project delivery like our previous DERM Projects. On these projects, we have demonstrated flexible and innovative design objectives providing engineering value that followed all relevant engineering codes and standards along with industry standard functional details; all the while delivering efficient constructability. The initial STEPS of the DERM plan, as we have executed for other municipals, are as follows:

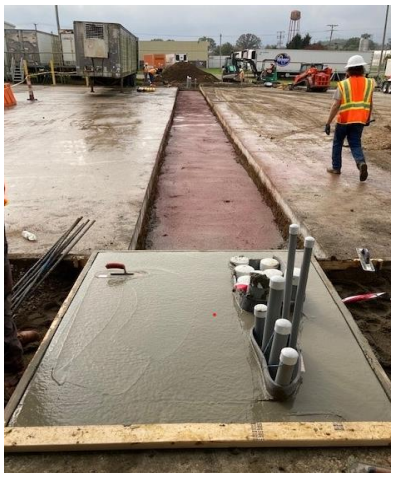
1. Produce and sign a Non-Disclosure Agreement (NDA), so we can begin to develop a relationship.
2. As we progress, we will execute a Memorandum of Understanding (MOU) stating we are interested in working together. This document will define the scope and purpose of the talks and will serve as a written agreement demonstrating there is a willingness of the parties to move forward and a desire to work towards a contract and partnership.
3. Once selected, we will have big picture discussions such as vision, goals, targets, approach, models, revenue, expectations, tariffs, contracts, clients, timelines, locations, technology, DEI, transportation and charging, and compatibility, as seen in Section 7 Appendix of the RFI.
4. Discussions on and about OE services leading to a realistic 30 percent developed design plan with actual constructability information on the initiative's offerings, including Total Installed Cost, Operation and Maintenance Cost, ROI, funding, capital, savings, revenue, etc., that can be delivered to investors, partners, councils, AHJ's, and others required to push the Initiative forward.
5. Develop individual project's scope, schedule, budget, and deliverables with the detailed design plans for partners to provide capital, PPA, and pro forma contract opportunities.

This RFI is to assist Cuyahoga County deliver their initiative to advance social equity, mitigate climate change, and bring jobs into the region. This includes the creation of energy districts to attract businesses that value uptime, such as are found in the digital economy.

Mesa sees our role as developer of Distributed Generation Projects and/or Microgrids as well as the Design and Construction Team of Distribution Infrastructure, Distributed Generation, and/or Microgrids. The scope of work will be delivered collaboratively but will generally include full-service design and engineering services along with construction/installation, project and construction management, interconnection with the HOST's electrical system, commissioning, and training/turnover. We would like to share some of our previous DERM project expertise and pictures from recent projects.



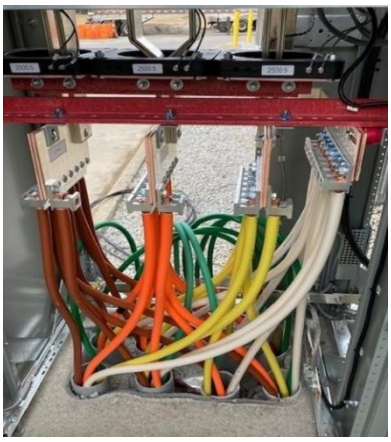
Mesa's practical and functional experience starts with the fact that we are a utility and industrial focused engineering firm that delivers creative, technically sound, and economically constructable solutions with an intense focus on our municipal partners. Our DERM team provides real engineering value for our industrial and utility clients by having an intense focus on the functional details of the DERM market as well as successfully installing resiliency EPC projects nationwide.


We begin this process by understanding the concept and big picture goal of the initiative along with collaborative discussions to become familiar with the specifics, risks, and challenges of each step as presented in the discussion, requests, addendums, questions, research, and site visits.

Each engineering discipline, procurement, and construction specific scope solution begins with continual collaboration with CU and Host's team. These inputs provide for a streamlined process where we all contribute to the success. Each design and detail solution will be developed based on the overall objective as identified in the scope and through our collaborative efforts as witnessed in our previous DERM projects.





Mesa's DERM team proactively identifies issues/risks and mitigation solutions beginning in the proposal stage until the project turnover through our QA documented Engineering Project Approach and Phase gates or stages, multidiscipline engineering and construction team meetings, squad checks, and discussions. We also have the decades of DERM experience to anticipate design challenges, risks and potential solutions. This collaboration and cooperation between our team's defines risk and mitigation, provides clear design objectives for our team, and delivers functional detail project solutions. Further Mesa understands the scope of DERM projects, and the details associated with executing that scope. As we have shown in this RFI this type of DERM projects is the thing that Mesa and our partners do for municipals, especially Ohio based municipals.

Please review Section 5 RELEVANT EXPERIENCE – Recent DERM Projects, which highlights some of the projects that show Mesa's specialization in utility and industrial DERM projects for municipals.

5 RELEVANT EXPERIENCE – Recent DERM Projects

5.1 Case Studies

- **Batavia, Ohio:** The Village of Batavia in Clermont County, Ohio, desired to start their own municipal electric system and was unsure how to accomplish this goal. In 2017, Batavia requested assistance from Mesa's Mike Perry and our team to lead them through the complicated process. Batavia has now become an Ohio Municipal Electric Utility through the Public Utilities Commission. We have been working with Batavia to explore DERM opportunities within their district.
- **Berlin, Pennsylvania:** The Borough of Berlin in Somerset County, Pennsylvania, was a long-established municipal, but after severe financial challenges caused by the 2014 polar vortex, Berlin leadership desired to find solutions. In 2015, they hired Mesa's Tim McNay as Owners Engineer to explore the options and offer solutions. After collaboration, investigation and discussion with Tim, Berlin decided to pursue installing a full capacity microgrid (est. 2017) to provide capacity and arbitrage savings as well as convince the largest industrial client to stay in town with enhanced energy quality and backup power.
- **Cuyahoga Falls, Ohio:** The City of Cuyahoga Falls in Summit County, Ohio, was a large, long-established municipal that did not have generation in the city and realized they may have been missing out on potential savings. After being approached by Mesa's Tim McNay and Mike Perry, the city leaders decided to find solutions. In 2017, they hired Tim as Owners Engineer to explore the options and offer solutions. After collaboration, investigation, and discussion with Mesa's team, Mesa was EPC holder for a long-term phased approach to adding microgrids throughout the city's infrastructure. The first phase was a 9 MW microgrid (est. 2018) followed by a 6 MW system (est. 2020) to provide capacity and arbitrage savings as well as backup power, which was utilized during the October 2021 blackout.
- **Hamilton, Lodi, Prospect, Sandusky, and Shelby, Ohio:** The same OE to EPC process was followed for each of these Ohio municipals installing DERM.

5.2 Sample List of Project Experience

Please find below, a sample of Mesa's relevant (last five years) project experience (Developer and Design and Construction services for DERM projects). Additional details are available:

1. **EOR & EPC Resiliency 1.5 MW NG DERM | AEP OSP and Kroger | Newark, OH**
2. **OE, EOR & EPC Resiliency DERM for Critical Facilities | KEYS Energy | Key West, FL**
3. **OE, EOR, & EPC 4 MW DERM | Borough of Berlin, PA**
4. **OE, EOR, & EPC 6 MW DERM at the City's Water Plant | Cuyahoga Falls, OH**
5. **OE, EOR & EPC Resiliency DERM for Three Substations | KEYS Energy | Key West, FL**
6. **OE & EOR CHP Resiliency 800kW NG DERM | Kalmbach Feeds | Upper Sandusky, OH**
7. **EOR for Pantex U.S. Nuclear Weapons Facility 2MW DERM | DOE | Amarillo, TX**
8. **OE, EOR, & EPC 9 MW DERM for Critical Infrastructure| Cuyahoga Falls, OH**
9. **OE and EOR for IGA 100 MW Natural Gas Plant | Hamilton, OH**
10. **OE and EPC DERM 2 MW Project at the South Water Plant | Hamilton, OH**
11. **OE and EPC Resiliency 2 MW DERM Project Water Reclamation Plant | Hamilton, OH**
12. **OE, EOR, & EPC 2 MW DERM Project at Village' s Water Plant | Prospect, OH**
13. **OE and EPC Resiliency 2 MW DERM Project at the Village's Water Plant | Lodi, OH**
14. **OE and EPC Resiliency 2 MW DERM Project Phase 1 and 2MW Phase 2| Shelby, OH**
15. **OE and EOR Resiliency 1.25 MW DERM Project | Knoxville, TN**

6 CU RESPONSE REQUESTS

Respondents are requested to answer the following questions. Minimum Requested Information:

- **Entity / Business Name, Summary of Services, and Relevant Experience:** Sections 1-5.

- **What role(s) from Section 3 would the respondent fulfill?** Mesa sees our role as developer of Distributed Generation Projects and/or Microgrids as well as the Design and Construction Team of Distribution Infrastructure, Distributed Generation, and/or Microgrids see Section 3.
  - ❒ Please provide a brief description of relevant experience for each role.
    This project is not one of the many things that Mesa can do; this is THE thing that Mesa's 900 engineers and our partners do: we specialize in utility and industrial DERM integration projects for municipals.
  - ❒ Please provide any edits to the role's definition or responsibilities. None required.
  - ❒ Optional - Within this section, consider providing a hypothetical organizational chart, a RACI matrix, or other. Please see Section 2 PEOPLE: Leadership Team and Partner Roles.

- **Are there other roles that the County should be aware of?** Yes, Owners Engineer (OE).
  - ❒ What duties would these new roles perform? A team of municipal DERM experts who serves as an independent advocate for the owner with technical oversight by filling gaps and supplementing a plant owner's resources.
  - ❒ What else should the County know about each newly defined role? The OE task may focus on single as required assignments for his team or may span a multi-year project, and the team would be involved in all aspects of project development, execution, and completion.

- **What challenges or barriers could you see for your role(s) as envisioned by the County and what might be ways for the County to address those challenges?** There will be many challenges, but the Initiative and vision is ambitious yet sound. Mesa's team believes in the concept and have assisted many of our clients in establishing their initial DERM projects.

- **What's the typical timeline/cycle for the respondents proposed role(s)?** The timeline varies, especially in today's supply chain, but in general, it is six to twelve months to find customers and another twelve plus months to build a microgrid and parts can go consecutively.

- **Would the respondent meet with the County and / or its representatives to present ideas and to answer follow up questions?** Mesa and our team would be honored to meet with CU.

- **All respondents will be placed on a list for other respondents to consider for teaming and/or subcontracting.** We welcome teaming opportunities.

7 COMPANY REPRESENTATIVE

We appreciate the opportunity to provide this RFI and serving the citizens of Cuyahoga County.

Respectfully submitted,

Tim McNay
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