APPENDIX A

STATEMENT OF WORK

"Community Microgrid Assistance Partnership Direct Funding Opportunity"

May 7, 2026

1. BACKGROUND

The National Laboratory of the Rockies (NLR) is the U.S. Department of Energy's primary national laboratory for energy systems research and development. As the energy systems laboratory, NLR's unique strength lies in developing and integrating a broad array of energy technologies into robust, resilient systems - bridging foundational research with practical applications to lower energy costs, drive economic growth, bolster national security, and deliver abundant and reliable energy.

For large portions of Americans that live in rural or remote locations, some not connected to the nation's electrical grid, energy service has not changed significantly over the last few decades—outside of becoming more costly. Additionally, abundant, dependable, and affordable energy is critical in supporting American businesses, industry, and national security infrastructure. Ensuring American energy dominance requires a new focus on industrial development, including critical mineral mining, the expansion of enterprise scale computing centers, and improving industrial and business opportunities. Opening the nation's energy infrastructure to American industries in rural and remote areas is critical to nationwide prosperity. Unfortunately, high cost, poor energy availability, and power quality can limit industrial growth including access to water, computing, and secure communications. Improvements in microgrid energy systems supplying rural areas, or the implementation of microgrid-based technology on weak distribution grids, could allow individual consumers, business, industry, public safety, and national security clients access to reliable and resilient energy services that would not have been otherwise possible, while also lowering costs for all energy consumers.

Implemented by the DOE Office of Electricity's (OE's), the Community Microgrid Assistance Partnership (C-MAP) lays a pathway for the residents, businesses, and U.S. industries in remote and rural areas to access the benefits of advanced microgrid systems while delivering much-needed information to the energy technology market.

The activities implemented through C-MAP will emphasize partnerships, long-term effective community-based capacity building, and locally informed project life cycle development. These efforts support OE's efforts to facilitate the evolution of the nation's electricity delivery infrastructure to a more affordable, reliable, and secure future through advancing microgrid innovation.

Through this project, OE—with the operational support of NLR and in collaboration with other relevant DOE offices, regional partners, local academic institutions, public and private community engagement organizations, and the larger national laboratory complex—will support

communities interested in taking advantage of advanced microgrid technology to support their future community and industrial energy needs.

2. OBJECTIVE

Through C-MAP, this project will enable collaboration with and between communities, energy suppliers, and large energy consumers, and provide needed funding and support for them to improve the operation, performance, and efficiency of their energy systems.

The 2026 C-MAP solicitation aims to support rural and remote communities to:

- Develop and implement multi-community support efforts to better support or develop advanced microgrid energy systems
- Develop detailed engineering designs and financial assessments in support of developing advanced microgrid systems
- Expand collaboration between energy providers and large load energy users, with a goal to expand industrial development in rural areas.
- Assess and improve the operation of existing microgrid energy systems.

This project is not expected to fund the implementation of new or highly improved energy systems but will support communities in the development of the materials needed and skills to successfully obtain funding from other sources to implement such projects. Projects funded though this effort are also expected to serve as demonstrations to other communities who may be considering similar approaches.

This effort is focused on microgrid energy systems meeting community or industrial needs that are electrically isolated or are being designed to operate independently of the grid for prolonged periods of time. In this instance, the solicitation uses the DOE delimitation of a microgrid as ‘‘a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that act as a single controllable entity with respect to the grid. It can connect and disconnect from the grid to operate in grid-connected or island mode” but is expected to operate independently of an external grid for long periods of time. This solicitation is not intended to support projects that focus strictly on energy resilience, such as resiliency hubs or other emergency service focused facility resiliency efforts.

3. SCOPE OF WORK

An organization implementing a project under the Community Microgrid Development Assistance Partnership Direct Funding Opportunity, the Subcontractor, shall conduct work that fulfills the specific tasks for the corresponding topic area as discussed below, including scope, tasks and deliverables. In all topic areas, a disciplined engineering approach and a professional level of documentation is expected. In all topic areas, the Subcontractor shall identify the community(ies) involved and existing or proposed microgrid power system(s). All projects should lead to an eventual measurable and reportable improvement in performance (i.e. improved efficiency, increased reliability and/or resilience), improved system operability, decreased costs, reduced project development, construction, and commissioning times, and/or improved long-term operations and maintenance. To the extent possible, improvements should

be documented and measured, providing explicit indications of project outcomes. Projects should also be implemented in a manner that allows improved industry-wide learning on microgrid energy systems, allowing other parties or communities to take advantage of the lessons obtained through the project.

There are five (5) topic areas covered under this effort, as summarized below. All efforts should be focused lowering costs, improving reliability or resilience, or improving power quality for energy consumers in rural areas.

> **Topic Area 1 - Regional Microgrid Coordination:** Help energy service providers from multiple communities collaborate to improve the operations of, or development opportunities for, separate microgrid power systems for their independent communities.
>
> **Topic Area 2 - Microgrid Integration with Large Load Energy Consumers:** Support collaboration between utilities operating community microgrids and adjacent large load energy consumers which operate, or plan to operate, independent power systems.
>
> **Topic Area 3 - Microgrid Development:** Assist individual communities with completing detailed design efforts for a new,or major retrofit of an existing,microgrid power system.
>
> **Topic Area 4 - Microgrid Transformation:** Equip individual communities to assess, design, and implement innovative microgrid improvements to operational microgrid systems.
>
> **Topic Area 5 - Microgrid Assessment for Industrial or other Large Load Energy Consumers:** Assist individual large energy consumers to develop or advance microgrid systems, expanding energy availability while lowering costs.

To meet the objective, the scope of the work the Subcontractor shall perform entails the following based on the specific topic area:

3.1: Topic Area 1: Regional Microgrid Coordination

Rural and remote communities within the same region often face similar energy challenges, and coordinating microgrid planning, procurement, and operations can create efficiencies and strengthen outcomes. The scope of work for this topic area shall focus on helping energy service providers from multiple communities collaborate to improve the operations of microgrid power systems across multiple communities. Work may also be to perform regional optimization assessments and the development of regional approaches to reduce the cost of microgrid system operation, improvement, or replacement. This effort will focus on supporting expanded collaboration for development, planning, operation, management and improvement of microgrids in multiple communities with the goal of reducing costs and/or improve reliability, resilience, security, and power quality. To execute on the work Subcontractor should be performing staff training or skills development, convenings, analysis efforts, data collection, or engineering services to improve power systems operations, performance, or management leading to the adoption or improvement of microgrid energy systems across applicant communities.

The Subcontractor shall identify areas of collaboration across three (3) to five (5) communities that identify similar challenges; develop a plan to expand collaboration while addressing the challenges; and then implement planned activities to the extent possible within the terms of the subcontract.

The expected results of this project would be improvements in management, operation, maintenance, and development assessments of microgrids across multiple communities, leading to expanded community coordination, the identification of system improvements, or multi-community microgrid development assessments that could be implemented with the support of partner communities.

An example of a project that could fit into this topic area would be the development of a multi-community maintenance collaborative that would support the training of maintenance staff, development of coordinated maintenance procedures, and the development of monitoring systems that could be implemented on each microgrid to allow for system operational monitoring from partner communities. An additional example would be the development of a regional energy improvement or disaster resiliency strategy focused on microgrid energy systems which would allow the sharing of common resources among communities.

3.2: Topic Area 2: Microgrid Integration with Large Load Energy Consumers

This topic area is intended to support utilities operating community microgrids that are interested in expanding or facilitating integration with large load energy consumers which may currently operate, or plan to operate independent power systems. These consumers may include, but are not limited to, mining operations, local industrial facilities, national security installations, enterprise scale data centers, or other major energy users. While the large energy consumer could be or become off takers from the existing microgrid, local utilities and the large consumers themselves may lack the resources or capabilities to engage in developing collaborative solutions that can lead to measurable reliability, resilience, security or power quality improvements and overall cost reductions.

Efforts would include coordinating and assessing opportunities for community energy providers to work with identified large load energy consumers to consider improving integration into existing community-based microgrids or end-of-line distribution grids seeking microgrid solutions. The Subcontractor could, but is not limited to, performing facilitation, detailed engineering studies, resource assessments, integration planning, and financial model development focusing on topics such as active load management, dispatch coordination, and operation, organizational, or management coordination. Projects could also implement some identified collaboration opportunities but is not specifically called out within the statement of work.

The Subcontractor shall identify areas of collaboration between the utility energy provider, community, and identified large energy consumers to improve or support the co-development of microgrids for mutual benefit. The Subcontractor's efforts should also develop a plan to assess or implement identified improvements to the extent possible within the terms of the subcontract. Subcontractors will be expected to provide information on the agreements or improvements implemented to allow other organizations to take advantage of project outcomes.

The project is expected to result in the evaluation, design, innovation and, if feasible within the context of the solicitation, initial implementation of physical or operational integration between large load energy consumers, potentially with existing independent generation, and community microgrids. Microgrid advancement and integration plans, including improvements to existing or proposed microgrid power systems of the industrial or national security clients or host community microgrid.

An example of a project that could fit into this topic area would be the development of an energy supply agreement between an energy cooperative, either operating a microgrid or considering the use of a microgrid-based energy system, and a proposed rare earth mine that details the specification and design of power system improvements and needed controls upgrades to ensure the availability and reliability of energy services to meet the client's energy needs. A second example would be the operational or management integration between a local utility and an industrial client that is operating their own microgrid, allowing the local utility to provide power during low load periods and the industrial clients to provide excess power during times of high energy need, leading to overall optimized system operation which can reduce costs to both organizations.

3.3 Topic Area 3: Microgrid Development

This topic area is intended to allow individual communities to complete detailed engineering design and investment plans for a new or major retrofit of an existing microgrid power system leading to lower costs, improved reliability or resilience, or improved power quality. Communities should have completed preliminary design or development assessments for the microgrid power system being considered but need additional resources to develop detailed development plans to support project financing and implementation. The Subcontractor is expected to conduct detailed engineering studies, perform needed resource assessments, develop financial models, and identify funding sources for potential project implementation.

The Subcontractor shall finalize a development plan and conduct the necessary data collection, system analysis, equipment investigation and selection, and initial project design. The Subcontractor is also expected to complete parallel system performance and financial plans, assessing the viability of the project on an ongoing basis.

The project results are expected to lead to detailed engineering and financial pro-forma for the development or major improvement of a microgrid energy system that would enable communities to obtain project funding through grants, loans or other funding source, leading to the implementation of the defined project.

An example of a project that fits into this topic area would be to conduct a detailed conceptual design of a proposed advanced microgrid incorporating advanced load control, energy storage, and new generation sources based on a previously completed general feasibility study.

3.4: Topic Area 4: Microgrid Transformation

This topic area is intended to allow individual communities to assess, design, and implement microgrid improvement efforts to operational microgrid systems. Communities would be expected to be operating a microgrid power system that has limited operability due to design or other constraints, where optimization, hardware innovation, or the implementation of new

operational concepts would lead to transformational improvements in system operation. The Subcontractor is expected to identify technical needs for improvement, providing required engineering, and then, within the bounds of the solicitation, implementation of identified improvements.

The Subcontractor will develop a detailed plan for assessing potential improvements identified in the proposal, complete that assessment, and preferably implement those upgrades. The project results are expected to lead to the identification, design, and implementation of improvements to existing microgrid power systems. This work is expected to lead to power system improvements that provide more reliable, resilient, and secure energy that reduces costs for the consumer. Projects should demonstrate potentially transformational improvements while providing insights for other communities that may not have considered such improvements.

An example of a project that fits into this topic area would be to assess the operational performance of an existing microgrid power system and then analyze the implementation of an improvement, such as upgrading system controls to implement active load control or upgrading a power converter to maximize the output from an energy storage device. Project funds would be used to cover design, programming, installation, and commissioning costs while the utility would purchase new controllers, software licenses and, if needed, updated server equipment.

3.5: Topic Area 5: Assessment of Microgrids for Industrial or Other Large Load Energy Consumers

This topic area is intended to allow individual industrial consumers with large loads or other large energy consumers to consider the use of advanced microgrid concepts, expanding energy availability while lowering costs. This effort would allow companies to conduct pre-feasibility assessments of advanced microgrid energy systems to lower costs while increasing reliability, resilience, or energy system security. The applying U.S. business would be operating, or expected to operate, a microgrid power system that has limited operability due to design or other constraints or developing or expanding a facility that is expected to use an isolated energy source. In all cases the projects should be located in areas with limited or no existing energy services where optimization, hardware innovation, or the implementation of new operational concepts would lead to transformational improvements in the operation of a new or planned microgrid based energy system. Industrial energy consumer refers to energy-intensive processing, production, distribution, or services, including but not limited to mining, manufacturing, and enterprise scale data centers located in rural and remote areas.

The Subcontractor shall finalize a pre-feasibility design by conducting the necessary data collection, system analysis, equipment investigation, initial conceptual project design and resulting financial assessment. The Subcontractor is also expected to complete parallel system performance and financial plans, assessing the viability of the project on an ongoing basis.

The outcome of the effort should inform or enable investment decisions toward the use of advanced microgrid power systems. The study should include the identification and incorporation of support mechanisms, such as active load control or the provision of thermal energy, that will unleash industrial development, powering local and national economic growth.

An example of a project that fits into this topic area would be a technical and economic assessment of an existing remote energy system, with consideration of dedicated energy services, for a new enterprise-scale data center. Scenarios in the assessment could include reliance on existing diesel engines, a significant upgrade to an existing distribution feeder, or an advanced microgrid power system with integrated load control to provide the facilities' energy needs. Results would provide information for the business to select a strategy to provide energy services to their new facility.

4. Tasks

The following tasks are designated by topical area:

4.1: Topic Area 1: Regional Microgrid Coordination

The Subcontractor shall identify and implement efforts across its collaborating communities that address operational challenges or development opportunities by most of these communities. The effort shall consist of five (5) key components including **communications and engagement** (Task 1), a regional **community needs identification** (Task 2), a **regional development plan** (Task 3), **results and next steps** (Task 4), and **quantification of the impacts** (Task 5). The table below provides an overview of the tasks associated with this work effort.

Task	**Primary Subcontractor Activities**
Task 1: Communications	Facilitate project collaboration and communication between NLR, DOE and other C-MAP partners.
Task 2: Regional Community Needs Identification	Identify, assess, quantify, and baseline community challenges or development approaches that may be relevant to multiple communities in the region with a focus on areas that can provide measurable improvements on energy affordability, availability, and reliability.
Task 3: Regional Development Plan	Develop a collaboration plan articulating how communities will work together to address the identified challenges.
Task 4: Results and Next Steps Report	Provide a report documenting the results of the collaboration efforts implemented and their level of success, highlighting changes that could be implemented by other communities facing similar challenges. Document should also articulate the next steps in implementing the defined efforts while identifying any remaining development or operational challenges that were not considered or became apparent through the project.
Task 5: Impact Report	Report on the impacts of efforts undertaken in reference to the baseline identified in Task 2, including observed benefits or improvements as well as lessons learned and findings that would be appropriate to other communities interested in implementing similar approaches.

4.1.1 Topic Area 1, Task 1: Communications:

The Subcontractor shall actively coordinate, provide information, and engage in scheduled communications with the NLR Technical Monitor throughout the period of performance. These efforts should include, but are not limited to the following efforts:

1. Provide a summary of the work effort, void of business-sensitive information, which provides an overview of the project and updates on project information and team members. NLR will provide a template for this document.
2. Information on the work effort suitable for inclusion in NLR and DOE news articles, to include high-resolution photos relevant to the effort for inclusion in NLR's photo database and for public dissemination and quotes from project leaders relating to the impact of the proposed effort.
3. Participation in monthly conference calls with the NLR team.
4. Quarterly project progress reports.
5. Potential host site visits for DOE and NLR to discuss the work effort.
6. Attendance at two C-MAP project coordination and collaboration meetings, bringing together members from all active C-MAP projects to share experiences and expertise (See Section 5).

4.1.2 Topic Area 1, Task 2: Regional Community Needs Identification

Following community dialogue, the Subcontractor shall develop and submit a report outlining the results of community dialogue on microgrid operations and development needs, articulating the operational challenges or development desires identified by the different communities. The effort should also provide a description of current practices that can be used as a baseline to measure the results of the work being undertaken by this project. This report will form the basis of the development plan to support microgrid management, operation, or development with the overall goal of reducing costs, improving reliability, resilience, or power quality, or power system operational efficiency for the identified microgrid systems. Based on dialogue with the Subcontractor, information from this report will be used by NLR to identify challenges or development opportunities that may be faced by other similar communities. C-MAP partners can provide support to communities in the facilitation of meetings, consolidation of challenges, or initial options screening to support technical development approaches.

4.1.3 Topic Area 1, Task 3: Regional Development Plan

Based on the challenges or development opportunities identification (Task 2), the Subcontractor will outline the actions to be undertaken to address identified challenges or assess the microgrid development opportunities. The report should be specific, providing a roadmap that can be implemented using program funds. The development plan should provide specific consideration of how any actions will be continued following the completion of this funded effort. Proposed activities do not need to cover all the challenges or opportunities identified through Task 2, just the ones that will be addressed through this effort. If possible, the plan should be developed in a way that could be adapted for use by other regional organizations or community collaboratives. If requested through the proposal, C-MAP partners can provide support in the framing of plans to address challenges or opportunities, including initial technology assessments or identifying potential workforce development opportunities.

4.1.4 Topic Area 1, Task 4: Results and Next Steps Report

The Subcontractor shall submit a report articulating progress in implementing the regional development plan and how it will further implement or solidify the concepts articulated in it. This report should also document the results of collaboration efforts, with a specific focus on the outcomes and lessons from the implementation of the development plan. The report should

articulate how the collaboration efforts were implemented, how they could be improved, and how the outcomes will be sustained over the long term. Based on dialogue with the Subcontractor, information from this report will be used to identify challenges that may be faced by other similar communities and help to offer pathways for solutions based on the experience gained through this effort.

4.1.5 Topic Area 1, Task 5: Impact Report

At the completion of the regional operations assistance work effort, the Subcontractor shall develop a summary impact report, highlighting the direct and indirect impacts of the efforts compared to the baseline developed for the community needs identification, Task 2. Qualitative and quantitative information documenting the impacts should be included. Lessons and observations that may be helpful to other communities interested in undertaking similar efforts should also be captured in this document.

4.2: Topic Area 2: Microgrid Integration with Large Load Energy Consumers

The Subcontractor shall identify and implement efforts that support collaboration opportunities between the community microgrid and local large energy consumers. The effort shall consist of six (6) key components including **communications and engagement** (Task 1), the **identification of power collaboration opportunities** (Task 2), **technical development plan** (Task 3), **introductory design** (Task 4), **financial assessment** (Task 5), and **microgrid development final report** (Task 6). The table below provides an overview of the tasks associated with this work effort.

Task	Primary Subcontractor Activities
Task 1: Communications	Facilitate project collaboration and communication between NLR, DOE and other C-MAP partners
Task 2: Power System Collaboration Identification	Identify collaboration opportunities between energy provider and large energy consumer(s).
Task 3: Technical Development Plan	Based on the potential collaboration opportunities (Task 2), develop a technical plan to further consider and finalize potential microgrid or technical collaboration opportunities.
Task 4: Introductory Design	Based on outcomes of the development plan outlined in Task 3, develop an introductory design for microgrid system upgrades or methods for expanded collaboration.
Task 5: Financial Assessment	Based on modeling and initial component specification, develop a cost and financial assessment of the proposed microgrid system upgrades or further collaboration approaches, allowing an assessment of financial needs for a successful development process.

Task 6: Development Report	Provide a final report highlighting the development effort, including any key findings and lessons learned that may be applicable to further C-MAP efforts or microgrid systems being developed by other communities.

4.2.1 Topic Area 2, Task 1: Communications:

The Subcontractor shall actively coordinate, provide information, and engage in scheduled communications with the NLR Technical Monitor throughout the period of performance. These efforts should include, but are not limited to the following efforts:

1. Provide a summary of the work effort, void of business-sensitive information, which provides an overview of the project, and updates on project information, and team members. NLR will provide a template for this document.
2. Information on the work effort suitable for inclusion in NLR and DOE news articles, to include high-resolution photos relevant to the effort for inclusion in NLR's photo database and for public dissemination and quotes from project leaders relating to the impact of the proposed effort.
3. Participation in monthly conference calls with the NLR team.
4. Quarterly project progress reports.
5. Potential host site visits for DOE and NLR to discuss the work effort.
6. Attendance at two C-MAP project coordination and collaboration meetings, bringing together members from all active C-MAP projects to share experiences and expertise (See Section 5).

4.2.2 Topic Area 2, Task 2: Power System Collaboration Identification

The Subcontractor shall undertake collaborative dialog with large, industrial-focused energy consumers to identify collaborative approaches to lower costs or improve power availability and quality for all consumers through advanced microgrid systems. Potential collaborative approaches considered should be broad in nature, covering technical, operation, or management efforts. Concepts such as active load control, time of day dispatching, energy source integration, or power system cross training should all be considered. The output of this task would be a report which identifies potential opportunities, with a focus on the opportunities that seem to demonstrate the most potential benefits. The effort should also provide a description of current practices that can be used as a baseline to measure the results of the work being undertaken by this project. Based on dialogue with the Subcontractor, information from this report will be used to identify opportunities that may be faced by other similar communities and industries.

4.2.3 Topic Area 2, Task 3: Technical Development Plan

Based on the collaboration opportunities identified in Task 2, Subcontractor shall provide a development plan for the specific opportunities to be assessed, including an outline of the actions to be undertaken. The plan should be specific, providing a roadmap that can be implemented to address the development opportunities that are likely to provide the most productive output. To the extent that it is relevant, the development plan should consider how any actions implemented will be maintained following completion of this funded effort. Activities do not need to cover all the opportunities identified through Task 2, just the ones that will be addressed through this effort.

4.2.4 Topic Area 2, Task 4: Introductory Design

Following the implementation of the development plan, the Subcontractor shall develop an introductory microgrid system design that will be the basis for further design and financial analysis. The design is not expected to be complete, but it should address all elements of the design specification, identify any shortcomings or additional analysis requirements, and be used for all further analysis.

4.2.5 Topic Area 2, Task 5: Financial Assessment

Based on modeling and initial component specification, the Subcontractor shall develop a cost and financial assessment of the proposed microgrid system, allowing an assessment of financial needs for a successful development process. The financial assessment should include all relevant costs to complete the project, including but not limited to estimates of additional engineering work, integration and controls costs, component hardware, and any civil works, as outlined in the introductory design. Beyond project costs, the financial assessment should also include expected project revenues and an assessment of needed capital funding sources to make the project viable. If possible, potential project funding mechanisms should be investigated, as this may identify specific financial considerations that should be incorporated into the final assessment. The final financial assessment may require modifications to the introductory design, performance assessment, or even the initial microgrid design specification to make the final project financially viable.

4.2.6 Topic Area 2, Task 6: Microgrid Development Final Report

As a final activity for this project, the Subcontractor shall document the development process, highlighting any obstacles encountered and lessons learned with a goal of providing insights into the overall C-MAP effort and other communities that are interested in developing similar projects. The report shall also articulate expected next steps that project participants will be following to implement the microgrid. The report should also provide an updated assessment of projected benefits, including but not limited to expected cost saving and improvements to reliability, resilience, and power quality. A summary of this report is expected to be made publicly available.

4.3 Topic Area 3: Microgrid Development

The Subcontractor shall perform the work, conduct the meetings, and satisfy the deliverables for the following topic areas. The effort shall consist of eight (8) key components including **communications and engagement** (Task 1), development of **microgrid requirements** (Task 2), **development plan** (Task 3), **conceptual design** (Task 4), **final design** (Task 5), **financial assessment** (Task 6), and **construction specification** (Task 7). A final **microgrid development final report** (Task 8) provides key recommendations, findings, and lessons that could be useful to other communities considering similar microgrid development. The table below provides an overview of the tasks associated with this work effort.

Task	Primary Subcontractor Activities
Task 1: Communications	Facilitate project collaboration and communication between NLR, DOE and other C-MAP partners

Task 2: Design Specification	Based on preliminary or preferability studies, develop a system specification providing a general overview of the planned power system; general requirements; technologies to be considered; and likely power system configuration, sizing, or civil infrastructure upgrades that will be needed.
Task 3: Development Plan	Based on the design specification, develop a plan to finalize any design specification, system, or resource analysis to be undertaken and the process to investigate specific vendors for the final project.
Task 4: Microgrid Design	Following assessments as outlined in Task 3, develop a microgrid system design that will be used for further analysis.
Task 5: Performance Assessment	Based on the microgrid design in Task 4, develop a detailed performance assessment of the proposed design. Analysis should assess operational and technical performance to support the development of both the financial assessment (Task 6) and construction specification (Task 7).
Task 6: Financial Assessment	Based on modeling and initial component specification, develop a cost and financial assessment of the proposed microgrid system, allowing an assessment of financial needs for a successful development process.
Task 7: Construction Specification	Based on all project analysis, develop a construction specification that could be used for the development of grant applications or construction quotes.
Task 8: Development Final Report	Provide a final report highlighting the development effort, including any key findings and lessons learned that may be applicable to further C-MAP efforts or microgrid systems being developed by other communities.

4.3.1 Topic Area 3, Task 1: Communications:

The Subcontractor shall actively coordinate, provide information, and engage in scheduled communications with the NLR Technical Monitor throughout the period of performance. These efforts should include, but are not limited to the following efforts:

1. Provide a summary of the work effort, void of business-sensitive information, which provides an overview of the project and, updates on project information, and team members. NLR will provide a template for this document.
2. Information on the work effort suitable for inclusion in NLR and DOE news articles, to include high-resolution photos relevant to the effort for inclusion in NLR's photo database and for public dissemination and quotes from project leaders relating to the impact of the proposed effort.
3. Participation in monthly conference calls with the NLR team.
4. Quarterly project progress reports.
5. Potential host site visits for DOE and NLR to discuss the work effort.

6. Attendance at two C-MAP project coordination and collaboration meetings, bringing together members from all active C-MAP projects to share experiences and expertise (See Section 5).

4.3.2 Topic Area 3, Task 2: Microgrid Design Specification

The Subcontractor shall complete a detailed technical design specification for the proposed microgrid power system based on any initial or pre-feasibility development and resource screening completed to date. The design specification shall provide a general overview of the expected system detail and all relevant design constraints, such as development locations, expected load requirements, or any other information that will be relevant to the design effort. The design specification should also include an overview of likely civil infrastructure upgrades that may be needed. The effort should also provide operational metrics for the current power system relative to cost, reliability, resilience, and power quality that can be used as a baseline to measure the expected improved performance of the proposed power system.

4.3.3 Topic Area 3, Task 3: Microgrid Development Plan

The Subcontractor shall develop a project design development plan, identifying all remaining questions or potential issues that must be considered or researched to allow for the development of an introductory design. The plan should describe all needed work to finalize the design specification, system or resource analysis to be undertaken, initial equipment specification, potential design tradeoff assessment, and any remaining system analysis. To the extent possible, the plan should outline the process that will be undertaken to address the remaining questions, which could include subcontracting to other parties. Following the development of the plan and review by NLR staff, the Subcontractor will implement the plan with the goal of addressing any remaining design and development unknowns in the microgrid system design process.

4.3.4 Topic Area 3, Task 4: Microgrid Design

Following the implementation of the development plan, the Subcontractor shall complete a conceptual microgrid system design that will be the basis for further design and financial analysis. The design is not expected to be final, but it should address all elements of the design specification, identify any shortcomings or additional analysis requirements, and be used for all further analysis. If previous work has already been undertaken to complete a conceptual design for the system in question, an update or expansion to that design would be appropriate.

4.3.5 Topic Area 3, Task 5: Microgrid Performance Assessment

Based on the specification and design, the Subcontractor shall complete a detailed performance assessment for the proposed microgrid power system. The analysis, using system performance models, should assess both operational and longer-term technical performance of the proposed power system, providing technical information needed for further project development. If needed, the performance assessment may require reconsideration of some system design aspects, which could be used to revise the design. The result of the task will be data that can be used for final electrical design and the development of the financial plans for the power system. The performance assessment may require modifications to the introductory design or even the initial microgrid design specification.

4.3.6 Topic Area 3, Task 6: Microgrid Financial Assessment

Based on modeling and initial component specification, the Subcontractor shall develop a cost and financial assessment of the proposed microgrid system, allowing an assessment of financial needs for a successful development process. The financial assessment should include all relevant costs to complete the project, including but not limited to estimates of additional engineering work, integration and controls costs, component hardware, and any civil works, as outlined in the introductory design. Beyond project costs, the financial assessment should also include expected project revenues and an assessment of needed capital funding sources to make the project viable. If possible, potential project funding mechanisms should be investigated, as this may identify specific financial considerations that should be incorporated into the final assessment. The final financial assessment may require modifications to the introductory design, performance assessment, or even the initial microgrid design specification to make the final project financially viable.

4.3.7 Topic Area 3, Task 7: Microgrid Construction Specification

Based on all project analysis and the potential resulting changes to the design, the Subcontractor shall develop a final construction specification for the desired microgrid power system, incorporating final information on the microgrid design, system specification, expected performance, and project financial prospectus. The report should also identify training or other efforts that will be needed to ensure sustainable operation of the proposed power system. The expectation is that this document, or elements of the document, could form the basis of grant or loan applications or be used to finalize construction and development quotes.

4.3.8 Topic Area 3, Task 8: Microgrid Development Final Report

As a final activity for this project, the Subcontractor shall document the development process, highlighting any obstacles encountered and lessons learned with a goal of providing insights into the overall C-MAP effort and other communities that are interested in developing similar projects. The report shall also articulate expected next steps that project participants will be following to implement the microgrid. The report should also provide an updated assessment of projected benefits, including but not limited to expected cost saving and improvements to reliability, resilience, and power quality. A summary of this report is expected to be made publicly available.

4.4: Topic Area 4: Microgrid Transformation

The Subcontractor shall perform the work, conduct the meetings, and satisfy the deliverables for the following topic areas. The effort shall consist of five (5) key components including **communications and engagement** (Task 1), **design improvement specification and assessment** (Task 2), **transformation design** (Task 3), and **transformation implementation** (Task 4). A final **microgrid transformation final report** (Task 5) provides key recommendations, findings, and lessons that could be useful to other communities considering similar microgrid improvements. NLR will implement a go/no-go decision on implementing the proposed transformation between Tasks 4.3 and 4.4. The table below provides an overview of the tasks associated with this work effort.

Task	Primary Subcontractor Activities
Task 1: Communications	Supports collaboration and communication regarding the project with NLR, DOE and other C-MAP partners
Task 2: Improvement Specification and Assessment Plan	Based on initial investigations, develop a simplified development specification and proposed assessment methodology, providing a general overview of the planned power system improvements, how these improve system cost or performance, and how these improvements are going to be further assessed.
Task 3: Transformation Design	Based on the assessments as outlined in Task 2, develop a proposed microgrid transformation design that will be the basis for all improvements to be implemented.
Go/No-Go Decision	NLR will work with the Subcontractor to facilitate a design review based on the transformation design (Task 3), leading to a go/no-go determination by NLR on whether the project has a basis for moving into implementation.
Task 4: Transformation Implementation	Based on the implementation of the transformation design specified in Task 3, implement proposed microgrid innovations to improve system performance.
Task 5: Transformation Final Report	Provide a final report highlighting the development effort, including key outcomes and lessons learned that may be applicable to microgrid systems improvements being considered by other communities.

4.4.1 Topic Area 4, Task 1: Communications:

The Subcontractor shall actively coordinate, provide information, and engage in scheduled communications with the NLR Technical Monitor throughout the period of performance. These efforts should include, but are not limited to the following efforts:

1. Provide a summary of the work effort, void of business-sensitive information, which provides an overview of the project, and updates on project information, and team members. NLR will provide a template for this document.
2. Information on the work effort suitable for inclusion in NLR and DOE news articles, to include high-resolution photos relevant to the effort for inclusion in NLR's photo database and for public dissemination and quotes from project leaders relating to the impact of the proposed effort.
3. Participation in monthly conference calls with the NLR team.
4. Quarterly project progress reports.
5. Potential host site visits for DOE and NLR to discuss the work effort.
6. Attendance at two C-MAP project coordination and collaboration meetings, bringing together members from all active C-MAP projects to share experiences and expertise (See Section 5).

4.4.2 Topic Area 4, Task 2: Improvement Specification and Assessment Plan

The Subcontractor shall develop a description of the transformational improvement being proposed with a technical work plan that will be implemented by the Subcontractor to finalize

the details required to implement the proposed microgrid improvement. The assessment shall provide a general overview of the relevant system details; the specific improvement being considered; and all relevant design constraints that will be assessed as part of the design process, such as equipment specifications, data, testing or assessment needs, civil infrastructure assessments, or the collection of any other information that will be relevant to the design effort. The effort should also provide operational metrics for the current power system relative to cost, reliability, resilience, and power quality that can be used as a baseline to measure the expected improved performance of the proposed power system. The resulting report will be used by the Subcontractor to complete an assessment or the proposed improvement and develop the final documentation needed to implement the identified improvement.

4.4.3 Topic Area 4, Task 3: Transformational Design

The Subcontractor shall develop a project design document detailing the transformational improvement that is being proposed for the community microgrid being improved. The plan should clearly outline all work needed to implement the improvement, including technical specifications of the designs, equipment lists, and technical specifications of all work that would need to be contracted to third parties. The plan should also describe any operation and maintenance needs associated with the improvement and how they will be implemented. Following the development of the plan it will be presented to NLR and other technical personnel, which will be the basis for a virtual design review. NLR staff will determine whether the proposed design is technically viable and ready for the next stage of development. **This will be a go/no-go decision which continuation of the project will be conditioned upon.** The intent of this evaluation is to ensure that the transformation is ready to be implemented. It is expected that technical problems and challenges will be identified that will be addressed. If the challenges appear to be solvable, and the concept is otherwise viable, the project can be approved for implementation.

If a go decision is made, the Subcontractor is expected to progress into project implementation.

If a no-go decision is made, NLR will provide recommendations on areas of increased technical investigation. The subcontract will be modified to drop Task 4, Transformation Implementation, but the Subcontractor will be allowed to complete Task 5, Transformation Final Report. The final report is seen as a means to allow the Subcontractor to capture outcomes, additional needed work, and areas of potential improvement to enable future project development through other means while providing a source of information to other communities interested in implementing similar improvements.

4.4.4 Topic Area 4, Task 4: Transformation Implementation

The Subcontractor shall implement the microgrid transformation design, as developed and specified in Task 3. As part of the implementation, the Subcontractor shall develop a set of final design documents, including as-built design drawings, operational manuals, and updated operational procedures, which will be collected as a project deliverable, documenting the improvement implemented.

4.4.5 Topic Area 4, Task 5: Transformation Final Report

At the completion of the project, the Subcontractor shall document the microgrid improvement undertaken, highlighting findings, obstacles encountered, and lessons learned, with a goal of providing insights to the overall C-MAP effort and other communities that are interested in developing similar projects. To the extent possible, the Subcontractor shall document the impacts of the improvement, providing direct and indirect impacts of the efforts on microgrid performance, operability, or functionality. If specific improvements were implemented, the final report shall provide an overview of new operations and maintenance provisions enacted to ensure long-term project sustainability. If specific improvements were not implemented, the report shall articulate expected next steps that project participants will be following to implement the identified changes. The report should also provide an updated assessment of projected benefits, including but not limited to expected cost saving and improvements to reliability, resilience, and power quality as compared to the baseline identified in Task 2. Qualitative and quantitative information should be included. A summary of this report is expected to be made available publicly.

4.5: Topic Area 5: Assessment of Microgrids for Industrial or Other Large Load Energy Consumers

The Subcontractor shall perform the work, conduct the meetings, and satisfy the deliverables for the following topic areas. The effort shall consist of five (5) key components including **communications and engagement** (Task 1), an **options assessment** (Task 2), **design specification** (Task 3), **pre-feasibility technical and financial assessment** (Task 4), and a final **microgrid feasibility report** (Task 5) provides key recommendations, findings, and lessons that could be useful to other communities considering similar microgrid development. The table below provides an overview of the tasks associated with this work effort.

Task	Primary Subcontractor Activities
Task 1: Communications	Supports collaboration and communication regarding the project with NLR, DOE and other C-MAP partners
Task 2: Options Assessment	Complete initial screening and data identification of potential energy system options to be considered. Assessment should include a review of all potential energy options available at the location in question using publicly or privately available data sources to identify potential development options.
Task 3: Design Specification	Based on options assessment (Task 2) develop a system specification providing a general overview of the planned power system; general requirements; technologies to be considered; and likely power system configuration, sizing, or civil infrastructure upgrades that will be needed.
Task 4: Pre-feasibility technical and financial assessment	Based on the design specification, develop a plan to finalize any design specification, system, or resource analysis to be undertaken and the process to investigate specific vendors for the final project.

Task 5: Development Final Report	Provide a final report highlighting the development effort, including any key findings and lessons learned that may be applicable to further C-MAP efforts or microgrid systems being developed by other communities.

4.5.1 Topic Area 5, Task 1: Communications:

The Subcontractor shall actively coordinate, provide information, and engage in scheduled communications with the NLR Technical Monitor throughout the period of performance. These efforts should include, but are not limited to the following efforts:

1. Provide a summary of the work effort, void of business-sensitive information, which provides an overview of the project, and updates on project information, and team members. NLR will provide a template for this document.
2. Information on the work effort suitable for inclusion in NLR and DOE news articles, to include high-resolution photos relevant to the effort for inclusion in NLR's photo database and for public dissemination and quotes from project leaders relating to the impact of the proposed effort.
3. Participation in monthly conference calls with the NLR team.
4. Quarterly project progress reports.
5. Potential host site visits for DOE and NLR to discuss the work effort.
6. Attendance at two C-MAP project coordination and collaboration meetings, bringing together members from all active C-MAP projects to share experiences and expertise (See Section 5).

4.5.2 Topic Area 5, Task 2: Options Assessment

The Subcontractor shall complete an assessment of available energy options for the general location in question, considering, but not limited to, local energy sources, local experience with energy technologies, available workforce and other considerations which will help determine which energy options would be applicable to the specific project or location. The assessment of options should be broad, considering all potential technology generation and control opportunities. The goal is to obtain a baseline of information that can then be used to down select to the final microgrid design based on costs, technology availability and corporate priorities. The options assessment should provide information for which further decisions should be based, not providing an indication of technical preference. C-MAP partners can support the effort by providing reference to technologies that have been used in similar locations or for similar purposes, identify technical or cost information, or provide links to organizations that have implemented similar technologies as a source of additional information.

4.5.3 Topic Area 5, Task 3: Design Specification

The Subcontractor shall complete a detailed technical design specification for the proposed microgrid power system based on any initial or known understanding of facility load assessment and resource screening completed to date. The design specification should provide a general overview of the expected system concepts and all relevant design constraints, such as development locations, expected load growth, operational life, constraints. or any other information that will be relevant to the design effort. The specification should also provide a review of defined project or corporate goals, though overall plans should incorporate consideration or cost, reliability, and energy resiliency to meet the energy needs of the consumer.

4.5.4 Topic Area 5, Task 4: Pre-feasibility Technical and Financial Assessment

The Subcontractor shall undertake a microgrid techno-economic pre-feasibility study based on the design specification for the industrial facility being considered. The study must also provide assessment of a baseline power system that would have been considered in the absence of this study. The study may consider several different microgrid concepts to provide choices but should identify a leading conceptual design based on the criteria and corporate goals identified within the design specification (Task 2). The leading design should be specified in enough detail to allow a financial assessment of its viability and with enough technical rigger to allow the development of a detailed engineering design if one is to be implemented. The assessment should also provide an overview of design inputs, including load, resources considered, costs, and other assessment factors or limitations. If applicable, the assessment should include discussions of corporate, community, and market benefits and impacts associated with the identified design which may highlight tradeoffs for specific identified solutions.

4.5.5 Topic Area 5, Task 5: Microgrid Development Final Report

As a final activity for this project, the Subcontractor shall document the assessment process, highlighting any obstacles encountered and lessons learned with a goal of providing insights into the overall C-MAP effort and other industries that are interested in developing similar projects. While not releasing any corporately sensitive information the report shall also provide an overview of the intended use of the microgrid, the technologies considered, an overview of the specific technology solution, and why this was selected. The report should also provide an assessment of projected benefits, including but not limited to expected cost saving and improvements to reliability, resilience, and power quality as compared to the baseline identified in Task 4. A summary of this report is expected to be made publicly available to allow other industries to consider similar development approaches.

5. REVIEW MEETINGS AND TRAVEL REQUIREMENTS

Virtual meetings shall be conducted over the course of the period of performance and shall be scheduled by the Subcontractor or the Technical Monitor on an as-needed basis and as mutually agreed upon.

The Subcontractor may include travel as needed to complete the work to be undertaken.

The Subcontractor should plan attendance at two (2) convenings of all C-MAP awardees for two (2) staff members to present project results and discuss collaboration efforts with other C-MAP awardees. For budget purposes, assume travel to Seattle, Washington for both trips for a minimum of four (4) days for each of these meetings. Meetings will likely be held in the fall of 2027 and 2028.

Outside of the contract, C-MAP is likely to host an event in association with the 2026 Rural Energy Conference in Fairbanks, Alaska in late October of 2026. Awardees will be encouraged to send a representative to this event with some costs covered by C-MAP.

6. DELIVERABLES

Specific deliverables are identified for each of the topic areas and align with the tasks outlined in section 3. Although finalized through the contracting process with selected Offerors, the deliverable schedule also determines contractual payments based on the work to be completed. The offeror should provide a recommended payment per deliverable commensurate with the work to complete that deliverable. The total value of all the deliverables should align with the Price/Cost Proposal Form submitted by the offeror.

6.1: Topic Area 1: Regional Microgrid Coordination

The Subcontractor shall provide the following deliverables as specified for each topic area. Use **Attachment 4 – Template Deliverable Schedule by Topic Area 2026** (Tab TA1-Regional Microgrid Coord) to organize a deliverable including all deliverables based on the proposed project work plan.

Deliverable No.	Associated Task(s) No.	Deliverable Description	Due Date
6.1.1	***4.1.1***	**Summary of Work Effort: The Subcontractor shall submit a summary of the work effort, void of business-sensitive information, as described in Task 4.1.1.**	**Due: One (1) month from date of subcontract execution**
6.1.2	***4.1.2***	**Regional Community Needs Identification: The Subcontractor shall develop and provide a report identifying and documenting microgrid operational and/or development challenges based on dialogue among relevant members of partner communities. The report should identify the desired results of the effort based on community consultation and should identify challenges that could be resolved through expanded multi-community collaboration, development barriers intended to be resolved, and, as appropriate, pathways that will be investigated to address identified challenges or development pathways, as defined in Task 4.1.2.**	**Due: Five (5) months after the subcontract execution.**
6.1.3	***4.1.3***	**Collaboration Plan: The Subcontractor shall provide a detailed plan in which identified challenges will be addressed and how, through this work, these efforts will be undertaken, as defined in Task 4.1.3. The plan shall also include a discussion of what consideration will be given to ensure the sustainability of the actions undertaken.**	**Due: Seven (7) months after the subcontract execution.**

Deliverable No.	Associated Task(s) No.	Deliverable Description	Due Date
6.1.4	***4.1.4***	**Results and Next Steps Report: The Subcontractor shall submit a report documenting the results of the collaboration efforts, including details on how successful specific collaboration strategies were most effective to improve intercommunity collaboration specifically to the operation of microgrid energy systems. The report should identify how sustainability of the efforts was considered, summarize further proposed work, and make recommendations that could be applied to other communities that may be addressing similar challenges, as defined in Task 4.1.4.**	**Due: Twenty-one (21) months from date of subcontract execution.**
6.1.5	**4.1.5**	**Impact Report: The Subcontractor shall submit a report outlining qualitative and, if possible, quantitative information on improvements investigated in the operation of the microgrid systems, with a focus on locations or communities where this improved operation was assisted by expanded multi-community collaboration. If different impacts were achieved in different communities, this should be described, including the causes of these differences. To the extent possible, the results should provide information to allow the evaluation of the project benefits and whether those benefits could likely be applied to other communities, as defined in Task 4.1.5.**	**Due: Twenty-four (24) months from date of subcontract execution.**
6.1.6 (a to g)	**All**	**Quarterly Reports (seven (7) in total, a through g): The Subcontractor shall provide quarterly reports, to include a description of work performed by the Subcontractor. The report shall describe the status, explain variances and problems, report on accomplishments, and summarize planned activities for the next quarter**	**Due: Quarterly from date of subcontract execution**

6.2: Topic Area 2: Microgrid Integration with Large Load Energy Consumers

The Subcontractor shall provide the following deliverables as specified for each topic area. Use **Attachment 4 – Template Deliverable Schedule by Topic Area 2026** (Tab

TA2 - Microgrid Integration) to organize a deliverable including all deliverables based on the proposed project work plan.

Deliverable No.	Associated Task(s) No.	Deliverable Description	Due Date
6.2.1	***4.2.1***	**Summary of Work Effort: The Subcontractor shall submit a summary of the work effort, void of business-sensitive information, as described in Task 4.2.1**	**Due: One (1) month from date of subcontract execution**
6.2.2	***4.2.2***	**Power System Collaboration Plan: The Subcontractor shall provide a collaboration plan which identifies all the potential collaboration efforts that have been identified between the utility and industry participants, and through this work, which of these efforts will be undertaken, as defined in Task 4.2.2. The plan shall also include a discussion of current practices that can be used as a baseline to assess the impacts of proposed actions being considered**	**Due: four (4) months after the subcontract execution**
6.2.3	***4.2.3***	**Technical Development Plan: The Subcontractor shall provide a detailed development plan, identifying system, control and operation opportunities that will be investigated through the project. The development plan shall provide an overview of the approach to be undertaken, decision points within the investigation, and an articulation of expected outcomes, as defined in Task 4.2.3. The plan shall also include discussion on what consideration will be given to ensure the sustainability of the actions undertaken.**	**Due: Six (6) months after the subcontract execution.**
6.2.4	***4.2.4***	**Microgrid Transformational Design: The Subcontractor shall submit a technical design for the identified improvement, providing all information needed to implement the improvement, including additional staff training and other operational needs, as defined in Task 4.2.4.**	**Due: Fourteen (14) months from date of subcontract execution.**

Deliverable No.	Associated Task(s) No.	Deliverable Description	Due Date
6.2.5	**4.2.5**	**Microgrid Financial Assessment: The Subcontractor shall provide a power system financial assessment in the form of a project prospectus, covering the energy system as defined in Task 4.2.4. The report shall provide an overview of project costs and expected revenues, and it should outline potential funding scenarios leading to successful development.**	**Due: Sixteen (16) months from date of subcontract execution.**
6.2.6	**4.2.6**	**Microgrid Development Final Report: The Subcontractor shall submit a letter report highlighting any obstacles that were encountered, and lessons learned during the microgrid development process. The report should also include expected next steps and an update of the exacted impacts of the proposed energy system integration as defined in Task 4.2.6.**	**Due: Eighteen (18) months from date of subcontract execution.**
6.2.7 (a to e)	**All**	**Quarterly Reports (five (5) in total, a through e): The Subcontractor shall provide quarterly reports, to include a description of work performed by the Subcontractor. The report shall describe the status, explain variances and problems, report on accomplishments, and summarize planned activities for the next quarter**	**Due: Quarterly from date of subcontract execution**

6.3 Topic Area 3: Microgrid Development

The Subcontractor shall provide the following deliverables as specified for each topic area . Use **Attachment 4 – Template Deliverable Schedule by Topic Area 2026** (tab TA3 - Microgrid Development) to organize a deliverable including all deliverables based on the proposed project work plan.

Deliverable No.	Associated Task(s) No.	Deliverable Description	Due Date
6.3.1	***4.3.1***	**Summary of Work Effort: The Subcontractor shall submit a summary of the work effort, void of business-sensitive information, as described in Task 4.3.1**	**Due: One (1) month from date of subcontract execution**
6.3.2	***4.3.2***	**Microgrid Design Specification: The Subcontractor shall submit the final design specification for the proposed**	**Due: Three (3) months from date of subcontract execution.**

Deliverable No.	Associated Task(s) No.	Deliverable Description	Due Date
		microgrid power system, as defined in Task 4.3.2	
6.3.3	*4.3.3*	Microgrid Development Plan: The Subcontractor shall submit a development plan for the project, providing an overview of remaining questions and how those questions will be addressed, as defined in Task 4.3.3	Due: Five (5) months from date of subcontract execution
6.3.4	*4.3.4*	Microgrid Design Report: The Subcontractor shall submit a conceptual design for the expected microgrid power system, as defined in Task 4.3.4.	Due: Nine (9) months from date of subcontract execution.
6.3.5	4.3.5	Microgrid Performance Assessment: The Subcontractor shall provide a power system performance assessment in the form of a report covering all topics defined in Task 4.3.5.	Due: Eleven (11) months from date of subcontract execution.
6.3.6	4.3.6	Microgrid Financial Assessment: The Subcontractor shall provide a power system financial assessment in the form of a project prospectus, covering all topics defined in Task 4.3.6. The report shall provide an overview of project costs and expected revenues, and it should outline potential funding scenarios leading to successful development.	Due: Thirteen (13) months from date of subcontract execution.
6.3.7	4.3.7	Microgrid Construction Specification: The Subcontractor shall provide a final project specification based on all preceding analysis and covering all topics defined in Task 4.3.7. The document will provide a basis for any future development documents for the project.	Due: Sixteen (16) months from date of subcontract execution.
6.3.8	4.3.8	Microgrid Development Final Report: The Subcontractor shall submit a letter report highlighting any obstacles that were encountered, and lessons learned during the microgrid development process. The report should also include expected next steps and an update of the exacted impacts of the proposed energy system integration as defined in Task 4.3.8.	Due: Eighteen (18) months from date of subcontract execution

Deliverable No.	Associated Task(s) No.	Deliverable Description	Due Date
6.3.9 (a to e)	**All**	**Quarterly Reports (five (5) in total, a through e): The Subcontractor shall provide quarterly reports, to include a description of work performed by the Subcontractor. The report shall describe the status, explain variances and problems, report on accomplishments, and explain progress expected in the next quarter.**	**Due: Quarterly from date of subcontract execution.**

6.4: Topic Area 4: Microgrid Transformation

The Subcontractor shall provide the following deliverables as specified for each topic area . Use **Attachment 4 – Template Deliverable Schedule by Topic Area 2026** (tab TA4 - Microgrid Transformation) to organize a deliverable including all deliverables based on the proposed project work plan.

Deliverable No.	Associated Task(s) No.	Deliverable Description	Due Date
6.4.1	***4.4.1***	**Summary of Work Effort: The Subcontractor shall submit a summary of the contracted effort, void of business sensitive information, as described in Task 4.4.1**	**Due: One (1) month from date of subcontract execution**
6.4.2	***4.4.2***	**Improvement Specification and Assessment Plan: The Subcontractor shall submit a specification of the proposed transformational improvement and a plan to develop a design for that improvement, as defined in Task 4.4.2. The plan described in this report, upon approval, will be implemented as part of Task 4.4.3**	**Due: Three (3) months from date of subcontract execution**
6.4.3	***4.4.3***	**Microgrid Transformational Design: The Subcontractor shall submit a technical design for the identified improvement, providing all information needed to implement the improvement, including additional staff training and other operational needs, as defined in Task 4.4.3. The Subcontractor shall also participate in a design review conducted by NLR of the transformation plan and provide additional information as needed to complete the review.**	**Due: Seven (7) months from date of subcontract execution**

Deliverable No.	Associated Task(s) No.	Deliverable Description	Due Date
6.4.4	***4.4.4***	**Microgrid Transformational Implementation: The Subcontractor shall submit a report articulating the work completed to transform the expected microgrid power system as defined in Task 4.4.4.**	**Due: Fifteen (15) months from date of subcontract execution**
6.4.5	**4.4.5**	**Microgrid Transformational Final Report: The Subcontractor shall provide a final report covering all topics as defined in Task 4.4.5, with a specific focus on learning that may be applicable to other community-based microgrid power systems.**	**Due: Eighteen (18) months from date of subcontract execution**
6.4.6 (a to e)	**All**	**Quarterly Reports (five (5) in total, a through e): The Subcontractor shall provide quarterly reports, to include a description of work performed by the Subcontractor. The report shall describe the status, explain variances and problems, report on accomplishments, and explain progress expected in the next quarter.**	**Due: Quarterly from date of subcontract execution.**

6.5: Topic Area 5: Assessment of Microgrids for Industrial or Other Large Load Energy Consumers

The Subcontractor shall provide the following deliverables as specified for each topic area . Use **Attachment 4 – Template Deliverable Schedule by Topic Area 2026** (tab TA5 - Asses. Indust. Microgrid) to organize a deliverable including all deliverables based on the proposed project work plan.

Deliverable No.	Associated Task(s) No.	Deliverable Description	Due Date
6.5.1	***4.5.1***	**Summary of Work Effort: The Subcontractor shall submit a summary of the contracted effort, void of business sensitive information, as described in Task 4.5.1.**	**Due: One (1) month from date of subcontract execution.**
6.5.2	***4.5.2***	**Options Assessment: The Subcontractor shall submit a report articulating the technical and development options to be considered as part of the microgrid design effort.**	**Due: Four (4) months from date of subcontract execution.**
6.5.3	***4.5.3***	**Microgrid Design Specification: The Subcontractor shall provide a final project specification based on all preceding analysis and covering all**	**Due: Six (6) months from date of subcontract execution.**

Deliverable No.	Associated Task(s) No.	Deliverable Description	Due Date
		topics defined in Task 4.5.2. The document will provide a basis for any future development documents for the project.	
6.5.4	*4.5.4*	Pre-feasibility Technical and Financial Assessment: The Subcontractor shall submit a Technical and Financial Pre-feasibility Assessment for the expected microgrid power system, as defined in Task 4.5.4 and based on information identified in Task 4.5.2 and 4.5.3. The report should include sufficient detail on the different microgrid system configuration considered and the final design selected. The report must also include information on the proposed baseline or industry standard practice and should include discussions of additional benefits and impacts that helped identify the final design relative to that baseline or standard practice.	Due: Ten (10) months from date of subcontract execution.
6.5.5	4.5.5	Microgrid Development Final Report: The Subcontractor shall submit a final project report highlighting any obstacles that were encountered, lessons learned during the microgrid development process, and other information that would be useful to other companies or organizations interested in implementing similar projects as defined in Task 4.5.5.	Due: Twelve (12) months from date of subcontract execution.
6.5.6	4.5.6	Quarterly Reports (three (3) in total, a through c): The Subcontractor shall provide quarterly reports, to include a description of work performed by the Subcontractor. The report shall describe the status, explain variances and problems, report on accomplishments, and explain progress expected in the next quarter.	Due: Quarterly from date of subcontract execution.

DELIVERABLE ADDRESS:

The Subcontractor shall clearly label all deliverables to include:

- The subcontractor's name
- NLR's subcontract number
- NLR Technical Monitor's name
- Deliverable date, and
- Deliverable description.

Electronic deliverables shall be sent via email to the Technical Monitor as follows:
TBD, Technical Monitor
e-mail: TBD@nlr.gov

- One (1) master electronic version, including graphics

DELIVERY OF DATA

A copy of all data (as that term is defined in this Subcontract) first produced in the performance of this Subcontract is an additional deliverable of this Subcontract and shall be provided to the technical monitor as a condition of final payment, in accordance with the Subcontract. **For all deliverables, make particular note of the requirements provided in the Rights in Data clause of this Subcontract regarding data not first produced in the performance of this Subcontract.**

7. ELECTRONIC REPORTING REQUIREMENTS FOR SUBCONTRACT REPORT DELIVERABLES

It is NLR's intention to publish subcontract report deliverables containing publicly available information (e.g. non-confidential, non-protected, non-proprietary information) for distribution on the internet.

The subcontractor shall provide the final approved version of report deliverables in accordance with the electronic reporting requirements described below.

The technical monitor may specifically direct the subcontractor to provide reports in one or more of the file format standards provided below:

7.1. The subcontractor shall submit all report deliverables (including status, annual, or final reports) as electronic files in Adobe .pdf format, preferably with all graphics and images embedded within the document.

7.2. All final approved version submissions shall be delivered to NLR via e-mail to the NLR Technical Monitor.

7.3. If it is not possible to include all of the graphics and images (figures, illustrations, and photographs) in the same file as the text, NLR will accept the text in Adobe .pdf formats and the graphics and images as separate electronic graphic or image files*.

7.4. The accepted standard for page layout and graphics is the Adobe Creative Suite of programs.

7.5. *The acceptable graphic or image file formats are: .eps, .tif, .gif, .jpg, .wmf, .emf, .pct, .png, .bmp, .psd, .ai, .fh, .qif, .fpx, cdr. The preferred resolution for graphics or images is 300 dpi. Include all fonts used in creating the file.

7.6. For animation, video, or multi-media elements, CD-ROM, DVR and thumb drive are acceptable technical deliverable media.

7.7. For all calculations in support of subcontract reports that are conducted in ASPEN+, an electronic copy of INPUT, REPORT and BACKUP (if Model Manager is used) must be submitted with all reports. Additionally, if costing or sizing calculations are conducted in a spreadsheet [no process calculations (heat and material balances) in spreadsheet format are permitted], a copy of the fully documented MS Excel file shall be supplied.

7.8. A fully executed model release shall be supplied to NLR with all photographs and images, regardless of whether such photographs or images are delivered to NLR electronically or in hard copy. Such model release shall certify that the Alliance for Energy Innovation, LLC, Management and Operating Contractor for the National Laboratory of the Rockies for the U.S. Department of Energy is granted a non-exclusive, paid-up, irrevocable, worldwide license to publish such photographs in any medium or reproduce such photographs or allow others to do so for United States Government purposes. Model releases are required in all situations in which a reasonable person would respond in the affirmative to the question – could someone, other than the model himself/herself, recognize the person in this photograph or image? All model releases shall be provided to the subcontract associate as a condition of final payment, in accordance with the subcontract. To obtain a Subcontractor Model Release form, please contact images@NLR.gov/

8. ACKNOWLEDGEMENTS IN SUBCONTRACTOR PUBLICATIONS

In any scientific or technical report or article, conference paper, journal article, etc. based on or containing data first produced in the performance of this subcontract and published in academic, technical or professional journals, symposia proceedings or similar works, the subcontractor shall use this acknowledgement stating, "This [article, conference paper, journal article, etc.] was developed based upon funding from the National Laboratory of the Rockies for the U.S. Department of Energy under Contract No. DE-AC36-08GO28308."

9. COPYRIGHT PERMISSION/AUTHORIZATIONS

The subcontractor is responsible for obtaining copyright permissions and/or authorizations for all information and/or data, as applicable that is incorporated into all final technical reports. Electronic copies of these copyright permissions and/or authorizations shall be provided to the at the email address provided below. The subcontractor shall also provide a written certification to the Technical Monitor as to such permissions and/or authorizations as a condition of final payment. The subcontractor's (including all lower tier subcontractors, as applicable) certification shall specify that "I have obtained all necessary and legally required copyright permissions and/or authorizations for any and all information, data, graphs, images, etc., as applicable, that is incorporated into the final Technical Report titled _____, delivered under this Subcontract No._____. Copies of these permissions and/or authorizations are attached."