



NOTICE OF THE REGULAR MEETING OF THE GENERAL ASSEMBLY

TOWN OF OPHIR, CO 81426

TUESDAY 7:00 PM FEBRUARY 18, 2025

OPHIR TOWN HALL 36 PORPHYRY ST.

[Join Zoom Meeting](#)

Meeting ID: 867 0143 8435 Passcode: 373146

+16699006833,,86701438435#,,,,*373146# US (San Jose)

AGENDA

1. CALL TO ORDER
2. ADOPTION & SIGNATURE OF JANUARY 21, 2025 MEETING MINUTES
3. APPROVAL OF AGENDA
4. BUSINESS ITEMS
 - a. Executive Session for a conference with the Town Attorney for the purpose of receiving legal advice on specific legal questions under CRS 24-6-402(4)(b), specifically regarding Town avalanche regulations and related threat of litigation (60 minutes- Town Attorney McConaughy)
 - a. Approval of Amended Ferric Oxide Conservation Easement document – 5 minutes (McConaughy)
 - b. New Dominion Mine Site Cleanup MOU – 5 minutes (McConaughy)
 - c. Approval of Letter of Engagement from Blair & Associates regarding 2024 Annual Audit Exemption – 5 minutes (Wyszynski)
 - d. Final Report- Microgrid for Community Resilience Feasibility Study – 30 minutes (Wheels, SMPA)
5. STAFF REPORTS
 - a. Town Manager
 - b. Staff
6. NEW BUSINESS
7. ADJOURN

****DRAFT**MINUTES OF THE REGULAR MEETING OF THE
GENERAL ASSEMBLY
TOWN OF OPHIR, CO 81426
TUESDAY JANUARY 21ST, 2025 7:00 PM**

Voting Members: John Gerona, Janice Gerona, Daniel Forgrave, Jerry Oyama, Allyn Hart, Mark Rosenthal, Slator Aplin, Eric Beerman, Phil Hayden, Gunnar Doyle, Joe Schults, Teri Steinberg, Leigh Hayden, Kim Wheels, Lucas Leighton, Shoshanna Pollack, Natalie Fijalkowski, Tyler Schultz, Marc Campbell, Anabelle O'Neill, Jonathan Cooper, Andy Ward, Ben Foster

Non-Voting: John Wontrobski, Cindy Wyszynski

1. CALL TO ORDER

Andy Ward calls the meeting to order at 7:04pm

2. ADOPTION & SIGNATURE- December 17, 2024 Regular GA minutes

Mark Rosenthal motions, Gunnar seconds.

Approved via unanimous vote.

3. APPROVAL OF AGENDA

Gunnar motions, Teri seconds.

Approved via unanimous vote.

4. BUSINESS ITEMS

a. Elections: Town Staff and P&Z members (*=incumbent)

i. Town Elected Officials/Staff

1. Mayor- Andy Ward*

2. Clerk- Ben Foster*

3. Treasurer- Cindy Wyszynski*

Town staff were voted on as a group. Jerry motions, Eric seconds. Vote passed via unanimous approval.

ii. P&Z Members

1. Phil Hayden*
2. Dan Forgrave*

Commission members were voted on as a group. Gunnar motions, Jerry seconds. Vote passed via unanimous approval.

5. STAFF REPORTS

a. Town Manager

The company that designed and built Ophir's water system hired a new maintenance person, and they will make quarterly visits to inspect our system.

b. Mayor

Andy discussed wildfire risk with Tyler Schultz, who will be looking into setbacks and other related issues this spring. Phil asks about evacuation drilling. John W. and Andy have discussed and will meet with county fire department about scheduling. Joe notes that the building code could be updated for more fireproof materials to be used in construction.

c. Clerk

Town email list signup is now on the Ophir website home page. Working on community wide communication via text message next.

d. OEC – No update

e. P&Z

i. P&Z Public Hearing- Feb 12, 2025 at 6 pm- Proposed Ordinance to Allow development in Moderate Avalanche Zone

February GA will be the best time to discuss this issue.

Mark Campbell requests that the current avalanche map be emailed to residents. Johnny Gerona requested that the lots impacted by zoning change be highlighted on the map. Phil asks who is initiating the ordinance. John W. responds that it is under the direction of the GA. Phil asks why P&Z is having an executive session at their next meeting. John W. responds that it is to understand the ramifications of adoption

of the proposed ordinance and how it would affect the threat of lawsuit.

6. NEW BUSINESS

None!

7. ADJOURN

Andy motions to adjourn @ 7:39pm

Minutes prepared by Ben Foster, Town Clerk

Audio and video recordings of all General Assembly Meetings are available to the public. Please contact the Town Clerk if you would like a copy of this month's audio of the meeting minutes.

TOWN OF OPHIR, COLORADO

ORDINANCE NO. _____ - ____

AN ORDINANCE AUTHORIZING RESIDENTIAL CONSTRUCTION AND IMPROVEMENT IN MODERATE AVALANCHE HAZARD ZONES WHEN HAZARD MITIGATION PROCEDURES ARE FOLLOWED.

WHEREAS, the Town of Ophir, Colorado (“Town”), is a home-rule town and political subdivision of the State of Colorado, duly organized and operating under the Constitution and laws of the state and the Ophir Town Charter; and

WHEREAS, many tracts of land within Town boundaries are exposed to moderate to high avalanche risk; and

WHEREAS, the Town desires to permit residential construction and modification in Moderate Avalanche Hazard Zones, as defined by the Hazards Overlap Map, when engineering reports indicate that it is safe to do so given the proposed building design; and

WHEREAS, the Town desires to adopt the following ordinance to permit construction in Moderate Avalanche Hazard Zones under appropriate circumstances and subject to the requirements set forth below.

NOW, THEREFORE, BE IT ORDAINED BY THE GENERAL ASSEMBLY OF THE TOWN OF OPHIR, COLORADO:

Section 1. Recitals. The Recitals set forth above are incorporated herein as findings and declarations of the General Assembly.

Section 2. Modification. The modification of Article VIII, §801 in the Town’s land use code shall read as follows:

§801 **INTENTION AND PURPOSE.** The Avalanche Hazard Zone is intended to define areas where avalanche hazard threatens the health, safety and welfare of persons and property, and to restrict development in those areas other than (a) the replacement, relocation, renovation or expansion of existing grand-fathered single family dwellings and accessory buildings in accordance with standards and procedures of the provisions of §307.2 and §803; ~~and~~ (b) the replacement, renovation or expansion of the old jail building located on Lots 9 and 10, Block T₂; and (c) residential construction and modification in accordance with the provisions of §803.5(A) to (E). The Avalanche Hazard Zone boundaries are established on the official Hazards Overlay Map of the Town of Ophir.

Section 3. Modification. The modification of Article VIII, §803.2 in the Town’s land use code shall read as follows:

§803.2 No structures or accessory buildings, other than replacement, relocation, renovation or expansion of a grandfathered single-family dwelling or accessory building, or the old jail building located on Lots 9 and 10, Block T, as may be approved pursuant to a Variance or the Special Use Permit process in accordance with the standards and requirements of §803, shall be permitted in the zone designated on the Hazards Overlay Map as High ~~or Moderate~~ Avalanche Hazard;

Section 4. Addition. The addition of Article VIII, §803.5 to the Town's land use code shall read as follows:

§803.5 Notwithstanding any other provisions of this code, residential construction and improvement shall be allowed in Moderate Avalanche Hazard Zones, as depicted by the Hazards Overlay Map, subject to hazard mitigation procedures. Prior to the issuance of a building permit, the applicant must provide to the Town:

- A. A written report analyzing the potential avalanche hazards and the potential physical forces created thereby upon the proposed improvement or structure. Said report shall be prepared and signed by a qualified avalanche expert, based on such expert's education and experience in avalanche hazard mitigation. Said report shall also be recorded in the real estate records of San Miguel County with a reference to the subject property.
- B. A structural analysis of the proposed building prepared and signed by a state licensed structural engineer reflecting an engineering analysis and design that takes into account the potential force from an avalanche as set forth in the avalanche report referred to in subsection A of this section.
- C. A complete release and indemnification agreement releasing the Town, as required by §803.1.
- D. No building permit shall be issued to any applicant unless the state licensed structural engineer submitting the written report analyzing the potential avalanche dangers required in this section certifies, in writing, that the proposed building design and construction or proposed structural modification of an existing structure, will protect human life throughout the dwelling unit, building or structure from the anticipated one hundred (100) year avalanche forces for the location of the proposed dwelling unit, building or structure or proposed addition or modification thereto. ~~The written report shall certify that the proposed building design or modification will not negatively impact another structure, property or any public right of way as part of the mitigation plan.~~

E. The Town may require, at its discretion, a bond, letter of credit or other guarantee to ensure that the requirements of this section are complied with and the construction of any approved buildings or structures will be completed in strict accordance with the approved plans and specifications.

Section 5. Addition. The addition of Article VIII, §803.6 to the Town’s land use code shall read as follows:

§ 803.6 Each and every real estate agent, salesperson and broker, and each and every private party owning property within the Avalanche Hazard Zone shall provide prospective purchasers, lessees, or tenants with written notice that said real property is located within the Avalanche Hazard Zone prior to or in conjunction with viewing said property. The written notice must state that §803.5 avalanche studies are available for public inspection at the office of the Town Clerk and that the studies should be reviewed prior to any party entering into any agreement, contract, or lease concerning said property.

Section 6. Addition. The addition of Article VIII, §805 to the Town’s land use code shall read as follows:

§805 **PROPORTIONAL PARCEL RESTRICTION.** When the Avalanche Hazard Zone covers only part of a parcel, only the portion within the Avalanche Hazard Zone is subject to Article VIII development restrictions.

Section 7. Publication. After final adoption, a public notice shall be published which notice shall contain the number and title of this ordinance, a brief description of the ordinance, its effective date and notice that all copies are available for inspection at the Town Hall office.

Section 8. Severability, Conflicting Ordinances Repealed. If any section, subsection or clause of this Ordinance shall be deemed to be unconstitutional or otherwise invalid, the validity of the remaining sections, subsections and clauses shall not be affected thereby. All other ordinances or parts of ordinances in conflict with the provisions of this Ordinance are hereby repealed.

Introduced, Read, and Referred to Public Hearing on First Reading by the General Assembly of the Town of Ophir on the ____ day of _____, 2025.

Approved and Adopted on Second and Final Reading as Amended by the General Assembly of the Town of Ophir on the ____ day of _____, 2025.

By: _____
Andy Ward, Mayor

Attest: _____
Ben Foster, Town Clerk

Approved as to Form: Town Attorney

Glenwood Springs Office
910 Grand Avenue, Suite 201
Glenwood Springs, Colorado 81601
Telephone (970) 947-1936
Facsimile (970) 947-1937

GARFIELD & HECHT, P.C.
ATTORNEYS AT LAW
Since 1975

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ACTION ITEM MEMORANDUM

TO: Town of Ophir
FROM: Garfield & Hecht, P.C.
RE: MOU and Conservation Easement Amendment
DATE: February 14, 2025

This memorandum explains the MOU and Conservation Easement Amendment action items.

Background

In 2005, Ophir received state funding to purchase land to hold as open space with the stipulation that Ophir grant a conservation easement. This easement was granted to the San Miguel Conservation Foundation (“SMCF”) in 2008. During the purchase process, the United States Forestry Service (“USFS”)¹ alerted Ophir to the presence of two mill tailing sites: the Carbonero Mill Mine Site (“Carbonero Site”) and Old Dominion Mine Site (“Old Dominion Site”). Approximately 17% of the Old Dominion Site sits on Town owned land. The Conservation Easement (“CE”) focused primarily on the Carbonero Site, which was transferred to the USFS in 2008. The Old Dominion Site contains metals, including iron, manganese, and zinc, that are carried down into beaver ponds by rainfall and snowmelt. The USFS now desires to address the Old Dominion Site by diverting rain and snowfall to prevent the metals from being swept away. The MOU coordinates responsibilities between the USFS and Ophir, and the CE amendment allows access to the Ophir portion of the site.

MOU

The MOU sets the terms of the agreement between the USFS and Ophir. The USFS plans to install surface water controls to prevent metals from being washed into beaver ponds and the surrounding environment. Ophir’s obligations under the MOU include advising the USFS of any Town concerns or interests, coordinating legal issues with the USFS, and amending the CE. The USFS’s obligations include acting as lead agency responsible for actions at the site, coordinating response actions, giving Ophir notice of and an opportunity to participate in scheduled meetings, creating and revising a schedule of activities for the site, providing relevant documents to Ophir,

¹ The United States Department of Agriculture, acting through the United States Forestry Service. Referred to as “USFS” here for clarity.

coordinating legal issues with Ophir, and coordinating major decision points for actions that will be on or affect Ophir property. This MOU is non-binding.

First Amendment to Conservation Easement

The CE amendment modifies the original CE to allow remediation of the Old Dominion Mine Site. Key terms include requiring Ophir to inform SMCF of pending amendments to the Conceptual Plan at least 60 days before physical action, Ophir giving SMCF quarterly updates about general remediation efforts and monthly updates about on-the-ground remediation, and a retainer of governmental immunity.

Action Steps

To execute these documents, the General Assembly shall direct the Mayor and/or Town Manager to provide their signature for the MOU and to provide their notarized signature for the CE Amendment.

Proposed motion: **I MOVE TO APPROVE THE MEMORANDUM OF AGREEMENT WITH THE U.S. FOREST SERVICE AND THE CONSERVATION EASEMENT AMENDMENT WITH THE SAN MIGUEL CONSERVATION FOUNDATION AND AUTHORIZE THE MAYOR AND/OR TOWN MANAGER TO SIGN THE NECESSARY DOCUMENTS.**



February 11, 2025

To the General Assembly and Management
Town of Ophir, Colorado
36 Porphyry Street
Ophir, Colorado 81426

We are pleased to confirm our acceptance and understanding of the services we are to provide for The Town of Ophir, Colorado for the year ended December 31, 2024.

You have requested that we perform a compilation engagement with respect to the financial statements of The Town of Ophir, Colorado, which comprise the balance sheet and the operating statement revenue and expenditures, and other information statements included in the State of Colorado Application for Exemption from Audit for the year ended December 31, 2024.

Our Responsibilities

The objective of our engagement is to prepare the Application from Exemption from Audit in accordance with accounting principals general accepted in the United States of America based on information provided by you. We will conduct our compilation engagement in accordance with the Statements on Standards for Accounting and Review Services (SSARS) promulgated by the Accounting and Review Services Committee of the AICPA and comply with applicable professional standards, including the AICPA's *Code of Professional Conduct*, and its ethical principles of integrity, objectivity, professional competence, and due care.

We are not required to, and will not, verify the accuracy or completeness of the information you will provide to us for the engagement or otherwise gather evidence for the purpose of expressing an opinion or a conclusion. Accordingly, we will not express an opinion, a conclusion, nor provide any assurance on the financial statements.

Our engagement cannot be relied upon to identify or disclose any financial statement misstatements, including those caused by fraud or error, or to identify or disclose any wrongdoing within the Company or noncompliance with laws and regulations.

We, in our sole professional judgment, reserve the right to refuse to perform any procedure or take any action that could be construed as assuming management responsibilities since performing those procedures or taking such action would impair our independence.

Your Responsibilities

The engagement to be performed is conducted on the basis that you acknowledge and understand that our role is to assist you in the presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America. Management has the following overall responsibilities that are fundamental to our undertaking the engagement in accordance with SSARS:

- 1) The selection of accounting principles generally accepted in the United States of America as the financial reporting framework to be applied in the preparation of the financial statements.
- 2) The preparation and fair presentation of financial statements in accordance with accounting principles generally accepted in the United States of America and the inclusion of all informative disclosures that are appropriate for accounting principles generally accepted in the United States of America.
- 3) The design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the financial statements that are free from material misstatement, whether due to fraud or error.
- 4) The prevention and detection of fraud.
- 5) To ensure that the Company complies with the laws and regulations applicable to its activities.
- 6) The accuracy and completeness of the records, documents, explanations, and other information, including significant judgments, you provide to us for the engagement.

Certified Public Accountants

7) To provide us with—

- access to all information of which you are aware is relevant to the preparation and fair presentation of the financial statements, such as records, documentation, and other matters.
- additional information that we may request from you for the purpose of the compilation engagement.
- unrestricted access to persons within the Company of whom we determine it necessary to make inquiries.

You are also responsible for all management decisions and responsibilities and for designating an individual with suitable skill, knowledge, and experience to oversee the preparation of your financial statements. You are responsible for evaluating the adequacy and results of the services performed and accepting responsibility for such services.

Our Report

As part of our engagement, we will issue a report that will state that we did not audit or review the financial statements and that, accordingly, we do not express an opinion, a conclusion, nor provide any assurance on them. There may be circumstances in which the report differs from the expected form and content. If, for any reason, we are unable to complete the compilation of your financial statements, we will not issue a report on such statements as a result of this engagement.

You agree to include our accountant's compilation report in any document containing financial statements that indicates that we have performed a compilation engagement on such financial statements and, prior to the inclusion of the report, to obtain our permission to do so.

Other Relevant Information

Brian Blair is the engagement partner and is responsible for supervising the engagement and signing the report or authorizing another individual to sign it.

We estimate that our fees for these compilation services will be between \$1,200 and \$1,500. The fee estimate is based on anticipated cooperation from your personnel and the assumption that unexpected circumstances will not be encountered during the work performed. If significant additional time is necessary, we will discuss it with you and arrive at a new fee estimate before we incur the additional costs. Our invoices for these fees will be rendered each month as work progresses and are payable on presentation.

You agree to hold us harmless and to release, indemnify, and defend us from any liability or costs, including attorney's fees, resulting from management's knowing misrepresentations to us.

We appreciate the opportunity to be of service to you and believe this letter accurately summarizes the significant terms of our engagement. If you have any questions, please let us know. If you acknowledge and agree with the terms of our engagement as described in this letter, please sign the enclosed copy and return it to us.

Blair and Associates, P.C.

This letter correctly sets forth the understanding of The Town of Ophir, Colorado.

Signature: _____

Title: _____

Date: _____

Ophir Microgrid for Community Resilience Final Feasibility Study

1. Microgrid for Community Resilience Introduction

The Microgrids for Community Resilience (MCR) grant program (as created by House Bill 22-1013) is designed to build community resilience regarding electric grid disruptions through the development of microgrids.

A microgrid is defined as a group of interconnected electric loads and distributed energy resources with clearly defined electrical boundaries that can function as a single, controllable entity with respect to the electric grid. Therefore, a microgrid can be connected to or disconnected from the electric grid to enable it to operate either in “grid-connected mode” or in “island mode.”

2. DOLA MCR Planning Grant Award

San Miguel Power Association (SMPA) applied for and was awarded a MCR Planning Grant in June 2023 to explore the feasibility of a microgrid for resiliency in the town of Ophir, Colorado.

MCRG
CTGG1 NLAA 202300004110

STATE OF COLORADO GRANT AGREEMENT SUMMARY OF GRANT AGREEMENT TERMS AND CONDITIONS

State Agency Department of Local Affairs (DOLA)	DLG Portal Number MCRG-P23009	CMS Number 184783
Grantee San Miguel Power Association, Inc.	Grant Award Amount \$29,550.00	Retainage Amount \$1,477.00
Project Number and Name MCRG P23009 - Ophir Microgrid for Community Resilience	Performance Start Date The later of the Effective Date or June 29, 2023	Grant Expiration Date June 30, 2024
Project Description The Project consists of completing a Feasibility Study for construction of backup microgrids and energy storage for San Miguel Power Association’s customers in and around the Town of Ophir.	Program Name Microgrids for Community Resilience Grant Program (MCR)	
	Funding Source STATE FUNDS	
	Catalog of Federal Domestic Assistance (CFDA) Number N/A	
DOLA Program Manager Julia Masters, (303) 349-1616, (julia.masters@state.co.us) Program Assistant Lindsey Sawyer, (720) 557-3797, (lindsey.sawyer@state.co.us)	VCUST# 12863	Address Code CN001 WARR

3. Scope of Work

The following text for sections 3-5 of this Feasibility Study are taken directly from the MCR Planning Grant Awarded to SMPA.

2. DESCRIPTION OF THE PROJECT(S) AND WORK

- 2.1. **Project Description.** The Project consists of completing a Feasibility Study for construction of backup microgrids and energy storage for San Miguel Power Association's customers in and around the Town of Ophir.
- 2.2. **Work Description.** The San Miguel Power Association, Inc. (Grantee) will hire a qualified firm to complete a Feasibility Study for constructing backup microgrid and energy storage for the Grantee's radial feeder line that serves the Town of Ophir and other Grantee customers located in the vicinity, outside of the Town boundaries. Work includes site location evaluations, identification of permit requirements and land lease agreements, conducting third party geotechnical and hydrology studies, and estimating utility interconnection costs. Work includes development of engineering designs sufficient to draft a Request for Proposals (RFP) that includes array size and mounting type, battery storage size and type, microgrid controls and balance of systems hardware, generating budgetary system and installation costs. Work includes development of a high-level pro forma that describes microgrid system costing, estimated lifetime maintenance and replacement costs, and revenue streams for the energy delivered and peak demand savings. The Study will include a draft Request for Proposals (RFP) and a high-level pro forma. Grantee will own the resulting documents. Grantee shall provide the Department of Local Affairs (DOLA) quarterly Status Reports that describe Project progress, delays or roadblocks, Project funding spent by funding source, and the projected timeline for full expenditure of Grant Funds. Grantee will own the resulting documents.

4. Deliverables

4. DELIVERABLES

- 4.1. **Outcome.** The final outcome of this Grant is a completed Feasibility Study, including a draft RFP and high level pro forma, for construction of a backup microgrid and battery storage for Ophir and other Grantee customers located in the vicinity served by the same radial distribution line.
- 4.2. **Service Area.** The performance of the Work described within this Grant shall be located in Ophir, Colorado.
- 4.3. **Performance Measures.** Grantee shall comply with the following performance measures:

<u>Milestone/Performance Measure/Grantee will:</u>	<u>By:</u>
Provide DOLA with electronic copy of the draft Feasibility Study including final site location evaluations.	December 1, 2023
Provide DOLA with electronic copy of the draft Feasibility Study budgets including all estimated operating and land lease costs.	December 31, 2023
Provide DOLA with electronic copy of the draft Feasibility Study high-level pro forma and draft RFP.	March 31, 2024
Provide DOLA with electronic copy of final Feasibility Study accepted by Grantee.	Prior to Project closeout.
Submit Quarterly Pay Requests	See §4.5.2 below
Submit Quarterly Status Reports	See §4.5.2 below
Submit Project Final Report	September 28, 2024

5. Reporting Milestones

4.5.2. Specific submittal dates.

Quarter	Year	Due Date	Pay Request Due	Status Report Due
3 rd (Jul-Sep)	2023	October 30, 2023	Yes	Yes
4 th (Oct-Dec)	2023	January 30, 2024	Yes	Yes
1 st (Jan-Mar)	2024	April 30, 2024	Yes	Yes
2 nd (Apr-Jun)	2024	JULY 15, 2024*	Yes	Yes

*State fiscal year runs July 1 – June 30 annually. Grantee must request reimbursement for all eligible costs incurred during a State fiscal year by July 15 annually.

Based on circumstances discussed in the Quarterly Progress reports and listed in this report that caused delay in meeting the milestone schedule and final reporting due by the end of Q2 2024, SMPA requested an extension of time to refocus the work. SMPA was granted extension through the Option Letter #1 shown below.

MCRG P23009 - Ophir Microgrid for Community Resilience

MCRG
CTGG1 NLAA 202300004110

OPTION LETTER #1

SIGNATURE AND COVER PAGE

State Agency Department of Local Affairs (DOLA)	DLG Portal Number MCRG-P23009	Option Letter CMS Number 191734
Grantee San Miguel Power Association, Inc.	Previous CMS #(s) 184783	
Project Number and Name MCRG P23009 - Ophir Microgrid for Community Resilience	Grant Amount Initial Award: \$29,550.00 Option Letter #1 05/24/2024: \$0.00 Total Grant Amount: \$29,550.00	
DOLA Program Manager Julia Masters, (303) 349-1616, (julia.masters@state.co.us) DOLA Program Assistant Lindsey Sawyer, (720) 557-3797, (lindsey.sawyer@state.co.us)	Prior Grant Agreement Expiration Date June 30, 2024	Current Grant Agreement Expiration Date December 31, 2024

a. **For use with Option 1(a):** In accordance with Section 2(A) of the original Grant Agreement between the State of Colorado, acting by and through the Colorado Department of Local Affairs, and **San Miguel Power Association, Inc.**, the State hereby exercises its option for an additional term beginning **July 01, 2024** and ending on **December 31, 2024**. Tables in Sections 4.3 and 4.5.2 of Exhibit B are deleted and replaced with the following:

<u>Milestone/Performance Measure:</u>	<u>By:</u>
Provide DOLA with electronic copy of the draft Feasibility Study including final site location evaluations.	December 1, 2023
Provide DOLA with electronic copy of the draft Feasibility Study budgets including all estimated operating and land lease costs.	December 31, 2023
Provide DOLA with electronic copy of the draft Feasibility Study high-level pro forma and draft RFP.	March 31, 2024
Provide DOLA with electronic copy of final Feasibility Study accepted by Grantee.	Prior to Project closeout.
Submit Quarterly Pay Requests	See §4.5.2 below
Submit Quarterly Status Reports	See §4.5.2 below
Submit Project Final Report	March 31, 2025

Quarter	Year	Due Date	Pay Request Due	Status Report Due
3 rd (Jul-Sep)	2023	October 30, 2023	Yes	Yes
4 th (Oct-Dec)	2023	January 30, 2024	Yes	Yes
1 st (Jan-Mar)	2024	April 30, 2024	Yes	Yes
2 nd (Apr-Jun)	2024	JULY 15, 2024*	Yes	Yes
3 rd (Jul-Sep)	2024	October 30, 2024	Yes	Yes
4 th (Oct-Dec)	2024	January 30, 2025	Yes	Yes

*State fiscal year runs July 1 – June 30 annually. Grantee must request reimbursement for all eligible

6. Executive Summary

The feasibility study proposed and agreed to in the planning grant included exploring the potential of a community scale microgrid for resiliency that included a community scale solar array located in the Town along with a community scale storage system. The two major components would constitute the microgrid equipment required to provide the town four hours of back-up power and a solar array that could provide an average daily recharge as well as meet the Town’s goal of offsetting their historic annual electric usage.

Based on a number of discoveries and through the course of this planning grant the feasibility study scope was altered and the planning grant was extended to accommodate the changes.

The Quarterly Progress reports demonstrate the evolution of events and circumstances that have led to the Summary and Conclusion for this feasibility study. The following is a brief recap of those events and circumstances:

- 1) SMPA hired a subcontractor to initiate the technical analysis. See Forever Solar participated in the early stages of the Study but suddenly left the area, stopped work, and their subcontract was terminated.
- 2) SMPA hired two other subcontractors to fill that void: Sunsense Solar and Soleil Services.
- 3) Early exploration of Town proposed parcels proved untenable for placing a community scale solar array on Town property. This was primarily due to the objection of Town residents, in a series of public General Assembly meetings, to the potential visual impact the solar array would have if installed on the several Town-owned properties proposed. Instead, the Town requested SMPA explore two other possible solar generation approaches:
 - i) Explore the potential for meeting the solar generation requirements by analyzing the roof top solar generating capacity of all buildings in town. The Town General Assembly wished to see if installing solar on rooftops could serve as an alternative to siting a single community scale solar array on Town owned property. The General Assembly (GA) believed that the community scale solar array would not meet the visual aesthetic concerns of most residents if installed in this narrow mountain valley. The consensus was that the visual impact would alter the character of the community, potentially affecting property values.
 - ii) Additionally, the GA also wished for SMPA to conduct a very high-level exploration of how much community solar could be sited on nearby USFS land that the GA may have to acquire in the future for expansion of their water storage needs. This proposed location would be less visible to most Town residents. This analysis revealed that this parcel could host a 375-kW solar array, deemed large enough to meet the stated objectives.
- 4) Early work to identify a battery storage solution also bumped into a number of technical challenges. Based on the relatively small electric load (88 homes and buildings), the Town is fed by a single-phase radial distribution feeder. Battery storage solutions of the scale required to meet the resiliency needs of the Town are generally only commercially available in three-phase configurations. Identifying a single-phase storage and microgrid controls solution was eventually achieved, but not in time to apply for the last round of available DOLA Construction Grant Funds. This Final Feasibility Study does include a likely available single-phase solution that will be considered when applying for any future DOLA or other Grant funding- required for SMPA to justify moving forward with procuring, owning and operating a storage based microgrid solution.

Feasibility Study Conclusions

- An appropriate battery storage solution was identified that could provide up to four hours of back-up power based on the Town's historic electrical energy use. This battery system could be likewise sized to meet future load growth.
- Although potentially impractical or too expensive, there is sufficient roof space on Town buildings to offset the need for a single community scale solar array. No specific funding

has been identified to assist individual home and building owners to facilitate this approach.

- The USFS parcel that the Town may consider acquiring to meet their water storage needs is large enough to host a community solar array capable of meeting all the objectives of the microgrid operation and offset the Town's existing and future annual electric usage requirements.
- The combination of rooftop solar and community solar is likely the best solution, both to interface to the storage system for robust microgrid operation as well as meet the Town's goal of locally generating all their electric needs.

7. Feasibility Study Technical Analysis

Below is a chronological list of technical feasibility study updates provided by SMPA's subcontractor Sunsense, Inc. They reflect an archive of design evolutions that were performed throughout the course of the Planning Grant project culminating in three final tasks to complete this feasibility study.

The three final feasibility study tasks were outlined and agreed to with the Town of Ophir based on a letter they submitted to SMPA on March 27, 2024. The tasks include

1. Finalize the community scale microgrid battery storage system. This design would be used to inform a future Construction Grant application.
2. Shift focus away from a town owned parcel for a community solar system to the potential solar generation capacity of the existing roof surfaces on all buildings in town.
3. Conduct a high-level assessment of the solar generation capacity that could fit on a potential USFS parcel the Town may look to acquire in the future for their water storage needs.

Below is the letter which formed the final focus for the Feasibility Study.



March 27, 2024

San Miguel Power Association
Attn: Wiley Freeman
P.O. Box 1150
Ridgway, CO 81432

Dear Wiley,

The Town of Ophir would like to express gratitude for SMPA's efforts thus far regarding applying for and implementing the DOLA Microgrid Community Resilience (MCR) Planning Grant to fund a plan for a microgrid project to provide electric resiliency for the Town and support us in our goal to become powered by 100% GHG-free electricity. We appreciate SMPA's support and flexibility as we navigate town discussions to incorporate input from our community into direction of the study, and agree with SMPA's new proposal to focus on the following priorities:

1. Explore the viability of locating a community scale battery storage system on "SMPA-managed easement property" with rooftop solar as the source of additional load consumption and battery charging to extend the outage coverage of the microgrid battery and meet the resiliency objectives outlined in the planning grant application.
2. Shift the focus of the solar component of the feasibility study toward analyzing the potential of using existing and projected rooftop solar to achieve town goals of increased local generation as well as additional outage battery charging.
3. Perform a high-level community scale solar system analysis on USFS property that Ophir projects needing to disturb within the next couple of years in order to expand water storage capacity for the town. The potential property location will be in the vicinity of the red star on the attached aerial photo of Ophir. A perimeter of the approximate location can be provided to SMPA by Ophir staff after the snow melts this Spring. Ophir's understanding is that this high-level study can be performed without SMPA physically accessing the land, and Ophir wishes to understand the solar production capacity of this property to support the Town's continued exploration of a special use permit with USFS for the potential use of locating a community scale solar system.

With this letter and the focus priorities above, the Town of Ophir provides formal approval and support to SMPA to move forward with the DOLA MCR grant-funded feasibility study on behalf of the Town.

Sincerely,

Andy Ward, Town of Ophir Mayor

8. Status Report for Town of Ophir Microgrid (7/13/24)

Initial Challenges

Following several meetings and presentations the Town of Ophir is still undecided on a direction for integrating a microgrid consisting of both solar electric and energy storage. After struggling to find a solid location for a solar electric array in Ophir, the best proposed solution would be to narrow our focus to a BESS only dual-benefit solution that would be capable of both micro-gridding and providing resilience for the community of Ophir and offer the potential for Tri-State to use the Battery Energy Storage System (BESS) as a Distributed Energy Resource Management System (DERMS). Site control for the location for this standalone BESS has not been identified and will take some negotiations with the Town in the near future. Determining a BESS-only location will be far easier to identify than BESS plus solar due to space constraints and community buy-in.

BESS Size and Functionality

After further discussion of the loads and potential costs for the Town of Ophir we decided a BESS sized approximately 250kW/550kWH would be appropriate to cover a 4-hour duration in the event of a power outage for the town. We would recommend oversizing the pad and likely the inverter if the Town would like to prepare for community growth and additional loads in the coming years.

BESS specification is speculative in nature as Sunsense is currently not to the point of being able to find an energy storage solution that is single phase and large enough to power the Town of Ophir. We have also not been able to find a smaller system that can be scaled to the size needed. Some large 3-phase inverters can run with a significant imbalance when in off-grid mode, but still require 3 phases for normal grid-tied operation. Sunsense is currently researching custom options for this application. Any solution will need to be field listed to UL9540 and potentially somewhat custom in nature.

If and when a solution is determined, an adequately sized concrete pad and chain-link safety/security fence (w/privacy slats) will likely be required. However, the potential for a shade/weather structure is also on the table. Furthermore, we could also design the BESS fence or surrounding area with somewhat of a rustic feel and establish more buy-in from the Town residents.



Above...Telluride High School BESS package with concrete pad and safety/security fence.

Capacity of possible Community Solar system for future USFS parcel

As noted, incorporating a solar array into this microgrid package has been contentious. Whether the concerns is structural (the Town of Ophir lies in an avalanche-prone valley with high snow loads) or aesthetic, including a solar array seems unlikely.

Should an array be considered, the logical design would require a pole mounted array to elevate the solar electric panels above the snow to maximize production.



Additional opportunities may exist with the possibility of some distributed solar electric systems throughout the town.

BESS Preliminary Drawings - TBD

Estimated BESS Comparable Costs for 3-phase

It should be noted that the pricing below is based on current manufacturer pricing and specification assuming 3-phase power and given that a comparable single-phase solution has not been identified. Therefore, this is for information purposes only.

Estimated shipping and sales tax are excluded. Please note Contingency.

Engineering/Procurement/Construction Estimates TBD

BESS Package - 250kW/550kWh ESS (no longer compatible unless 3 phase location). \$877,000

Breakdown as follows:

Engineering - \$25,000

Equipment/Materials - \$500,000

Infrastructure/Labor - \$110,000

Peripherals - \$125,000

Utility Equipment - \$30,000 TBD Need to find appropriate solution

DORA (State Electrical Inspection - capped) - \$2000

SMPA interconnection costs - \$10,000

Contingency - \$75,000

Land Lease Costs

Town of Ophir negotiations. TBD

Replacement Costs

Extended Warranty on BESS (Years 5-10) \$40,000

Battery Inverter at Year 10 TBD

ESS Batteries at Year 10 TBD

Estimated O&M Costs

Annually for basic preventative maintenance and annual inspections. \$3000

Reactive service costs TBD



C-BESS MG 1000 kW

This plug & play Energy Storage System combines the components necessary to provide Off-grid, Microgrid backup as well as On-grid services. The ESS is pre-engineered, assembled, wired and tested in the factory before shipping.

Integrates Onsite Assets

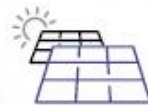
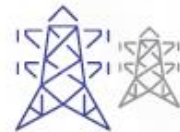
The Battery Energy Storage System integrates, communicates with, and controls assets such as on-site PV inverters, diesel, propane, and natural gas generators, as well as grid power. The system is Microgrid ready with black start capability and ships with an external grid disconnect contactor sized to meet a site's backup needs.

Safety & Compliance

The ESS incorporates the highest safety and compliance standards including UL 9540 for full-system safety, UL 9540 A for battery safety, as well as inverter UL and IEEE certifications. The fire protection system incorporates multiple levels of safety.

The Current Energy Storage Advantage

Our team will proactively work with your engineers and electricians to support early design development, system installation, on-site commissioning, and testing. We develop low voltage and communication drawings for each site. We will also work with your team to develop a site-specific line drawing.



CURRENT ESS MICROGRID

C-BESS MG 1000 – 1320 Technical Specifications

AC Parameters

Continuous AC Current	1200 RMS
Overload AC Current	110% 10 Minute / 125% 10 Second
Continuous AC Power	1000 kW @ 480
Rated AC Operating Voltage	480 VAC
AC Line Nominal Frequency	50 / 60 Hz
Peak Efficiency	97%
Power Factor	0/0 Leading or Lagging

Battery Rack

Battery Rack	Per Rack
Battery Chemistry	NMC
Energy	110 kWh
Capacity	110 Ah
DC Voltage Range	740 – 1475 VDC
Nominal Voltage	1006 VDC
Max DC Current	139 A
# modules per rack	17 modules
Battery Capacity	1320kWh, 2640kWh (Expandable)

Safety

AC Breaker	Included
DC Disconnect	Included
DC Input Fuses	Included
EMS and BMS UPS	Included

Environmental Spec.

Environmental Spec.	Enclosure
Dimensions (L x W x H)	170" x 75" x 111"
Enclosure Weight (Shipping)	7000 lbs
Enclosure 1100 kWh (Installed)	26000 lbs
Paint Tested	1000 Salt Hour Spray
NEMA Rating	NEMA 3R
Cable Entry	Conduit path provided (Base)
Temperature Range	-20°C to 50°C
Fire Suppression	Hybrid Novec 3M-Dry Pipe Water UL Listed Fire Panel

Communications

Cell Modem	4G LTE
LAN	(16) Unmanaged Ports
RS 232/422/485	(2) COM ports
Digital Inputs and Outputs	5 inputs and 5 outputs
USB	(3) 3.0 Ports
Canbus	(1) port
Gateway HMI	Included

Microgrid Controller (EMS)

	Off-Grid	Black Start, Solar and Generator Integration
	Grid-Tied Microgrid	Peak Shaving, Seamless Backup, Demand Response, Time of Use Shift

Certifications and Compliance

PCS	IEEE 1547 A and UL 1741 SA
PCS	CA RULE 21 PJM, RoHS, Reach
Battery Racks	UL 1973, IEC 62619, UL 9540 A
Enclosure	UL 9540
Arc Flash Evaluation	On File

Optional Safety / Expansion

Enclosure	Deflagration Panels
Honeywell LI-ION Tamer	Off Gas Sensing
Battery Expansion Package	Up to 1320 kWh / Expansion Enclosure

Current Energy Storage and ELM FieldSight have been partners in designing and developing Energy Storage Systems since 2016. Our partnership today extends through selling and marketing a broad range of BESS systems manufactured by ELM. Contact us today for more details.

p 650.793.2889 | **w** currentess.com | **e** d.hill@currentess.com

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1022 Rev.001 CESS-100-105

9. Status Report for Town of Ophir Microgrid (10/27/24)

We wanted to provide an update on what has happened in regard to a single-phase solution for Ophir. So far we have not gained a tremendous amount of traction, but we are still trying. Apparently, most companies are not doing much volume in this department and solutions are limited.

ELM only has a solution that has been UL tested up to 3 enclosures and 6 inverters which ends up being a 90kW/210kWh package. Until yesterday we thought they may have had an alternative single-phase solution, but after hearing back yesterday we were told this was the only option at this point. We also had conversations with Ageto and others and nobody seems to have a solution off the shelf and only recommend combining small inverters, but this could have challenges as well.

Currently, we are just beginning to explore options with an engineering firm out of Boulder called Kronus engineering. Kronus is a battery integrator specializing in system design, assembly, testing, and onsite commissioning of C&I-sized battery energy storage systems. They have a team of engineers with expertise in mechanical, electric, and software design and high-voltage technicians. We are hoping they will be interested in working with us to create a solution. We should know more in the next two weeks about this opportunity and will fill you in as soon as we know.

On the PV side of things, we have not identified a location at this point for a PV array. This is still a work-in-progress and we do plan to come down around the 4th of November for a site visit to the town of Ophir

10. Status Report for Town of Ophir Microgrid (12/9/24)

BESS Size and Functionality

Below is the final analysis conducted to achieve task 1 of the new direction to focus on a storage only solution as the primary component of the Ophir Microgrid for Community Resilience.

After further discussion of the loads and potential costs for the Town of Ophir we decided a BESS sized approximately 250kW/550kWh would be appropriate to cover a 4-hour duration in the event of a power outage for the town. We would recommend oversizing the pad and likely the inverter if the Town would like to prepare for community growth and additional loads in the coming years.

Sunsense now has a conceptual plan for a 280kW/551kWh single-phase Battery Energy Storage System solution that is large enough to power the Town of Ophir. Any solution will likely need

to be field listed to UL9540 and potentially somewhat custom in nature. The specifications are listed below the next paragraph.

When location is determined, an adequately sized concrete pad and chain-link safety/security fence (w/privacy slats) will likely be required. Fencing, concrete pad, and labor to build have been estimated. However, the potential for a shade/weather structure is also on the table. Furthermore, we could also design the BESS fence or surrounding area with somewhat of a rustic feel and establish more buy-in from the Town residents.

System:

- 551 kWh of Kore M-1 NMC batteries in Dolomite racks housed in a 20 ft enclosure with HVAC
- Connected to an EPC PD 500 derated for single phase in same enclosure as the batteries
- 208 VAC with 50/60HZ set-up available
- Transformer included for EPC
- 4,000 cycles for 10+ year daily usage
- Remote Communications through Modbus/CANbus
- System Design Drawings included
- AC Panel up to \$5,000 included
- 2 days on site installation and commissioning
- NFPA compliant water ready fire suppression included

Warranty:

- Standard 3 year
- Extended Warranty to 10 years

Availability:

- 1-6 months (currently can ship in 5 months)

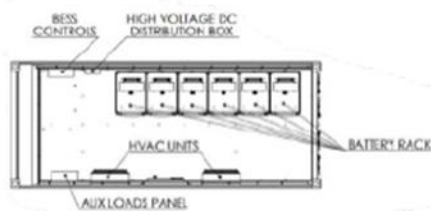
System Specs (per container)		
Nom Energy	551	kWh
Usable Energy	496	kWh
Power	288	kW
DC Voltage Range	627-974	VDC
AC Voltage	208	VAC
Weight	16000	LBS
Dimensions	H 8.5ft x W 8ft x L 20ft	

Energy Capacity:	92 - 637 kWh
Power Capacity:	144 - 500 kW
Battery Cycle Life:	~4,000
Battery Chemistry:	Lithium NMC
Connectivity:	Integration with onsite solar and EV charging
UL Certification:	UL1973 & UL9540a Batteries UL1741-SB Inverter
O&M:	Simple & safe maintenance
Container:	20ft weatherized ISO container

The Guardian was developed to provide a durable, customizable, and safe containerized energy storage system. This BESS has helped clients achieve a diverse group of energy goals, including:

- Reducing grid reliance
- Maintaining power during blackouts
- Boosting profits through energy arbitrage
- Cutting electricity costs by managing demand or shifting loads.

The modular design enables this energy solution to meet a range of unique load requirements, including those of utilities and IPPs.



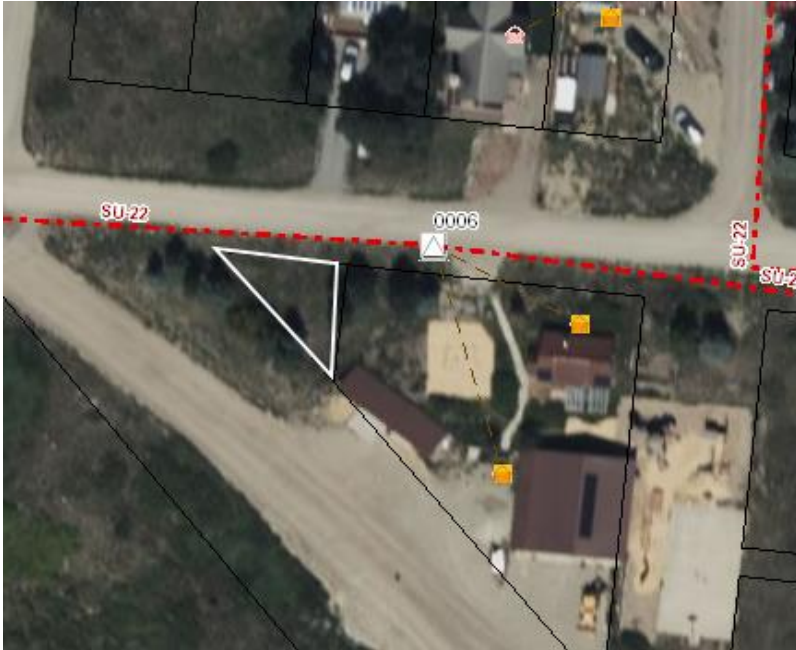
Although the final location for the battery system will not be needed until such time as we apply for the final construction funding, initial explorations have begun.

In looking at the various possibilities we believe the best place to locate the batteries is next to our line (shown below as a red dashed line) and near the Town Hall or on Town property. We would co locate the circuit isolation switch there and place another switch up near the Post Office mounted on the existing poles. This would allow the battery to power loads up to the Post office but not further towards the highway (backing up the largest number of homes and facilities).

The image above depicts the size of the battery system that is currently being considered and therefore helps to define the size of the location we will be seeking.

SMPA has reached out to the Town to begin exploring several possible locations. The triangular parcel shown below may be a good possibility (depending on the dimensions) to locate the concrete pad with container. .

The parcel appears to be owned by Utah Power and Light.



Additionally, the spot on Town property next to the road and the line would also be a good candidate. See the drawing below.



SMPA will continue exploring these and other possible battery locations.



Above, for comparison and reference, is a photo of the Telluride High School microgrid BESS package with concrete pad and safety/security fence. This system is about half the size of the system being considered for the Ophir Microgrid.

Estimated Costs for 280kW/551kWh BESS

Below is the estimated hardware cost that could be used to inform a potential future Construction Grant application. It should be noted that the pricing below is based on current manufacturer pricing and specification for a single-phase solution. Exact location for this solution has not been determined; therefore, any unknown expenses to interconnect are TBD.

Shipping has been estimated, and TBD and sales tax are excluded. Please note Contingency.

Engineering/Procurement/Construction Estimates TBD

BESS Package - 250kW/551kWh ESS \$1,134,350

Breakdown as follows:

Engineering - \$35,000

Equipment/Materials - \$703,175 *Controller TBD – Allowance of \$45,000 included.

Infrastructure/Labor - \$145,040

Peripherals/General Conditions - \$130,135

Additional Utility Equipment Allowance - \$30,000 TBD

DORA (State Electrical Inspection - capped) - \$2000

SMPA interconnection costs - \$10,000

Contingency - \$79,000

Additional Costs Not included in estimate below:

Land Lease Costs

Town of Ophir negotiations. TBD

Replacement Costs

Extended Warranty on BESS (Years 5-10) ~\$40,000

Battery Inverter at Year 10 TBD

ESS Batteries at Year 10 TBD

Estimated O&M Costs

Annually for basic preventative maintenance and annual inspections. \$3000

Reactive service costs TBD

11. Rooftop solar capacity analysis for the Town of Ophir buildings

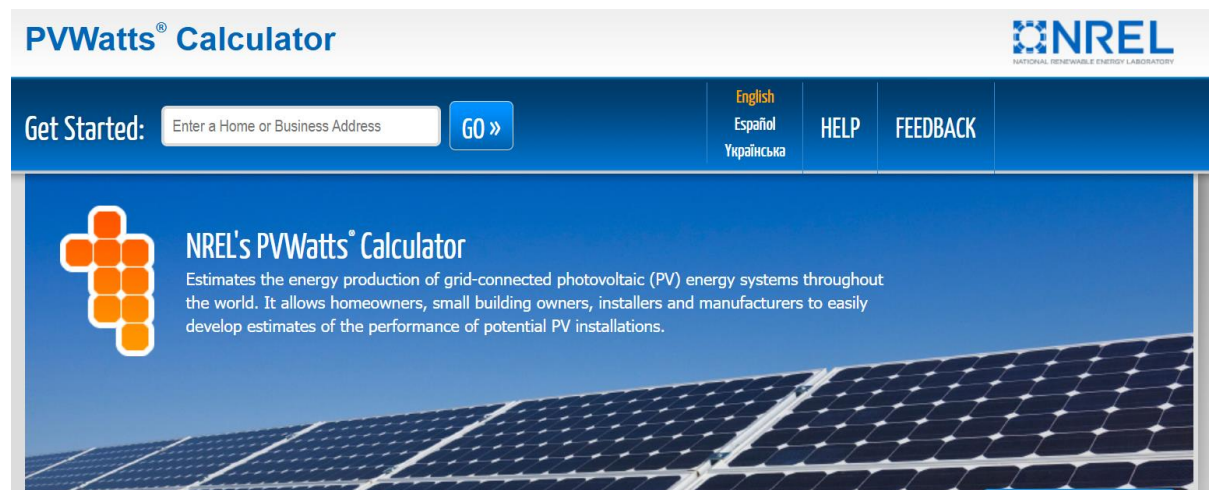
The second revised tasks requested in the March 27th letter from the Town Mayor suggested a shift in focus away from exploring a community scale solar array, sited within Town property, to interface with the microgrid storage component (sized to cover the Town's annual electric consumption as well as provide auxiliary charging for the storage system) and instead explore the potential to place sufficient generating capacity to cover the town's historic electric consumption with solar installed on the rooftops of the buildings located in Town.

SMPA subcontracted with Soleil Services LLC, to devise the methodology and conduct the analysis. The following is a brief report with the results of this task.

Solar generation capacity estimate methodology

The goal for this task was to conduct a high- level analysis of how much solar capacity could be realistically sited on the rooftops of all buildings in Town. The following methodology steps were devised to achieve this goal.

1. Obtain the SMPA service address and annual electric consumption (in KWh/year) for each electric account in Town. This data included both the individual facility uses as well as the total for all Town electric consumption.
2. Identify the service address and image of the home on Google Earth to use in the next step
3. Incorporate the solar system design software program developed and offered by the National Renewable Energy Laboratory. The PVWatts[®] Calculator allows the user to enter a location, view it in Google Earth, and draw a hypothetical solar array on available roof surfaces visible in Google Earth. The calculator then estimates how much solar could fit and how much annual energy it might generate, based on a number of prescribed and optional derate parameters (e.g. roof pitch, orientation).
4. Compare the results of this calculator to the historic 2023 electric use data obtained in step 1 and tally that information in a spreadsheet for final reporting.



PVWatts[®] Calculator

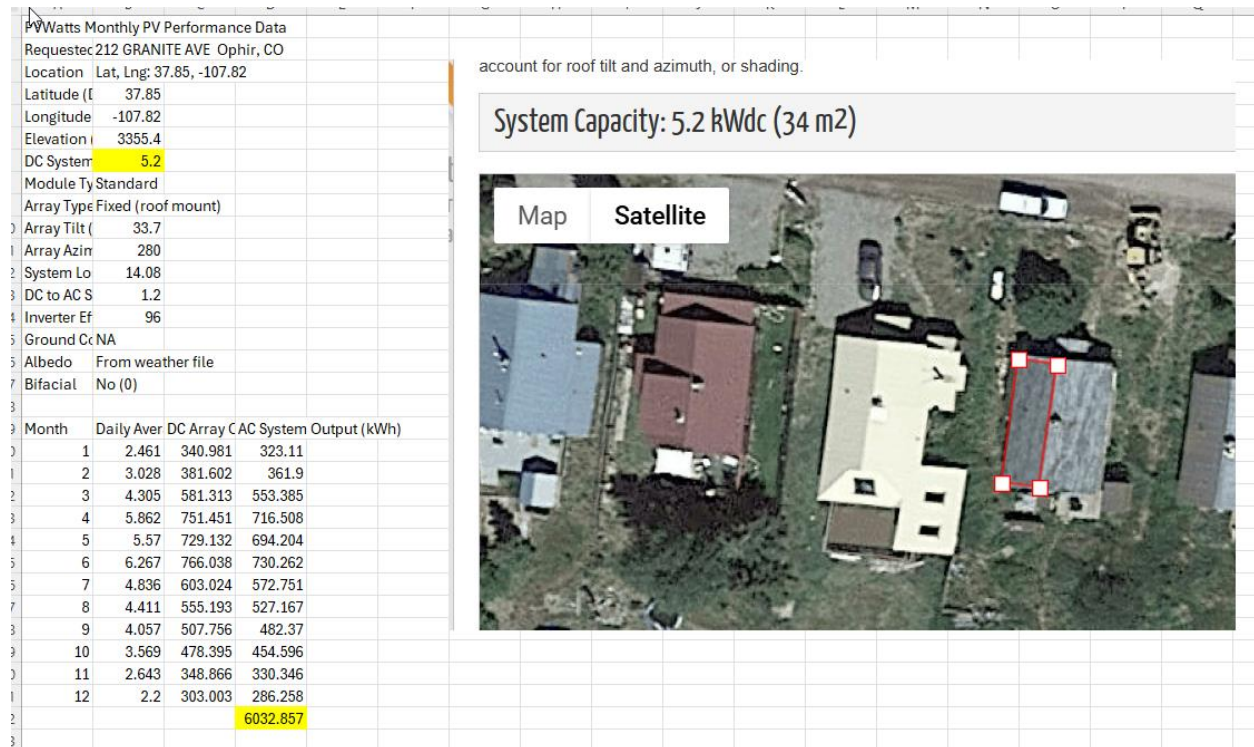
English
Español
Українська

HELP FEEDBACK

Get Started: [GO »](#)

NREL's PVWatts[®] Calculator
Estimates the energy production of grid-connected photovoltaic (PV) energy systems throughout the world. It allows homeowners, small building owners, installers and manufacturers to easily develop estimates of the performance of potential PV installations.

Below is an example of the results of the program for the estimated capacity for one of the 88 electric accounts that were provided by SMPA. The results of each account were uploaded to an individual excel file, specific to that account, and then added to a summary spreadsheet reflecting the totals for the Town.



For this particular account (house on far right) you can see the hypothetical solar array outlined in red on the roof is only shown on the West facing roof surface. Solar arrays facing south are the most cost effective but not many homes in Ophir have available south facing roof surfaces. Based on SMPA’s pending Time of Use rates an equally sized rooftop solar system facing West rather than East will be more cost effective.

The result for this home was an estimated 5.2 kW DC array that could produce \$6,032 kWh/year. Comparing this to the annual usage for this electric account, this size array would cover 98% of this home’s annual energy use. You can see that the East facing roof in this case could also be used to house even more solar. In cases where the proposed array design did not come close to 100%, other roof surfaces were analyzed. In some cases, the analysis looked at as many as three roof surfaces.

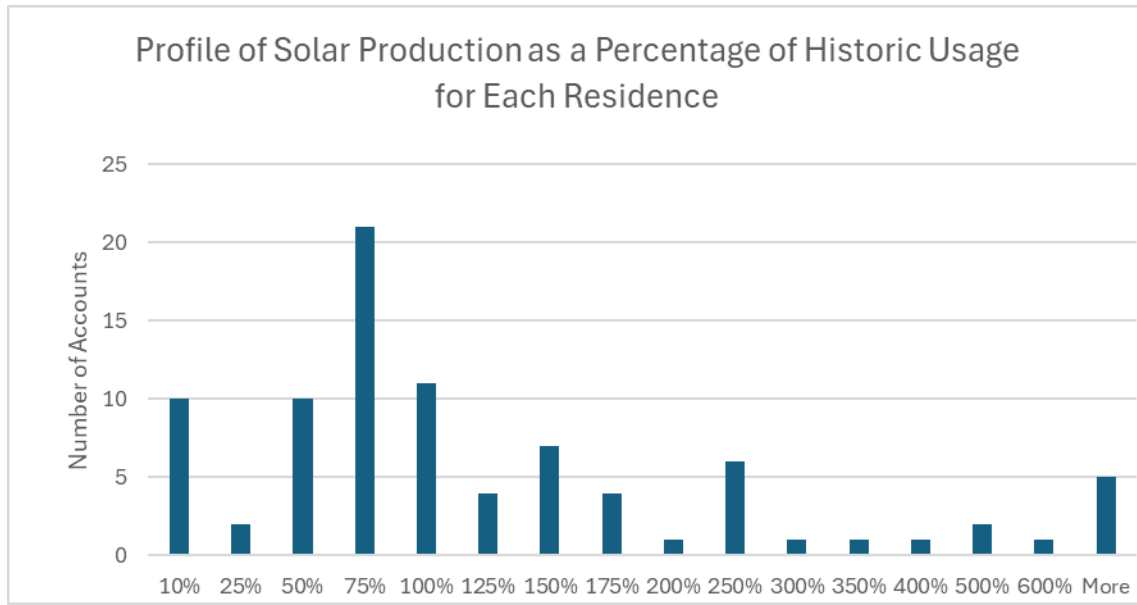
Likewise, the quick capacity calculator in some cases showed potential for several hundred percent of the historic annual use. Other considerations to conduct this analysis included:

- There were 88 electric accounts provided. Of these the PVWatts® Calculator program could not estimate the solar capacity for 9 out of the 88 or about 10% due to there being no available Google Earth image
- These estimated solar capacities reflect a very high-level design due to the limitations of the program. More detailed and accurate solar capacity estimates could be obtained by a professional solar contractor after an actual site visit. The estimated results should be considered high level and not as granular as what a more detailed site visit would allow.
- In many cases shade from nearby or future trees or other roof features would alter the estimates.
- The pitch of the roof, a required parameter in the calculator program, along with other potential derate parameters were estimated as best as could be done by merely viewing the Google Earth photo images.
- The chosen design does not necessarily speak to the cost effectiveness of installing solar on any given structure but merely estimates the roof top capacity of the house and the chosen array size.
- As mentioned above, one or more alternative roof surfaces could yield different individual results for each facility. Those chosen were considered sufficient to inform this high-level analysis. A more thorough analysis would likely yield even greater potential generation capacity for each account, likely increasing the estimated generation capacity in Town.
- The individual files for each account can be made available for any homeowner through an information request form to SMPA. Otherwise, this study only provides details based on the location and not the name or account holder for the property.

Analysis Summary

The total annual aggregated electric energy use for all homes in 2023 was 591,629 kW/year. Although this analysis could only look at 90% of the roof surfaces, and using the sizing methodology described above, the accumulated solar capacity showed a total solar array potential of 391 kW generating 562,106 kWh/ yr or 95% of the historic 2023 usage.

The distribution of the estimated solar generation available for each account ranged from only 10% of consumption to more than 600% of the individual account use. The graph below shows the distribution.



Although these high-level estimates could also include additional roof surfaces, and in light of the missing 10% not included in the analysis, it can be concluded that there is sufficient available roof capacity on the homes and buildings in Ophir to produce enough solar energy to offset the historic electric consumption in Town.

Three important qualifiers need to be mentioned:

1. The solar generation capacity is only compared to the electric use of the buildings in town and does not include energy used by heating and cooking with wood or natural gas. Future load growth and fuel switching through beneficial electrification will increase the electric use. However, there should still be sufficient rooftop solar generation potential to offset this future load growth.
2. Although there is sufficient roof space available to generate all the electric usage, this analysis does not include any conclusions about the cost effectiveness of hosting this much solar on existing roof surfaces. Many factors such as roof condition, weight loading, orientation, shading and roof obstructions, and the practical costs of installing solar panels on individual roofs may deem sitting solar on available roof surfaces impractical and too expensive. Regardless of available incentives and potential future funding, a community scale solar array would prove to be much more cost effective to meet the goal of offsetting the Town’s electric energy use with solar generation. It is estimated that a 360 kW DC community solar array could meet the current Town usage.
3. Placing solar generation on individual homes “behind the meter” enables individual homeowners to leverage the benefits of the Net Metering rate. A community scale solar system would only enable wholesale rate revenue.

Conclusion

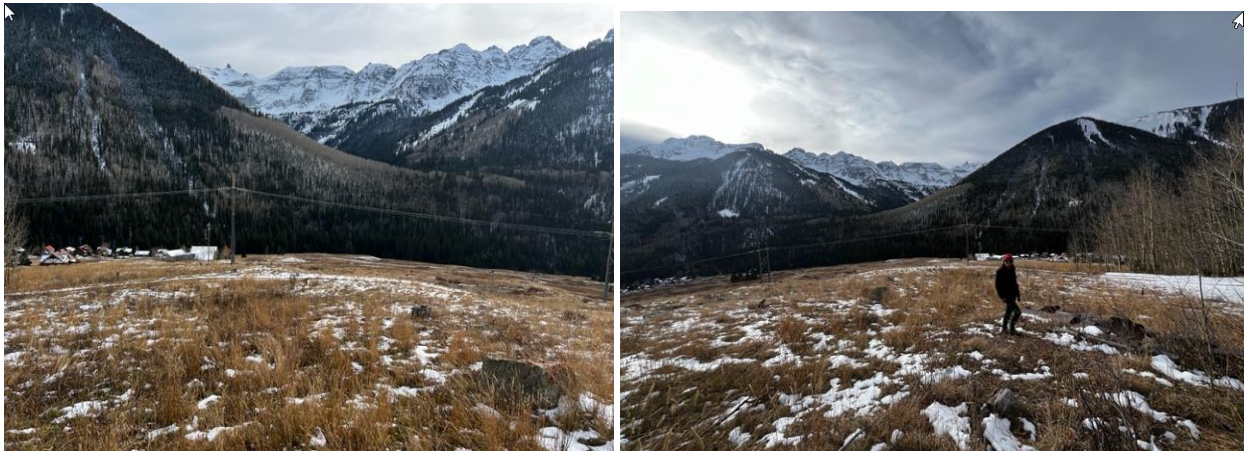
Likely the best solution to meet the Town's goal of offsetting their existing and future electric consumption would be a combination of individual home rooftop solar systems combined with a moderately sized community solar array. Whether installed on individual rooftops or combined with a community solar array, all available solar generation would not only offset existing and future energy consumption but would also be available to extend the outage coverage of the planned community microgrid storage system. The more local solar generation the greater the Town's resiliency.

12. Community Scale Solar Array potential on USFS property near water tank location.

Based on item 3 in the request letter by Andy Ward, Town Mayor dated March 27, 2024, SMPA agreed to include the evaluation of a potential property that the Town foresees having to obtain to expand their water storage capacity.

The site location below identifies a potential home for a 375kW DC solar array. Given the cold and snowy micro-climate of Ophir, it is recommended that the solar array tilt be set at minimum of 35 degrees and a minimum of five feet of low edge clearance.

Kim Wheels from Eco Action Partners walked the site to collect GPS coordinates of the proposed property boundary.



Below is a depiction of what a ground mounted array might look like sited in the location identified.



An example of a pole mounted solar array that is installed high enough to handle the anticipated snow accumulation.

Estimated Costs for 280kW/551kWh BESS

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Peripherals/General Conditions - \$130,135

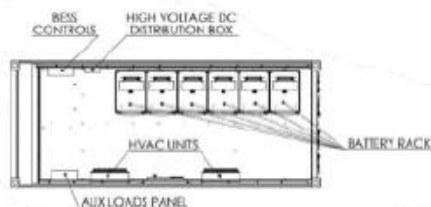
Additional Utility Equipment Allowance - \$30,000 TBD

DORA (State Electrical Inspection - capped) - \$2000

SMPA interconnection costs - \$10,000

Contingency - \$79,000

Energy Capacity:	92 - 637 kWh
Power Capacity:	144 - 500 kW
Battery Cycle Life:	~4,000
Battery Chemistry:	Lithium NMC
Connectivity:	Integration with onsite solar and EV charging
UL Certification:	UL1973 & UL9540a Batteries UL1741-SB Inverter
O&M:	Simple & safe maintenance
Container:	20ft weatherized ISO container



The Guardian was developed to provide a durable, customizable, and safe containerized energy storage system. This BESS has helped clients achieve a diverse group of energy goals, including:

- Reducing grid reliance
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