

City of Ashland – Sustainability Committee Meeting

Thursday, April 30th, 2026

6:00 pm – 7:00 pm HYBRID MEETING:

**Meeting Link: <https://meet.goto.com/740241965> | Access Code:
740-241-965 – 2nd Floor Conference Room (601 Main Street W)**

Energy Action Plan, 25x25 Plan, Sourcewater Protection Plan linked here:
<https://sites.google.com/view/ashland-sustainability/themes>

Agenda – * Revised 04/27/2026

- 1) Approval of Agenda
- 2) Approval of minutes from the March 26th, 2026 meeting
- 3) Citizen Participation
- 4) Projects/Discussions
 - a) Communications - Discussion
 - b) Ashland County Comprehensive Plan Sustainability Chapter Discussion/Action if necessary
 - c) Potential Grant/Funding Opportunities – Beth Gehred
 - d) Sustainable Purchasing Policy – Discussion
 - e) City Solar Opportunities – Discussion
 - f) Committee Opinion on Data Centers – Discussion
 - g) *Update on City-owned EV Charging Stations
- 5) Staff Updates
- 6) Future agenda items
- 7) Adjournment

The City of Ashland does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in employment or provision of services, programs or activities.

It is possible that members of and a possible quorum of members of other governmental bodies of the municipality may be in attendance at the above stated meeting to gather information or speak about a subject, over which they have decision-making responsibility. Any governmental body at the above stated meeting will take no action other than the governmental body specifically referred to above in this notice.

NOTE: Upon reasonable notice, the City of Ashland will accommodate the needs of disabled individuals through auxiliary aids or services. For additional information or to request this service, contact the Planning & Zoning Department at (715) 682-7041.

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Present: Charlie Ortman, Beth Gehred, Meghan Salmon-Tumas, Steven Wiley (Planning and Development Director), Brady Steigauf (Focus on Energy), Megan Link (Focus on Energy), Matt Danielson (Save Energy Wisconsin), Kevin Seefeldt

Agenda

- 1) Approval of Agenda
Ortman called the meeting to order at 6:03 pm and asked for approval of the agenda. Tumas moved approval and Gehred seconded. Motion carried 3-0.
- 2) Approval of minutes from the December 11th, 2025 meeting
Ortman asked for approval of the December 11th, 2025 meeting minutes. Tumas moved approval and Gehred seconded. Motion carried 3-0.
- 3) Citizen Participation
Kevin Seefeldt mentioned the downtown EV chargers. This situation has bothered him since they put the cloth over them. He did talk to Carver Harries at AADC and asked if AADC would be interested. He found out that AADC was not interested. It seemed complicated for the City to give something away. He would love to see these used whether we give them or sell them to someone. It's embarrassing to see these the way they are.
- 4) Presentation: Focus on Energy IRA Home Energy Rebates – Brady Steigauf and Megan Link
Steigauf introduced himself. He works with Focus on Energy. There are good Inflation Reduction Act (IRA) rebates and opportunities to use clean energy. There is a once in a generation opportunity to use the \$150 million we got. Focus has community partners/ambassadors throughout the state. Matt Danielson is that person for our region. Danielson thanked us for having him. He was in an attic in Hayward an hour and a half ago. It might be interesting to have a follow-up discussion. There is a pretty substantial positive economic impact. He has been doing green homes since 2008 and worked with Al Gore's Climate Reality project. He is glad to be here and moved up permanently 3 yrs ago. He is glad to be a resource. Steigauf would cover who Focus is, where do energy-saving opportunity exist in homes. Utilities pay into his program, and Focus offers rebates in the state. Xcel Energy participates. Focus returns the dollars utilities give them to incentivize energy upgrades. The program returned over half a million dollars between 2023 and 2025 in City of Ashland. Steigauf built a dashboard that can pull this data to show the impact. Three people in Ashland County participated in IRA program, one in the City. As prices of fuel increase, this protects you from future per unit costs of energy increases. The north has a cleaner part of the state for the electrical grid. Most of the state

is powered by fossil fuels. This reduces demand, supports the local workforce, investment in buildings, property values, and air quality. In our climate, heating is the main reason for energy waste. Close to 55% of our energy or more goes to heating homes. Focus recommends a high efficiency heating and water heating system here. Steigauf supports solar, and Focus offers rebates for it. However, it is usually not the most cost-effective route. It is more expensive than other systems. 371 residents participated in the program. There are several smart energy options. The weatherization program helps. Income limits are much higher for it. More than 70% of the state qualifies for programs. Focus on Energy can almost entirely pay for weatherization upgrades. The HOMES program is a modeled home energy rebate program so requires an energy assessment. Some people can do this in the area. Homeowners get income qualified to determine their eligibility and energy assessment costs money so Focus can help for low income owners. Owners work with registered contractors and can contact Steigauf or Danielson. An energy assessment is done, the contractor builds a project scope, and completes it. Often there is no cost for low income owners. Electrification is available for low-moderate income households. Steigauf showed a map of registered contractors throughout the state. There is a Residential Rebate Finder tool on the Focus on Energy website. It can show what you are eligible for and how much. Property owners can apply via the website. HOMES is a program to look holistically at your home. If you are drafty and uncomfortable in your home it is the better program. HEAR is to encourage switching to electric. Steigauf hopes we can share information with others-it is a team effort. He offered to take questions. Danielson said in light of economic changes to the area with the pool of cash existing it should increase the economic vitality of the area. His economic professor living in Bayfield predicts it is a 6 or 5 to 1 benefit. Ortman asked if there were questions. Gehred said we are a small committee and asked Steigauf and Danielson what they think we can do that would help. Steigauf and Danielson answered maybe helping Danielson find other contractors to register, finding groups that might want to hear from them like the Citizens Climate Lobby, or serving as an ambassador. Events such as food pantries and anything income qualifying people would be good to reach. The community organization website has literature on programs. Ortman asked if they keep addresses of where they have done projects so we know who has been reached. Danielson said it is a good question. Steigauf said they cannot share addresses due to confidentiality requirements. Three projects were HEAR projects. Danielson said WI was the first state to do rebates. Ortman said if there is a flyer, we send things out in the utility bill. Maybe we can facilitate this through an engagement session. Danielson said the Bayfield County Fair was not a viable place. Going to the IGA worked much better. Steigauf stated that 2 years ago Focus did engagement sessions before launching programs. The one in Ashland was the most attended in the entire state. Ortman asked if they reached out to Ashland County Health and Human Services. Terry Barmingham is the director. Ortman mentioned the Co-op, a homeless shelter, and other locations as places to put information out. Danielson stated that he did an assessment for the east side trailer park. Xcel does not have incomes but has service addresses. Danielson stated that they have a forthcoming meeting coming up with Norvado. Ortman asked if Focus could pay for us to send out a flyer in our utility bills. Steigauf stated that they don't have much budget to pay for mailing. Steigauf stated that if we have an event we can invite them. Steigauf and Danielson thanked the committee and left at 6:55 pm.

Seefeldt stated that there was an event last fall we sent something out for in the utility bill. Ortman suggested we could reach out to Xcel. Ortman suggested we can put this on the next agenda and brainstorm ideas for how to get the word out. Tumas stated that Matt Danielson also emphasized that we need some more people to do this work. Ortman asked if the Jolmas would be interested. He suggested reaching out to others. He asked Wiley to put this on the next agenda.

5) Projects/Discussions

a) Communications – Discussion

The Committee tabled this.

b) Ashland County Comprehensive Plan Sustainability Chapter Discussion/Action if necessary

Tumas had no updates on this at this time.

c) Potential Grant/Funding Opportunities – Beth Gehred

Gehred stated that apparently, we need to fill out a grant form and get approved by Council to apply for grants. She needs to see the grant form that needs to be filled out. Ortman asked if Wiley can follow up. Wiley said that he would.

d) Downtown EV Chargers – Discussion/Action if necessary

Gehred asked if there has been any progress. Ortman replied that the last he heard the Ashland Baking Company or Co-op would be interested. Wiley mentioned BART being interested also when the Mayor and Administrator reached out. Seefeldt suggested we take a vote and place it on a COW agenda to get it on the City Attorney's list of items to work on. Ortman said the motion could be to ask for the item to go on the COW agenda, have the City Attorney research this, and determine how to move forward. Bill Bailey said it could be a lease agreement where we own the chargers and another entity makes the profit. Tumas asked if the COW meetings were open to the public. Wiley stated that they were. Tumas suggested that Bill Bailey or someone else could attend. We could just give away energy to the public. Ortman and Wiley stated that this was not supported by the Administrator or public. Tumas moved and Gehred seconded to forward this to COW for a final disposition sooner rather than later. Motion carried 3-0.

e) City Solar Opportunities – Discussion

Wiley provided an update on the final report from Jolma and muGrid for the City Solar and Micro-grid assessment. He will provide this to the committee.

f) Committee Opinion on Data Centers – Discussion

The Committee decided to hold off.

6) Staff Updates

Wiley provided an update on the Vision apartment complex on the former Roffers site.

7) Future agenda items

Committee members asked for a discussion on a sustainable purchase policy. Ortman was at a conference where Counties and Cities had these and related ordinances. He stated that we should work on these. Tumas can provide examples from Northland. Gehred suggested discussing the recruitment of another member. A facilities person at the hospital is interested. Travis Hunter is his name.

8) Adjournment

Ortman asked for a motion to adjourn. Gehred moved and Tumas seconded. Motion carried 3-0. The meeting adjourned at 7:12 pm.

Recorded by:

Steven D. Wiley
Planning and Development Director

Ashland County Sustainability: Outline of Proposed Chapter for the Ashland County Comprehensive Plan

- What Is Sustainability?
 - (Focus on regionally-accepted frameworks)
- Why Plan for Sustainability in Ashland County?
 - Community Values (from survey and interviews by CRC)
 - Vision (how sustainability supports the County Comp Plan Vision)
 - Current Sustainability Conditions and Trends
 - Assets (tourism, forestry, agriculture, community strengths)
 - Vulnerabilities (climate trends and key events, aging infrastructure, low investment in rural areas)
 - Existing policies and initiatives (City of Ashland Sustainability Committee, state priorities)
- Recommended Sustainability Goals
 - Environmental Systems:
 - Protect residents from exposure to poor air, water, and soil quality to support public health.
 - Protect and restore lands and waters that provide habitat, recreation, cultural value, and essential ecological functions.
 - Enhance carbon sequestration and storage in natural systems and working lands.
 - Energy and Infrastructure:
 - Ensure an affordable, reliable, and resilient energy system that minimizes greenhouse gas emissions and air pollution.
 - Expand infrastructure for low- and zero-emission transportation, including electric vehicles, active transportation, and alternative fuels.
 - Design, maintain, and invest in infrastructure to withstand future environmental, economic, and climate conditions.
 - Economy
 - Support the long-term economic viability and sustainable management of working lands, including forests and farmlands.
 - Promote economic development that balances the needs of residents and visitors, supports long-term resilience, and sustains healthy ecosystems.
 - Community Wellbeing:
 - Ensure all residents have equitable access to high-quality housing, childcare, transportation, education, healthcare, emergency services, digital connectivity, and other essential community services.

- Reduce social isolation by fostering opportunities for meaningful social connection and community engagement.
 - Preserve and celebrate cultural resources through inclusive and adaptive programs that reflect community needs.
- Implementation Strategies
 - Review proposed policies
 - Partnerships
 - Funding opportunities
 - Timeline
- Metrics and Tracking
 - At least one quantitative metric for each proposed goal



AGENDA BILL

Ref.

COMMITTEE AGENDA: 01/09/2024

COUNCIL AGENDA: 01/30/2024

SUBJECT: 2024 EPA Community Change Grant Application

RECOMMENDATION: Approval

DEPARTMENT OF ORIGIN: Planning and Development

CLEARANCES: City Administrator

EXHIBITS: 1.

EXPENDITURES REQUIRED: NA

AMOUNT BUDGETED: NA

APPROPRIATION REQUIRED: NA

TREASURER’S CERTIFICATE: NA

COMPLIANCE WITH ORDINANCE 51: NA

STATEMENT OF CONFORMANCE WITH COMPREHENSIVE PLAN OF RECORD:

The EPA Community Change Grant could provide funding for a number of projects that address goals mentioned in the City of Ashland Comprehensive Plan and Strategic Plan. The Comprehensive Plan mentions protecting Lake Superior. The Comprehensive Plan also includes a recommendation of prioritizing energy efficient improvements and updates to city buildings and facilities. Water quality and pollution reduction are major goals of the EPA and the Community Change Grant. Climate action and renewable energy projects are also goals of the EPA. The grant could provide funding for projects which address these goals. The City’s Strategic Plan includes tasks of mapping the City’s stormwater system, elimination of wastewater overflow spills, open beaches, climate change resiliency, City greenspaces, and renewable energy use. The grant includes eligibility criteria for projects under all of these categories.

SUMMARY STATEMENT:

Bill Bailey of Cheq Bay Renewables is working with Lissa Radke of UW-Extension and Ashland County on an EPA Community Change grant application to fund climate action and water quality/pollution reduction related projects throughout the County. The Community Change Grant would provide between \$10-20 million for Ashland County if the County’s application is selected. There is no cost-share/match required. Within the \$10-20 million Mr. Bailey and staff discussed between \$3 to 4 million for potential projects within the City of Ashland. Ashland County would serve as the lead applicant and the City of Ashland would be a subrecipient of grant funds if the City partners with the County. Mr. Bailey has reached out to Memorial Medical Center, the towns, villages, and cities in the county to determine whether they are interested in partnering on the application. He has spoken to the Sustainability Committee at a number of meetings regarding seeking grant funding for

potential sustainability-related projects. In reviewing the notice of funding opportunity and application materials for the Community Change Grant City staff have determined that a number of projects within the City could fall under the eligibility criteria for the grant.

Since the County would be the primary applicant they would be responsible for administration and reporting for the grant. The City would be responsible for its projects and reporting to the County. Projects would have to be completed within 3 years and Mr. Bailey plans to submit an application by February 1st. Grant applications/projects must incorporate climate action strategies and pollution reduction strategies. Since the funding would be from the EPA water quality and pollution are major topics and projects addressing these could score high. Green infrastructure and solar/micro-grids could be possibilities. Mr. Bailey and City staff are working on finalizing project ideas for the City. Currently Mr. Bailey and staff are of the opinion that a solar array and micro-grid at the Wastewater Treatment Plant could account for approximately \$1.6 million of potential grant funding and water quality/pollution reduction projects could account for approximately \$2 million of grant funding for a total of \$3.6 million for the City.

The Planning and Development Director has reached out to John Butler of Public Works and Sara Hudson of Parks and Recreation for their input on project ideas. Brian Ledin of Wastewater would also provide input on any potential solar project for the Wastewater Treatment Plant. Staff is seeking Committee of the Whole and Council approval of a resolution supporting the City's participation in the grant opportunity. If the Council approves the resolution, staff would finalize the City's portion of the grant application to participate as an entity partnering with Ashland County. The resolution would not lock the City into participating. If Ashland County's grant application is selected the City would enter into an agreement with the County to formalize the City's participation after awarding of the grant. Staff believes this is a good funding opportunity for the City and requests support from the Committee of the Whole and Council for participation.

NORTHLAND COLLEGE

POLICY: Sustainable Electronics Purchasing Policy	POLICY NUMBER: [POLICY NUMBER]
RESPONSIBLE DEPT: IT Department	APPLICABILITY: STUDENTS <input type="checkbox"/> FACULTY X CONTRACTED SERVICES STAFF X ALL <input type="checkbox"/>
OWNER: Sustainability Workgroup	EFFECTIVE DATE: JUNE 1, 2020
	LAST REVIEW: MM/DD/YYYY
REFERENCES:	NEXT REVIEW: MM/YYYY
APPROVAL:	APPROVAL DATE: MM/DD/YYYY

PURPOSE

Northland College is dedicated to sustainability and ensuring the technology utilized by the College is energy efficient and made through environmentally responsible methods. The policy provides guidelines and information **to guide** sustainable purchasing practices in line with the mission and values on Northland College. This policy applies to electronics procurement conducted by all Northland College departments and offices.

DEFINITIONS

- **EPEAT:** EPEAT is a certification for computers and electronic products that includes standards for energy efficiency, materials selection, longevity, and other criteria related to sustainability. More information at <http://www.epeat.net/>
- **EnergyStar:** EnergyStar is a third party certification for energy efficiency backed by the US Environmental Protection Agency.

POLICY

All units of Northland College will purchase electronics (computers, monitors, laptops, tablets, phones, printers, and scanners) that are EnergyStar certified **and/or** rated at least EPEAT bronze.

This policy excludes specialized equipment for which no EPEAT certified products are available.

PROCEDURES

1. This policy will be reviewed annually by the Sustainability Workgroup.
2. All parties responsible for electronics purchasing will utilize this policy as guidance.
3. The IT department will provide data on annually each fall to the Sustainability Workgroup for purchases during the prior fiscal year. The workgroup will review compliance with this policy and make recommendations.

PUBLISHING

This policy will be published on the Northland College Sustainability Website, in the Sustainability Policy area.

NORTHLAND COLLEGE

POLICY: Paper Purchasing Policy	POLICY NUMBER: [POLICY NUMBER]
RESPONSIBLE DEPTS: BUSINESS OFFICE, ACADEMIC AFFAIRS OFFICE, MARKETING AND COMMUNICATIONS	APPLICABILITY: STUDENTS <input type="checkbox"/> FACULTY <input type="checkbox"/> CONTRACTED SERVICES <input type="checkbox"/> STAFF <input type="checkbox"/> ALL <input type="checkbox"/>
OWNER: SUSTAINABILITY WORKGROUP	EFFECTIVE DATE: 6/1/2020
	LAST REVIEW: MM/DD/YYYY
REFERENCES:	NEXT REVIEW: MM/YYYY
APPROVAL:	APPROVAL DATE: MM/DD/YYYY

PURPOSE

Purchasing office paper products that are made of post-consumer recycled content or agricultural residue, and are certified sustainable by third parties, is in line with the mission and values of Northland College. Using products made of recycled content promotes a market for recycled materials, and reduces environmental and land use impacts. Purchasing paper without recycled content contributes to greenhouse gas emissions in the SIMAP greenhouse gas emissions inventory, so purchasing recycled paper is one of many efforts towards carbon neutrality.

DEFINITIONS

- Post-consumer recycled content- content recycled by the end user and used as an input in making new paper
- Agricultural residue – residues left over from food production or other processes including straw, stalks, or other fibers.
- Forest Stewardship Council- an independent non-profit organization which certifies paper products
- Multi-use office paper – standard copier paper
- Other office paper products- specialty papers, non-standard sized paper, post it notes, stationary, glossy paper for publications

POLICY STATEMENT

Northland College will purchase paper with post-consumer recycled content or with a third party sustainability certification.

POLICY

1. All multi-use office paper purchased by the College shall contain **at least 30% post-consumer recycled, or agricultural residue** content. By 2025 the post-consumer recycled or agricultural residue content of office paper will reach 85%, as measured by cost.
2. Paper must also be certified to meet sustainability standards of one or more of the following: Forest Stewardship Council, Chlorine Free Products Association, or Sustainable Forestry Initiative.
3. All other office paper products purchase by the college will contain post-consumer recycled or agricultural resident content if the option is available.

PROCEDURES

1. This policy will be reviewed annually by the Sustainability Workgroup.
2. All parties responsible for paper purchasing will utilize this policy as a guideline for selecting multi-use paper products and other office paper products.
3. The Business Office will supply paper purchasing data annually each fall to the Sustainability Workgroup for the prior fiscal year. The workgroup will review compliance with this policy and make recommendations.

PUBLISHING

This policy will be published on the Northland College Sustainability website in the Sustainability Policy area.



City of Ashland Five Sites Solar + Storage Feasibility Study



Overview

Jolma Electric and muGrid Analytics performed a feasibility study starting January 21st 2025. This study includes five sites across the City of Ashland. Those sites include: Public Works Building, Police Department, Fire Department, Waste Water Treatment Plant and the Main Lift Station.

An eGauge Energy Device was installed in the month of July by Jolma Electric at each site to record each site's energy usage over a period of nine months.

Once the egauges were installed, muGrid Analytics configured the devices to start logging data.

The Microgrid is designed to achieve three hours or of reliable backup.

Due to some issues with the installs and the delay in internet access, data did not start recording until the month of August. The police department needed more equipment in order to get accurate readings that included the existing solar production. In result the police department eGauge did not start recording accurate data until September. During muGrid's analysis, we discovered that the data for the Public Works building, Police Department and the Main Lift Station was inaccurate due to incorrect CT installations. The following feasibility study is an analysis using all viable data that was available. muGrid commit to getting nine complete months of viable accurate data to complete this feasibility study.





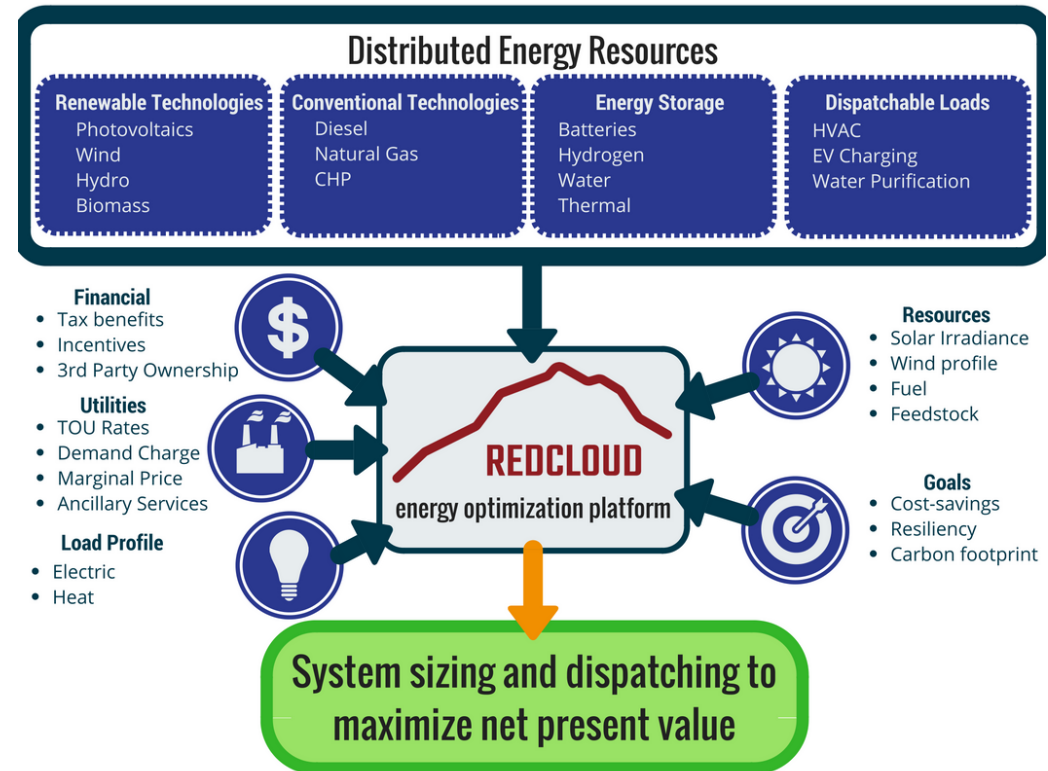
Analysis Process description

Load data from each site's eGauge was processed and analyzed at various intervals for determining the "worst case" loads. Historic invoice data was also used for this purpose, and inverter power capacities were chosen based on the highest actual and highest potential loads when comparing the eGauge load data to the historic maximums from the invoices. Load data was then converted to energy to determine battery energy needs for hours of resilient backup.



Redcloud Planning Platform

- muGrid proprietary and fully-customized in-house modeling and control platform
- Considers all technical and economic inputs
 - Site load
 - Desired technologies
 - Energy independence and net-zero
 - Economic conditions
- Sizes total system for the site
- Develops optimal dispatch strategy across multiple stacked revenue streams



Summary

Site	Solar Array Size (KWDC)	Battery Size (Kwh)	Yearly Solar Production (Kwh)	Historical Yearly Energy Consumption	Energy Consumption Offset %	Yearly Savings (\$)	Estimated Project Cost (\$)	Payback Period (yrs)
Public Works Building	62	123	76470	76640	100	TBD	372,060	TBD
Police Department	62	328	76510	91200	84	TBD	496,000	TBD
Fire Department	144	246	171800	158480	108	TBD	864,960	TBD
Wastewater Treatment Plant	430	1045	579900	924143	63	TBD	2,582,160	TBD
Main Lift Station	116	1400	151100	266256	57	TBD	924,320	TBD



Financing



- Cheq Bay Renewables for local support and guidance
- [Clean Energy Group Webinar resources](#) for how to fund projects
- State-level funding (e.g. Energy Innovation Grant Program - EIGP)
- Battery Investment Tax Credit



Site #1

City of Ashland
Public Works

Site	Solar Array Size (KWDC)	Solar Array Size (KWAC)	Battery Size (Kwh)	Battery Size (KW)	Yearly Solar Production (Kwh)	Historical Yearly Energy Consumption	Energy Consumption Offset %	Yearly Savings	Estimated Project Cost (\$)	Payback Period
Public Works Building	62	60	123	60	76470	76640	100	TBD	372,060	TBD
Solar Inverter			Sol-ark 30k							
Battery			Sol-ark L3 HV-40KWH-30K							





Utility Rate

Electric Utility	Xcel Energy
Meter No./ Premises No.	18138320 / 304500475
Rate Tariff	General TOD Service – Sec Schedule Cg-7
Customer Charge	\$42
Energy	Off Peak \$0.0619 / kWh On Peak \$0.0898 / kWh
Demand Charge	On Peak \$9.00 / kW Distribution \$3.00 / kW

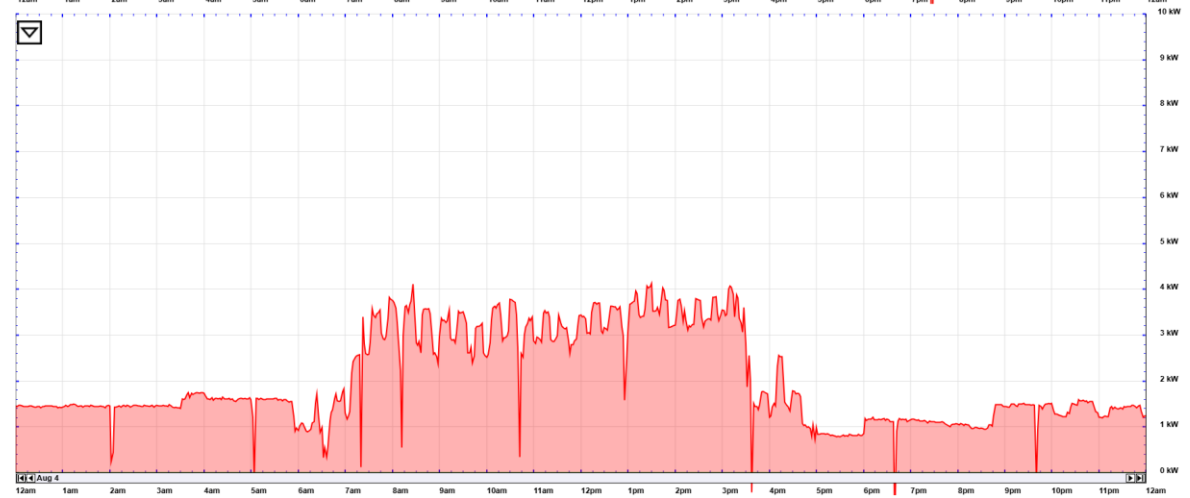
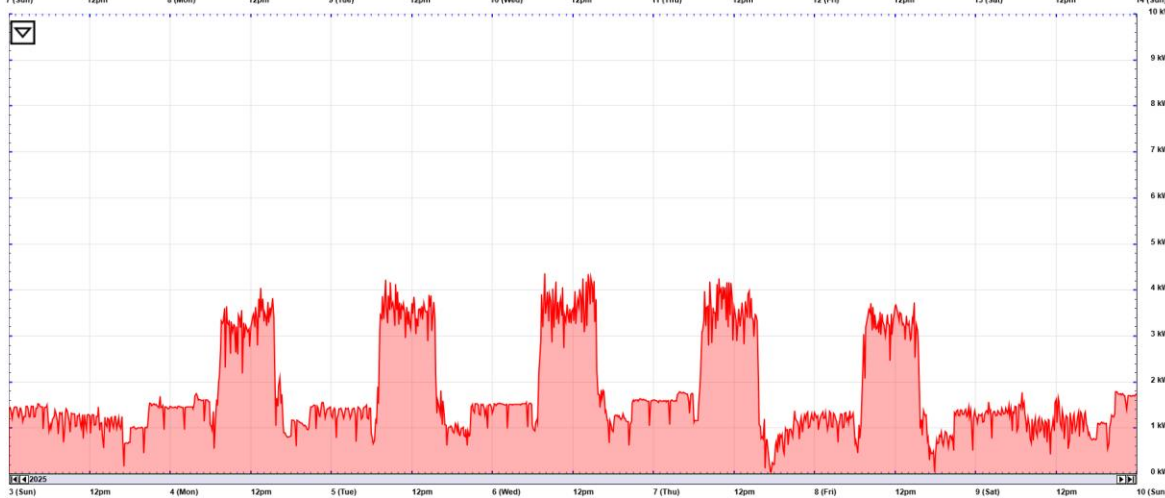
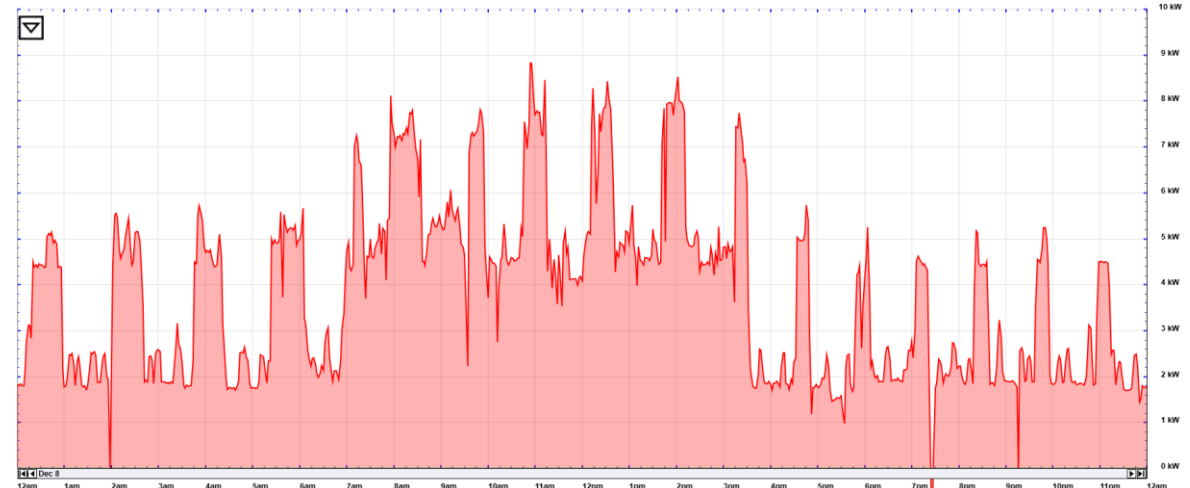
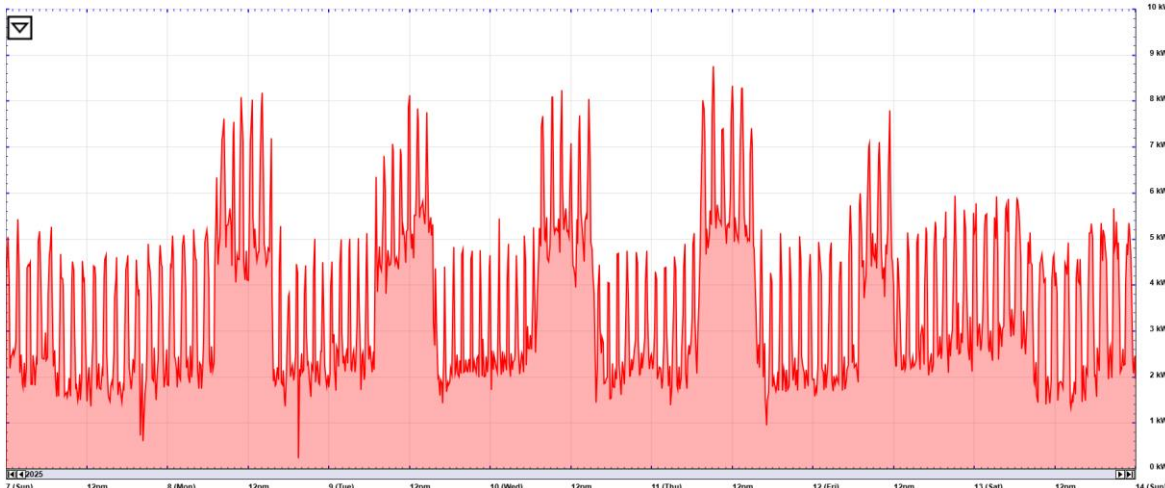




Load Profile

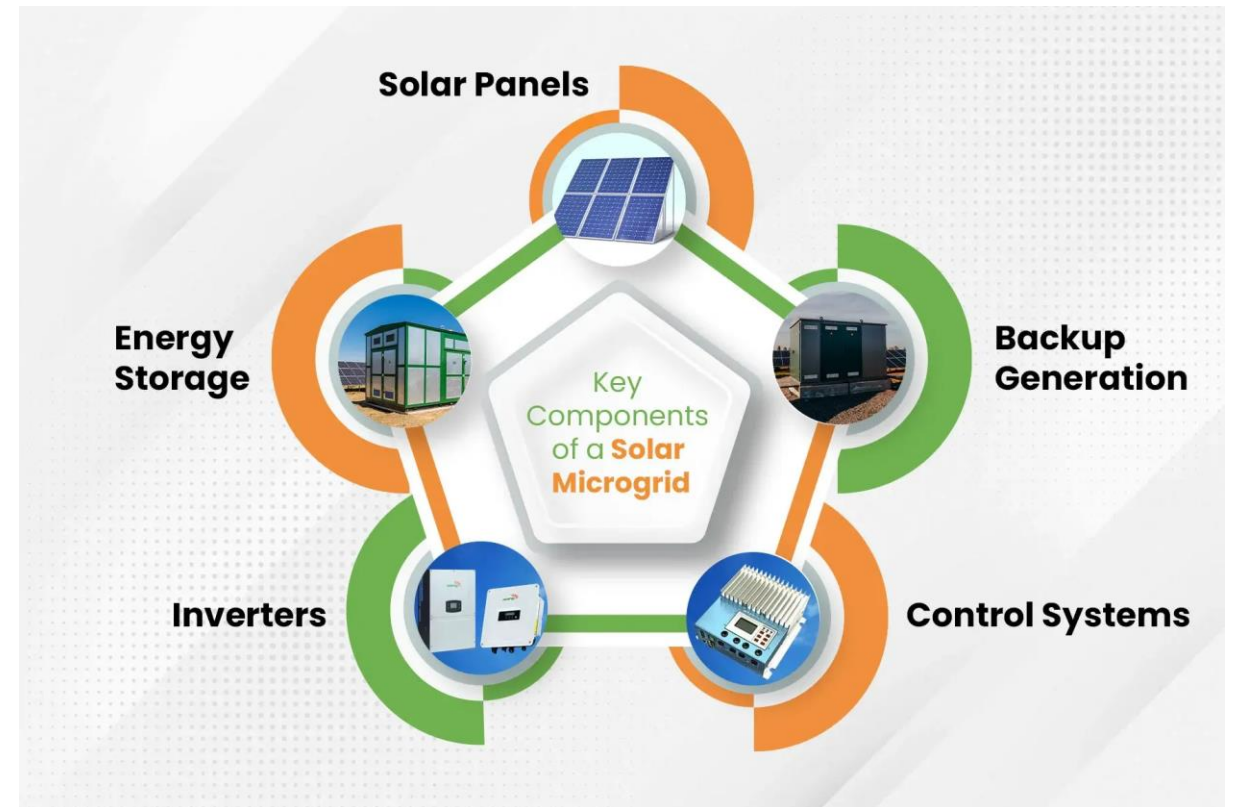
Winter Week 12/7-12/14
Summer Week 8/3-8/10

Winter Day 12/8
Summer Day 9/4



Microgrid Design

- (117) Bila 530W Monocrystalline Solar Panels
- (117) Tigo TS4-A-F Rapid Shutdown Devices
- (2) Sol-ark 30K three phase inverters
- (2) Sol-ark L3 HV-40KWH-30K Battery Racks
- Ironridge Ballasted Racking



Solar Layout



- (117) Bila Solar 530 Monocrystalline Solar Panels
- Ballasted Racking
- (2) Sol-ark 30K three phase inverters
- Tigo Rapid Shutdown 1:1 Devices



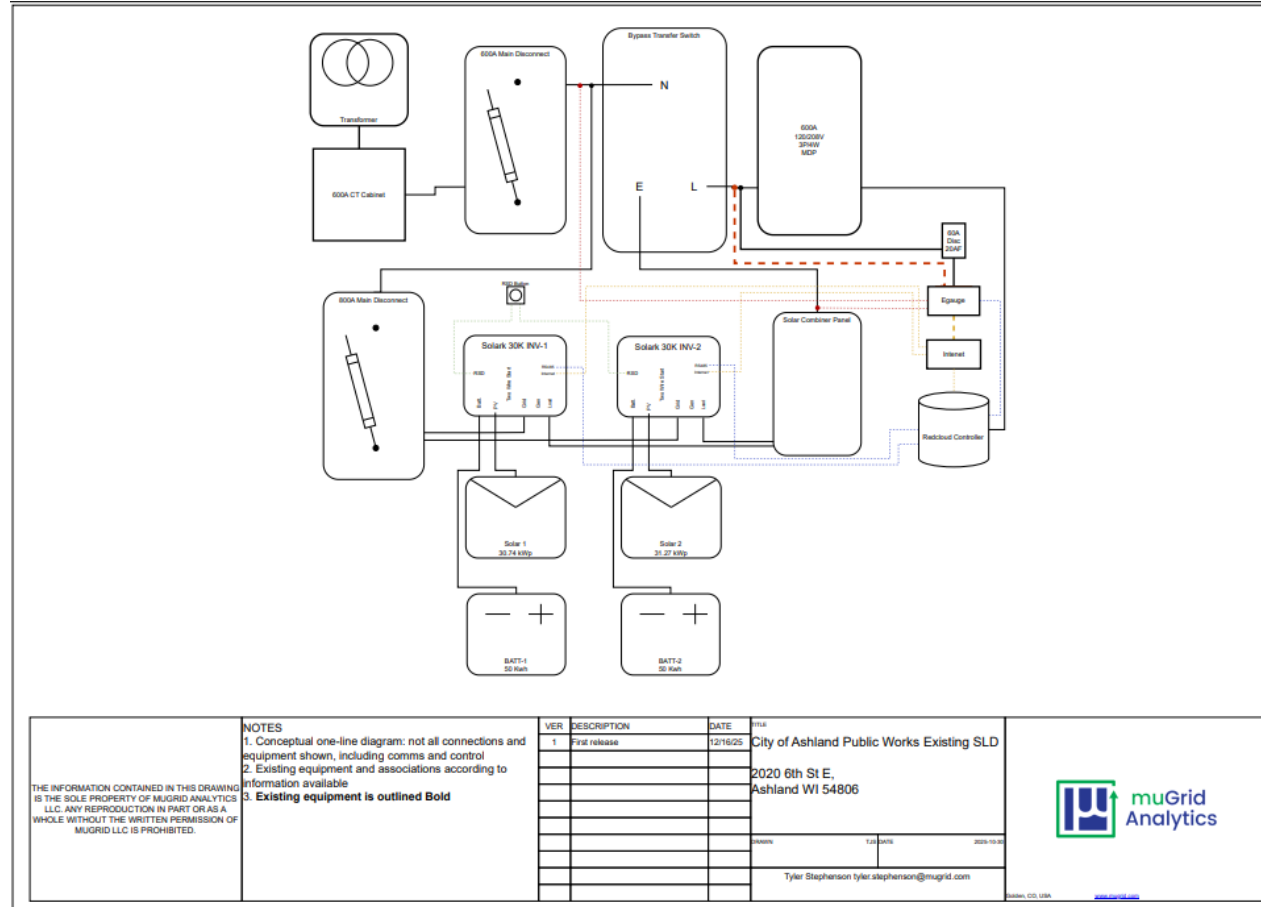
Battery Design



- (5) L3 HV-40KWH-30k Indoor Lithion Iron Phosphate Batteries (123 kWh Total)
- 40.96Kwh per battery stack
- Rack Dimensions 23x23x64 Inches
- Net Weight 1,384 lbs



One-line





Site #2

City of Ashland
Police Department

Site	Solar Array Size (KWDC)	Solar Array Size (KWAC)	Battery Size (Kwh)	Battery Size (KW)	Yearly Solar Production (Kwh)	Historical Yearly Energy Consumption	Energy Consumption Offset %	Yearly Savings (\$)	Estimated Project Cost (\$)	Payback Period (yrs)
Police Department	62	90	328	90	76510	91200	84	TBD	496,000	TBD
Solar Inverter			Sol-ark 30k							
Battery			Sol-ark L3 HV-40KWH-30K							



Utility Rate

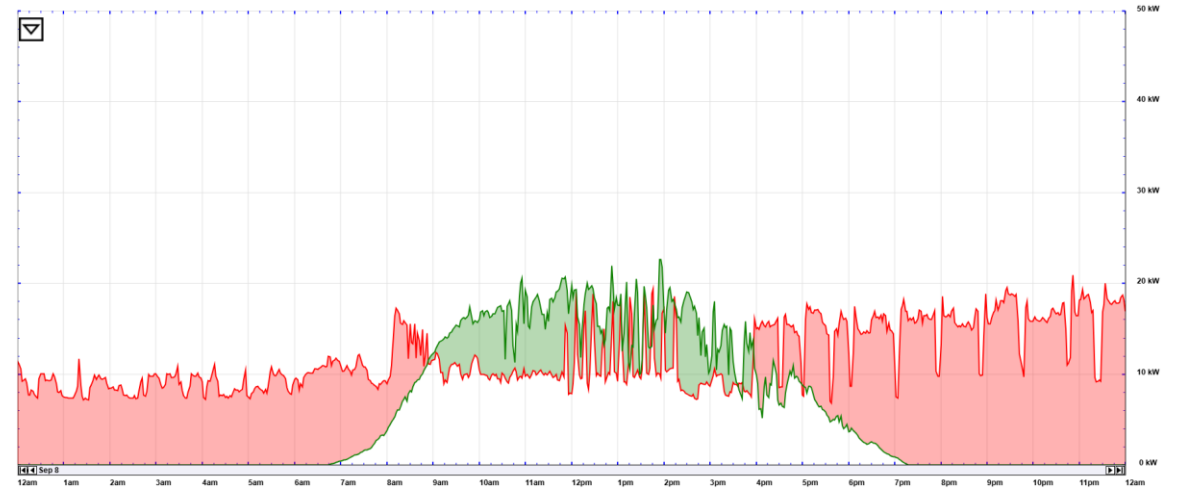
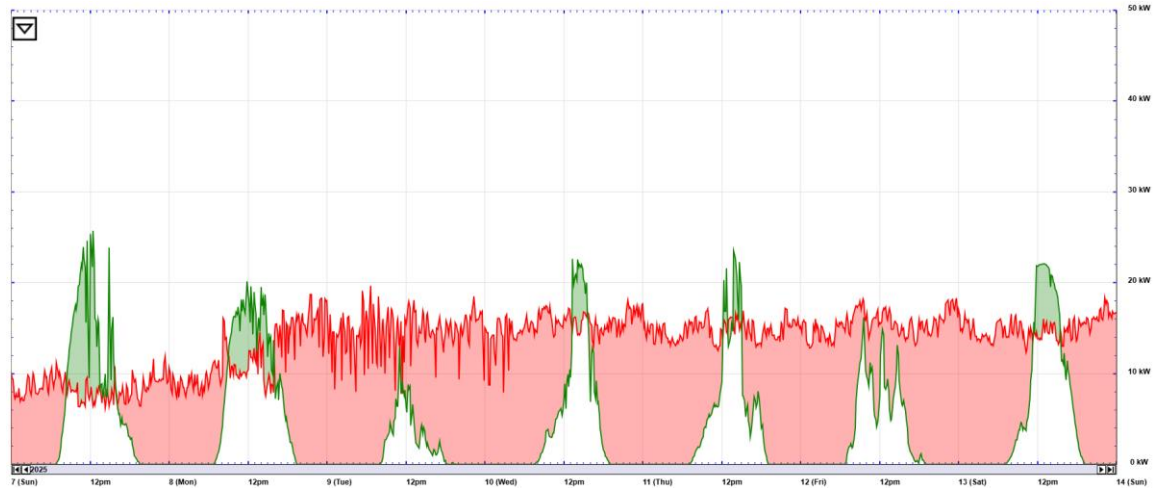
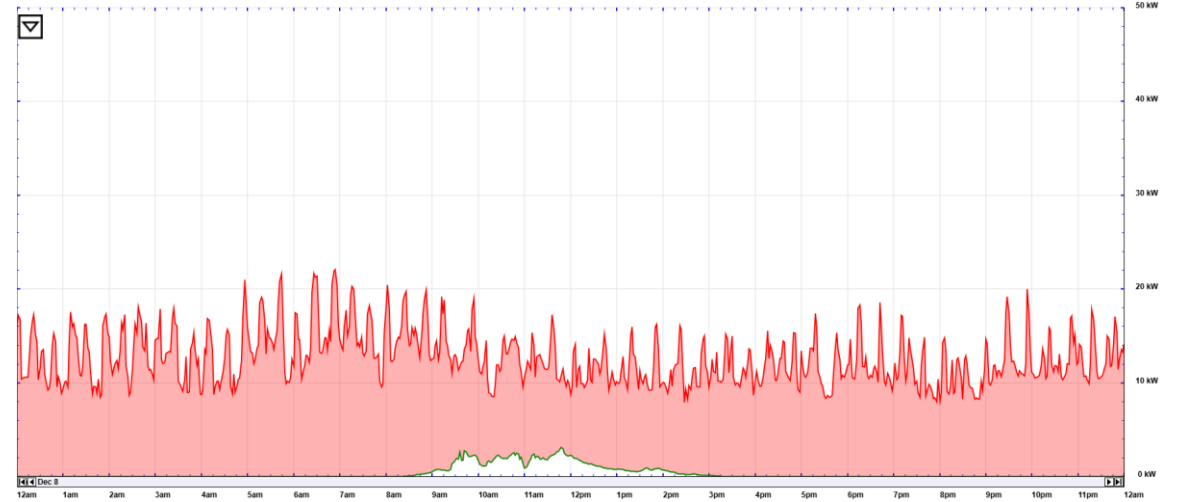
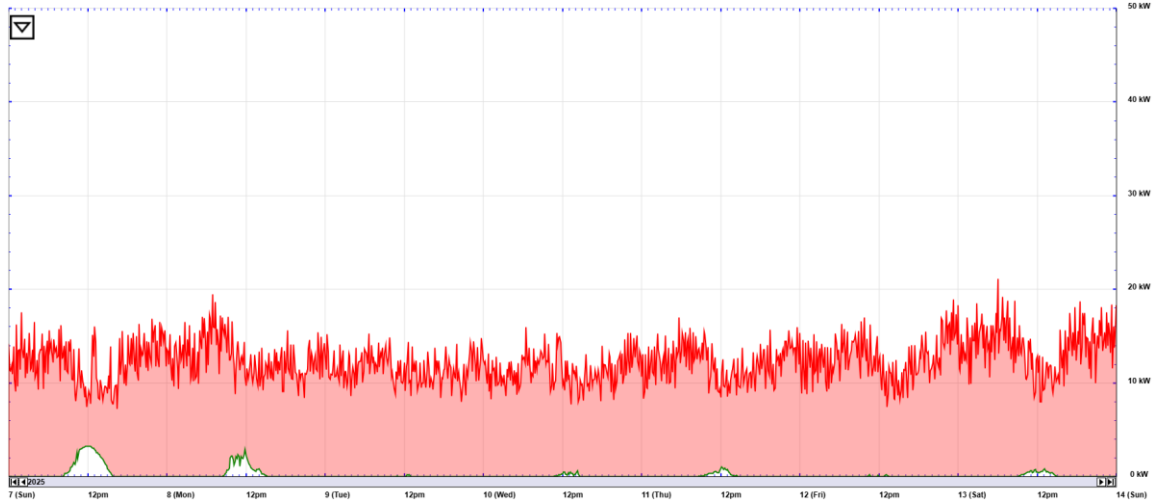
Electric Utility	Xcel Energy
Meter No./ Premises No.	19636868 / 304918222
Rate Tariff	General TOD Service – Sec Schedule Cg-7
Customer Charge	\$42
Energy	Winter Off Peak \$0.0619 / kWh Winter On Peak \$0.0898 / kWh Summer Off Peak \$0.0619 Summer On Peak \$0.0999
Demand Charge	On Peak \$9.00 / kW Distribution \$3.00 / kW



Load Profile

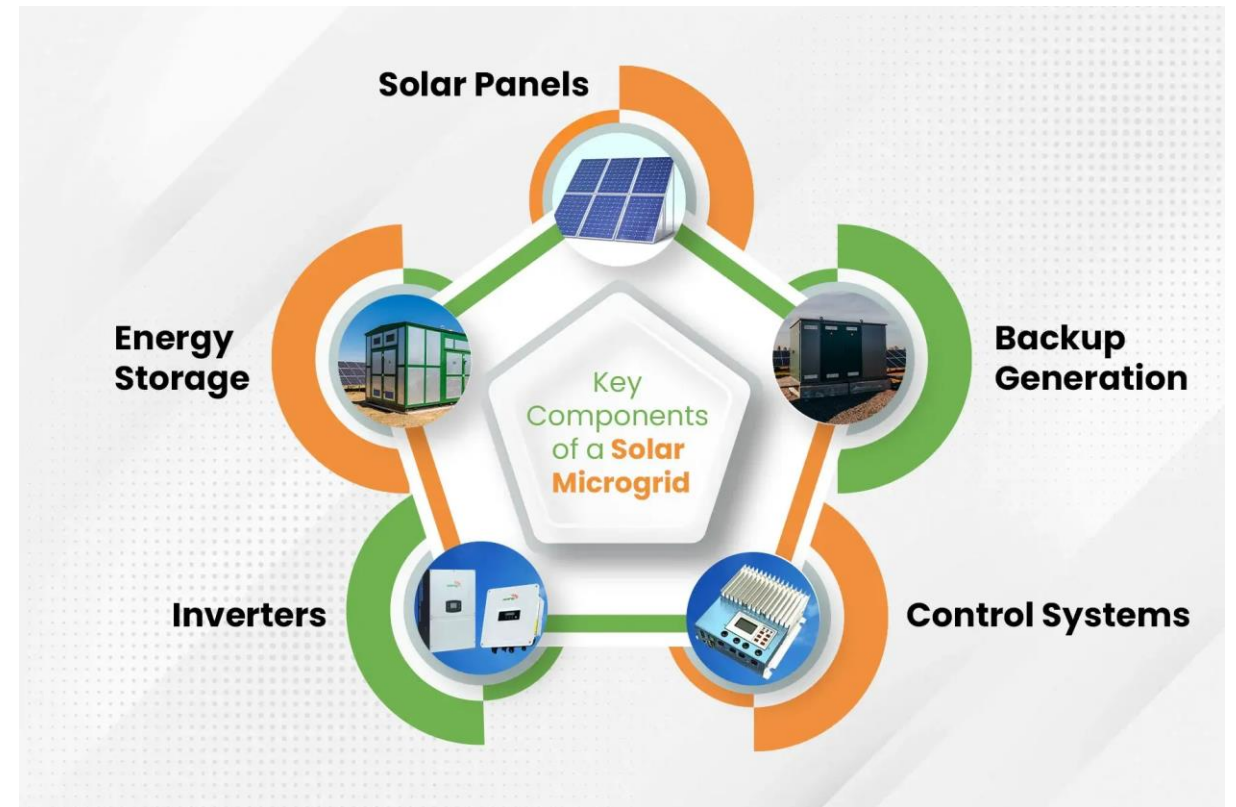
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Fall Week 9/7-9/14

Winter Day 12/8
Summer Day 9/8

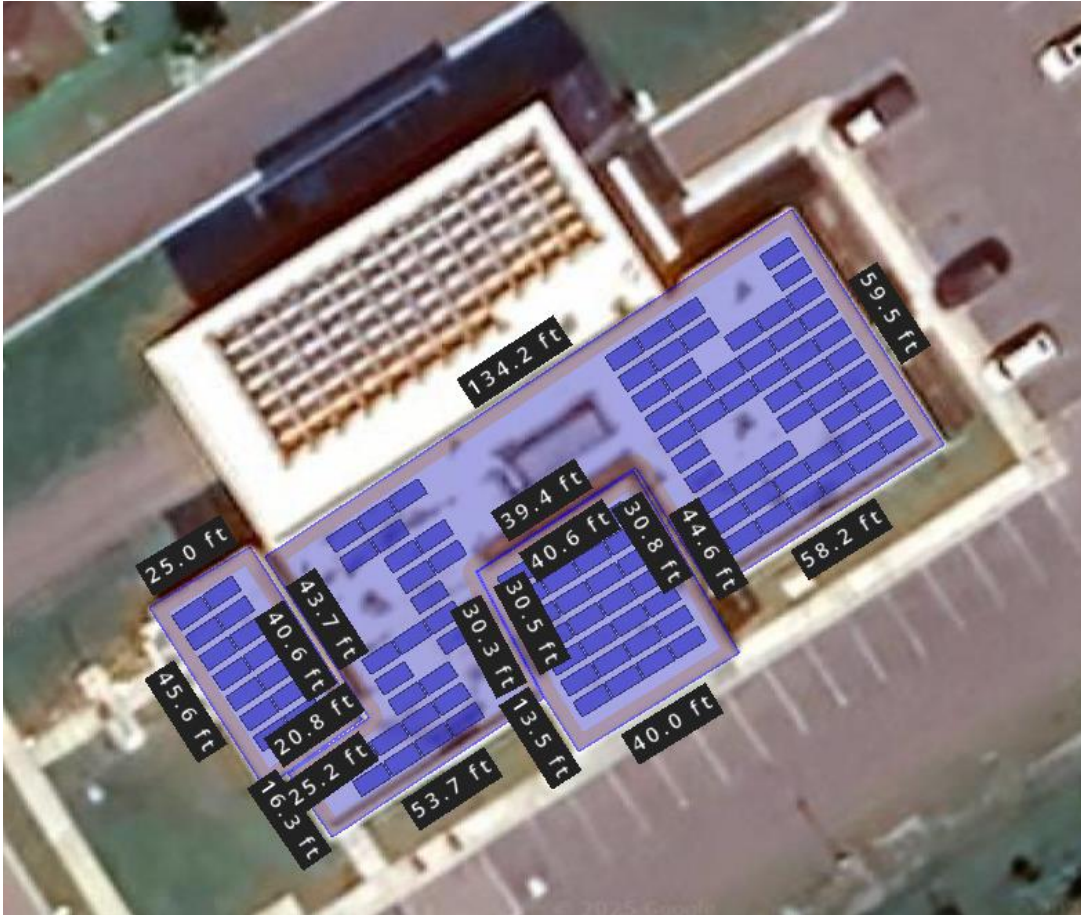


Microgrid Design

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Solar Layout



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- Ballasted Racking
- (3) Sol-ark 30K three phase inverters
- Tigo Rapid Shutdown 1:1 Devices



Battery Design



- (8) L3 HV-40KWH-30k Indoor Lithion Iron Phosphate Batteries (328 Kwh Total)
- 40.96Kwh per battery stack
- Rack Dimensions 23x23x64 Inches
- Net Weight 1,384 lbs





Site #3

City of Ashland
Fire Department

Site	Solar Array Size (KWDC)	Solar Array Size (KWAC)	Battery Size (Kwh)	Battery Size (KW)	Yearly Solar Production (Kwh)	Historical Yearly Energy Consumption	Energy Consumption Offset %	Yearly Savings (\$)	Estimated Project Cost (\$)	Payback Period (yrs)
Fire Department	144	160	246	90	171,800	158,480	108	TBD	864,960	TBD
Solar Inverter			Sol-ark 30k							
Battery			Sol-ark L3 HV-40KWH-30K							



Utility Rate

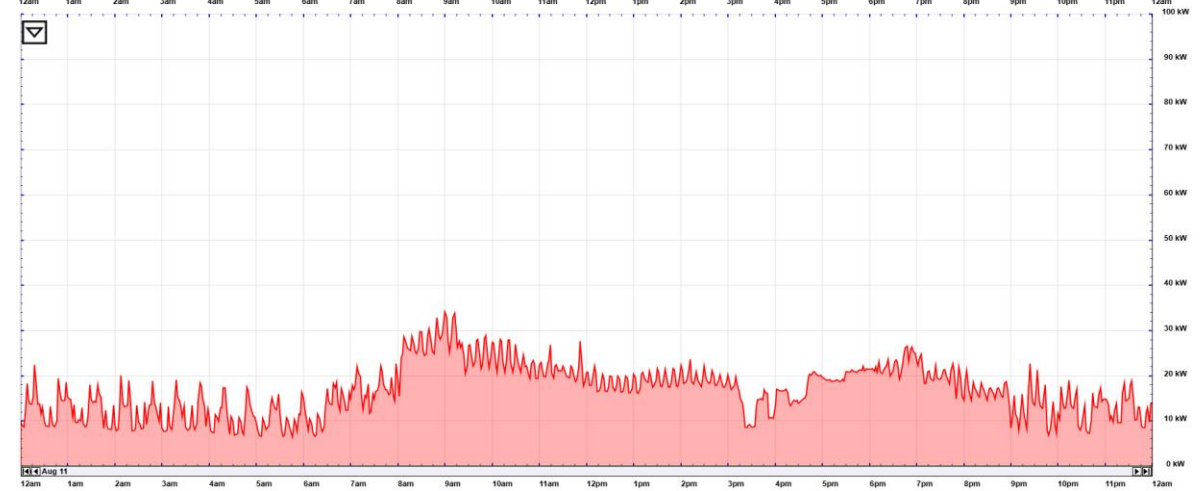
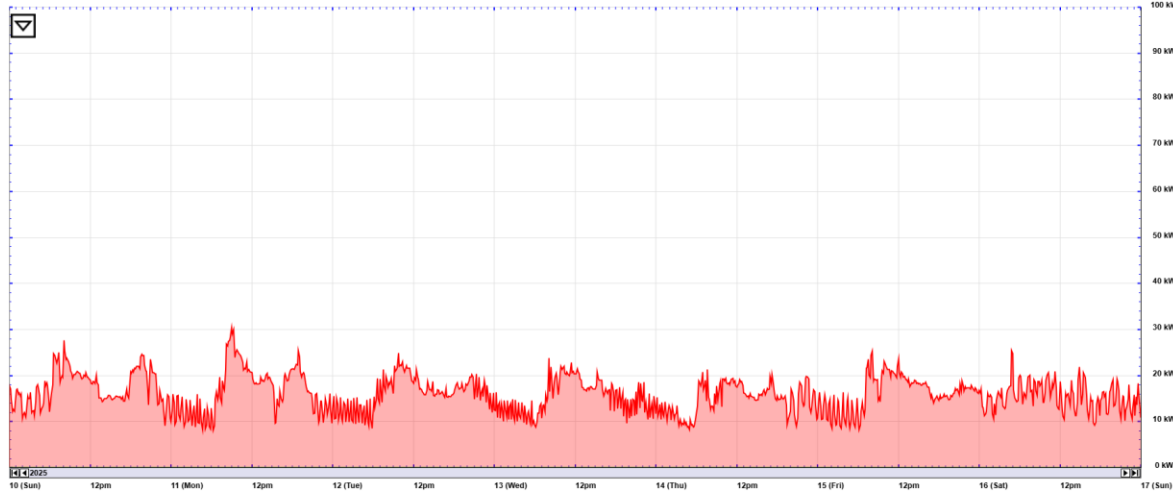
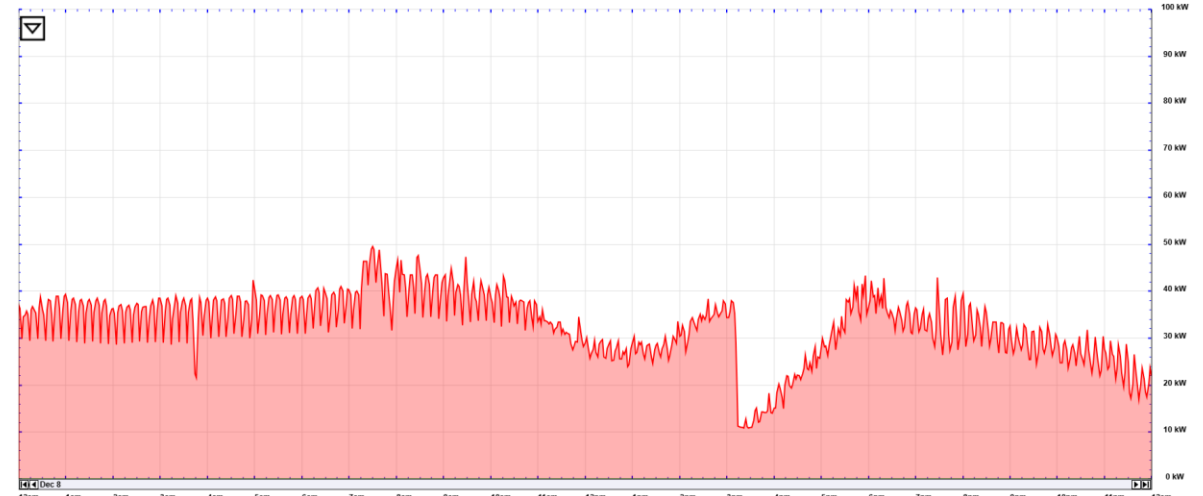
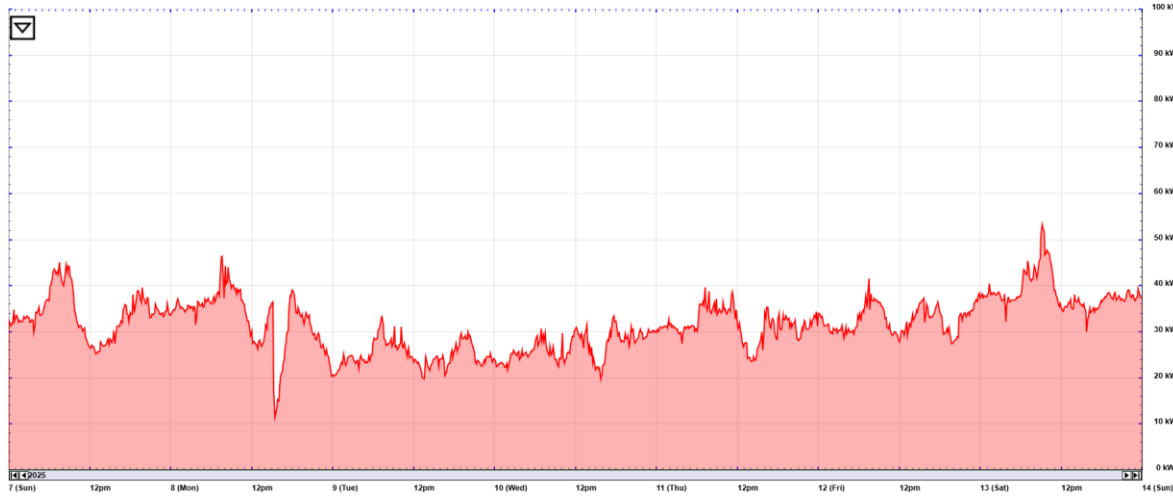
Electric Utility	Xcel Energy
Meter No./ Premises No.	18138320 / 304500475
Rate Tariff	General TOD Service – Sec
Customer Charge	\$42
Energy	Off Peak \$0.0619 / kWh On Peak \$0.0898 / kWh
Demand Charge	On Peak \$9.00 / kW Distribution \$3.00 / kW



Load Profile

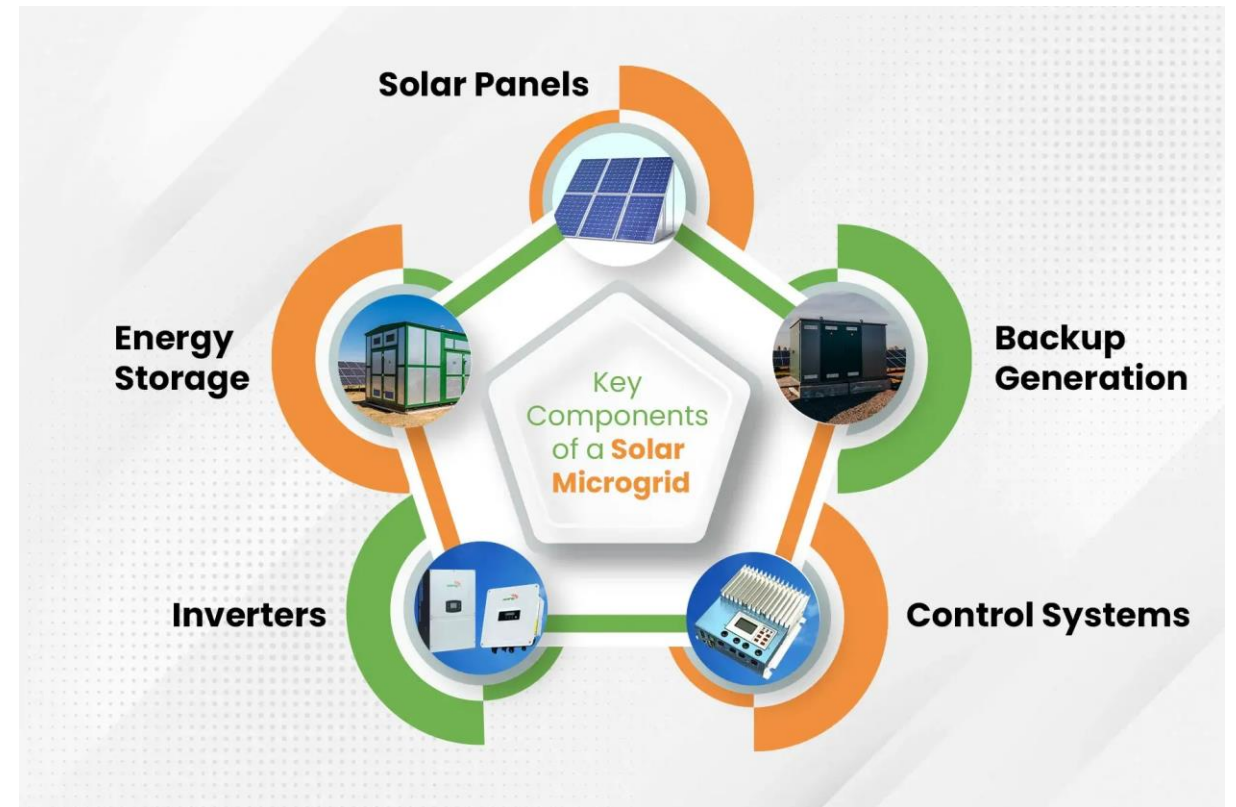
Winter Week 12/7-12/14
Summer Week 8/3-8/10

Winter Day 12/8
Summer Day 8/4



Microgrid Design

- (272) Bila 530W Monocrystalline Solar Panels
- (272) Tigo TS4-A-F Rapid Shutdown Devices
- (4) Sol-ark 30K three phase inverters
- (6) Sol-ark L3 HV-40KWH-30K Battery Racks
- Ironridge Ballasted Racking



Solar Layout



- (272) Bila Solar 530 Monocrystalline Solar Panels
- Ballasted Racking
- (4) Sol-ark 30K three phase inverters
- Tigo Rapid Shutdown 1:1 Devices



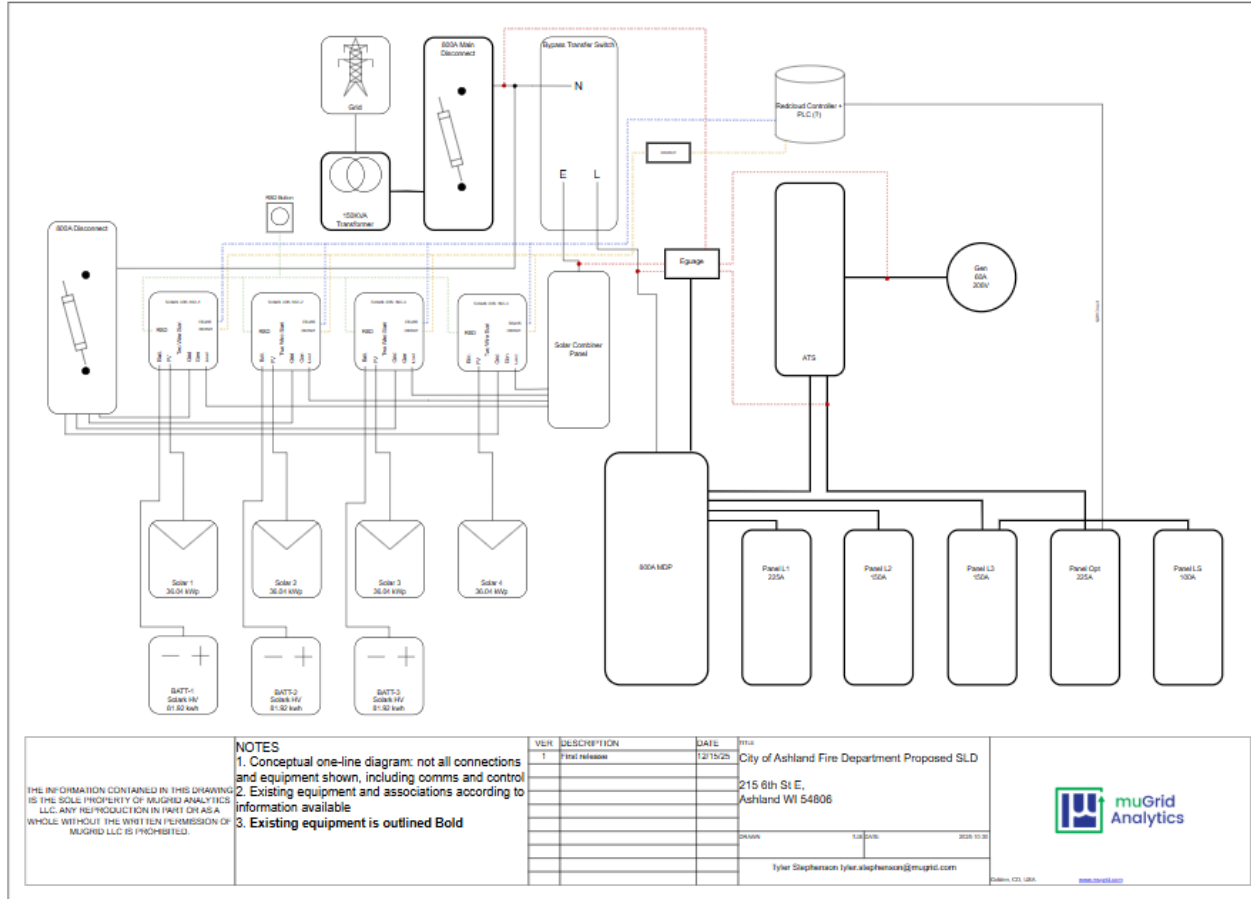
Battery Design



- (6) L3 HV-40KWH-30k Indoor Lithion Iron Phosphate Batteries (246 Kwh Total)
- 40.96Kwh per battery stack
- Rack Dimensions 23x23x64 Inches
- Net Weight 1,384 lbs



One-line





Site #4

City of Ashland
Wastewater Treatment Plant

Site	Solar Array Size (KWDC)	Solar Array Size (KWAC)	Battery Size (Kwh)	Battery Size (KW)	Yearly Solar Production (Kwh)	Historical Yearly Energy Consumption	Energy Consumption Offset %	Yearly Savings (\$)	Estimated Project Cost (\$)	Payback Period (yrs)
Wastewater Treatment Plant	430	360	1045	360	579,900	924,143	63	TBD	2,582,160	TBD
Solar Inverter			Sol-ark 60k							
Battery			Sol-ark L3 HV-60KWH-60K							



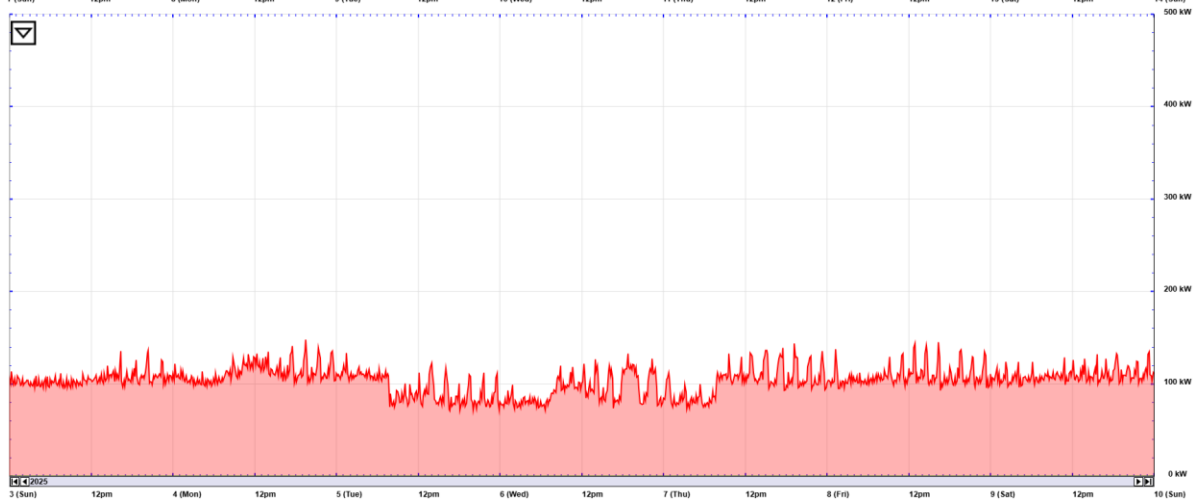
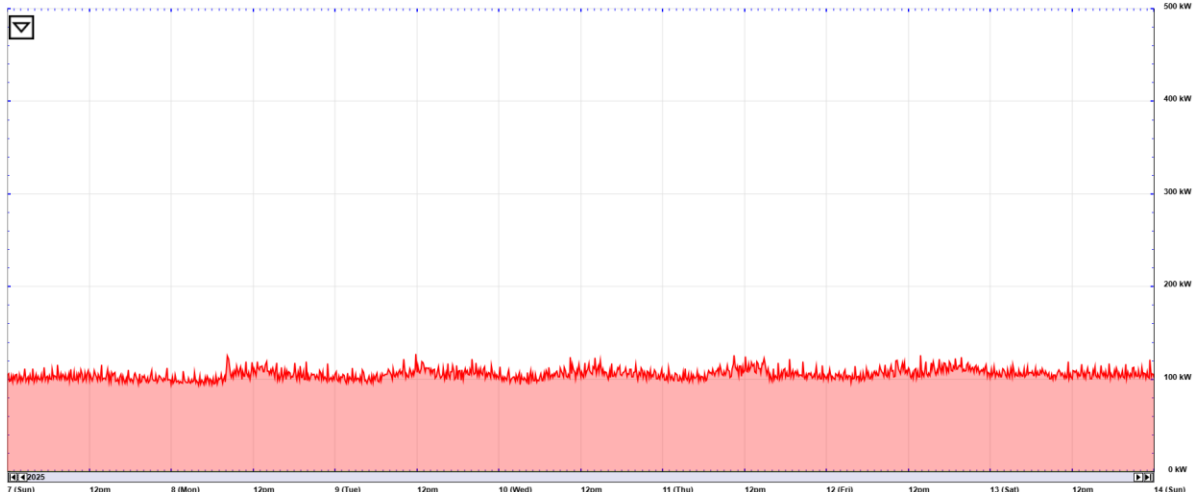
Utility Rate

Electric Utility	Northern States Power Company Xcel Energy
Meter No./ Premises No.	18480858 / 302152453
Rate Tariff	Peak Control TOD Service Cp-1
Customer Charge	\$180
Energy	Off Peak \$0.0881 / kWh On Peak \$0.0594 / kWh
Demand Charge	Firm On Peak \$11.00 / kW Control On Peak \$7.80 / kW Customer \$3.75 / kW
Power Factor Charge	\$11.00 / kW
Failure to Control	\$16.50 / kW

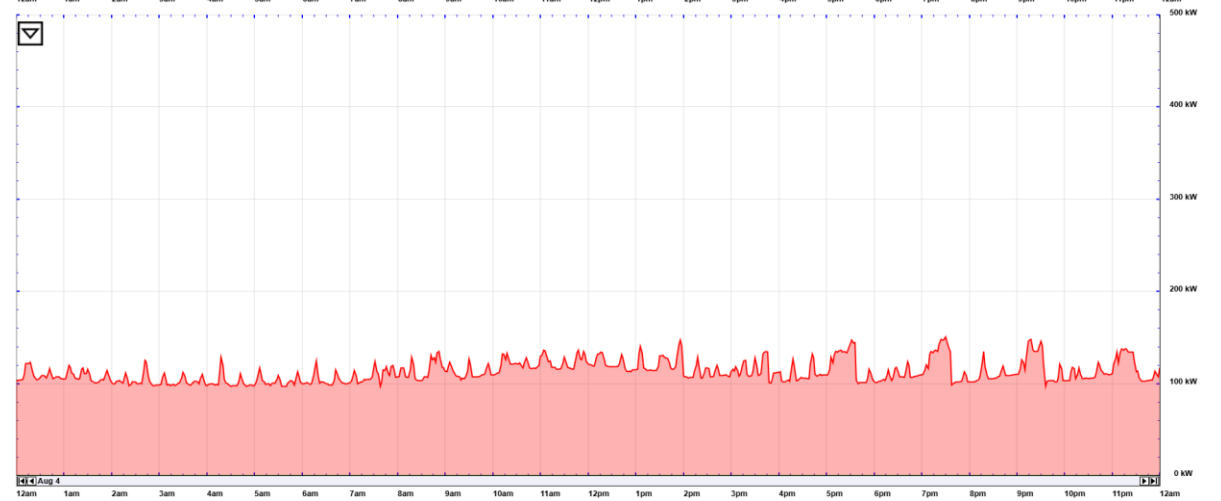
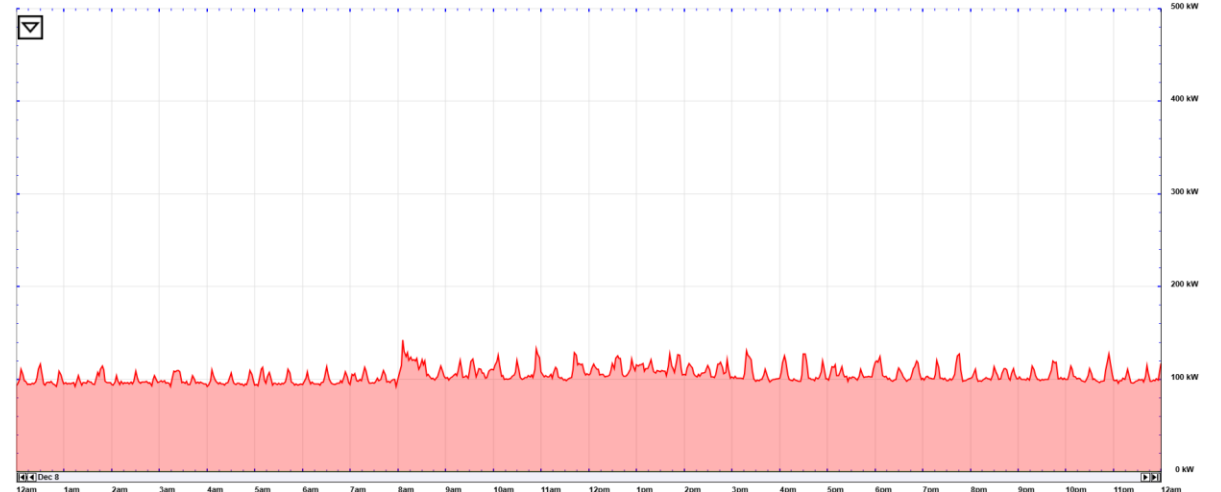


Load Profile

Winter Week 12/7-12/14
Summer Week 8/3-8/10

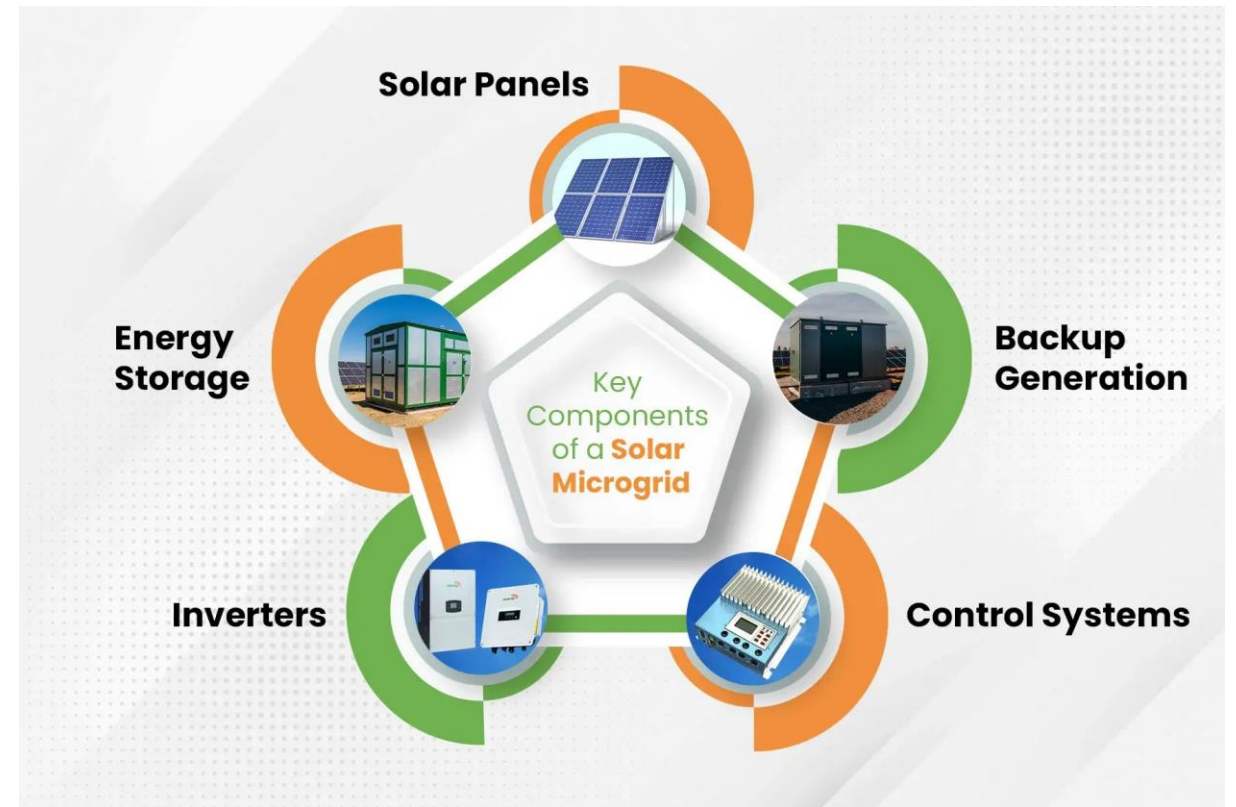


Winter Day 12/8
Summer Day 8/4



Microgrid Design

- (812) Bila 530W Monocrystalline Solar Panels
- (6) Sol-ark 60K three phase inverters
- (17) Sol-ark L3 HV-60KWH-60K Battery Racks
- Ground Mount Racking



Solar Layout



- (812) Bila Solar 530 Monocrystalline Solar Panels
- Fixed Ground Mount Racking set at a 40 degree tilt
- (6) Sol-ark 60K three phase inverters

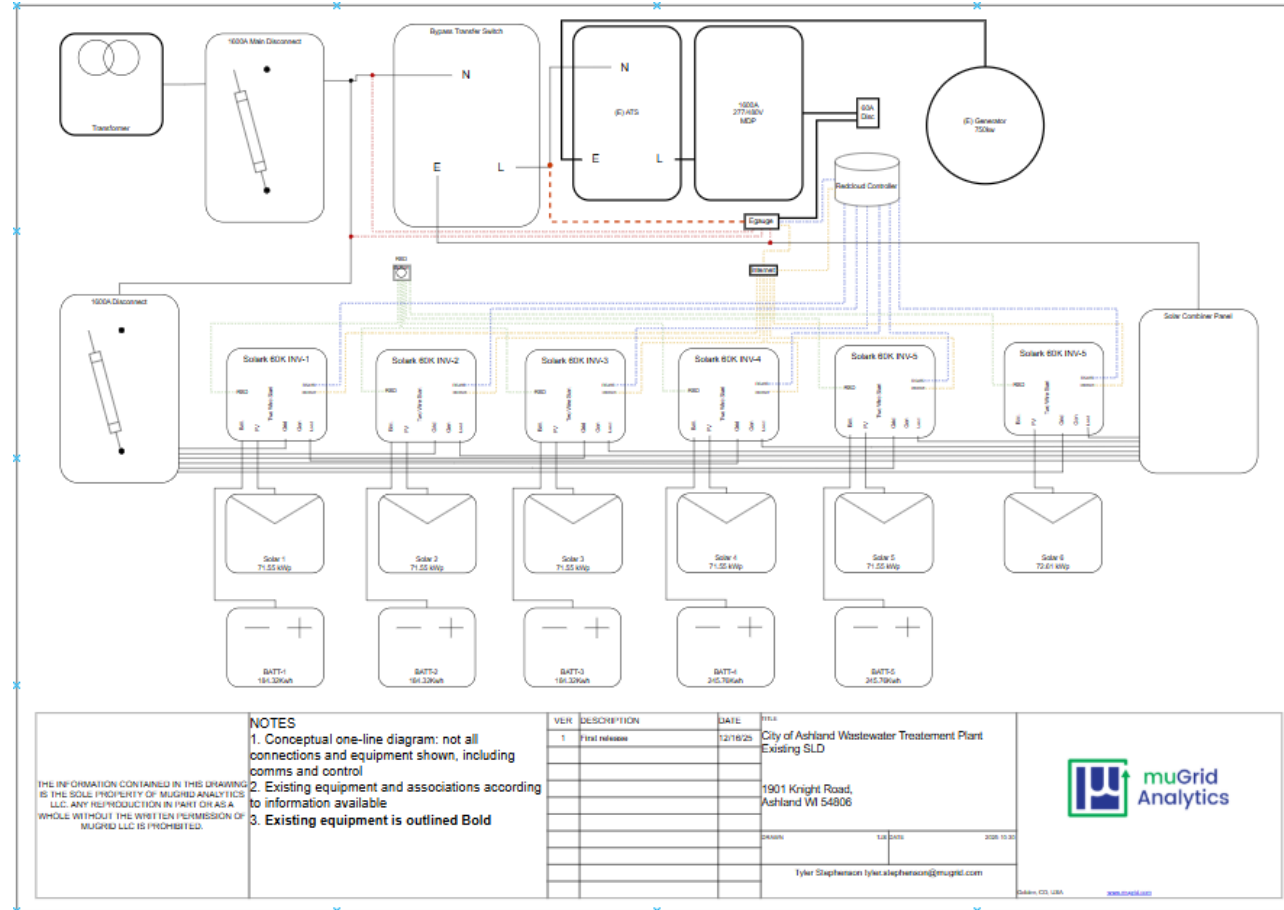
Battery Design



- (17) L3 HV-60KWH-60k Indoor Lithion Iron Phosphate Batteries (1045 Kwh Total)
- 61.44Kwh per battery stack
- Rack Dimensions 23x23x86 Inches
- Net Weight 1,705 lbs



One-line



NOTES

1. Conceptual one-line diagram: not all connections and equipment shown, including comms and control
2. Existing equipment and associations according to information available
3. Existing equipment is outlined Bold

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VER	DESCRIPTION	DATE	BY
1	Final release	12/16/23	

City of Ashland Wastewater Treatment Plant
Existing SLD
1901 Knight Road,
Ashland WI 54806

Revision: 1.00 DATE: 12/16/23

Tyler Stephenson tyler.stephenson@mugrid.com





Site #5

City of Ashland
Main Lift Station

Site	Solar Array Size (KWDC)	Solar Array Size (KWAC)	Battery Size (Kwh)	Battery Size (KW)	Yearly Solar Production (Kwh)	Historical Yearly Energy Consumption	Energy Consumption Offset %	Yearly Savings (\$)	Estimated Project Cost (\$)	Payback Period (yrs)
Main Lift Station	116	125	1400	750	151,100	266,256	57	TBD	693,240	TBD
Solar Inverter			SMA Sunny Highpower PEAK3 125-US							
Battery			Kronus							



Utility Rate

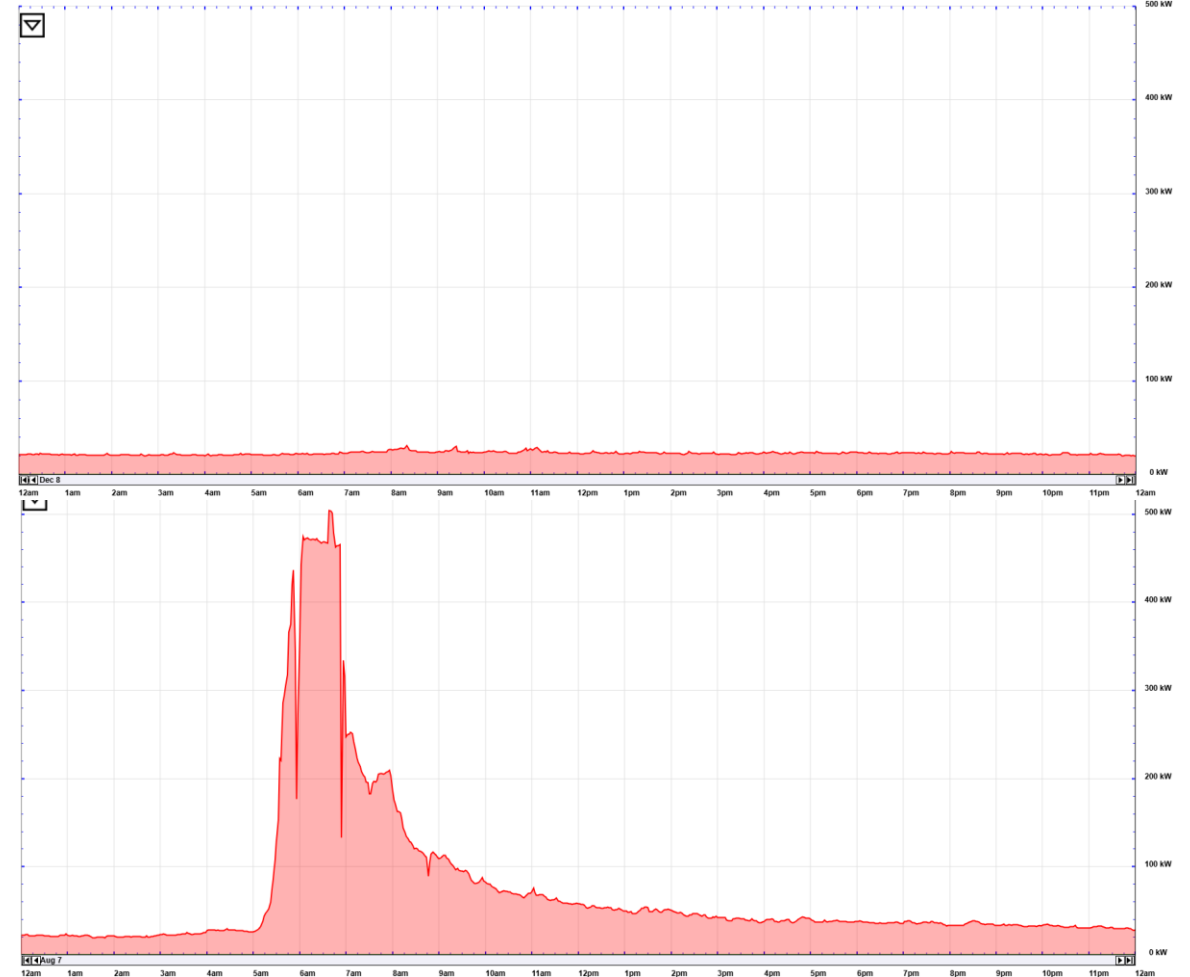
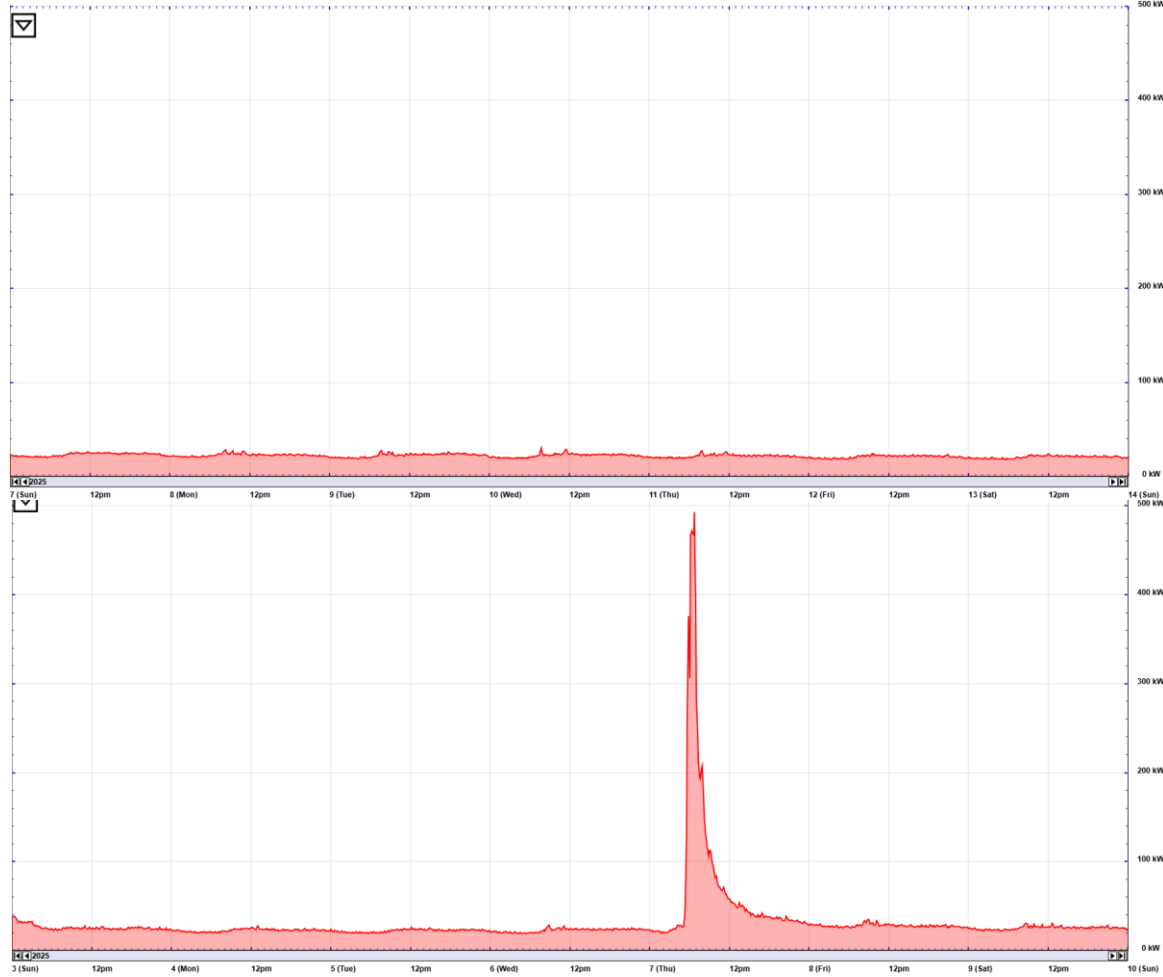
Electric Utility	Northern States Power Company Xcel Energy
Meter No./ Premises No.	18480863 / 302152769
Rate Tariff	Peak Control TOD Service Schedule Cp-1
Customer Charge	\$180
Energy	Off Peak \$0.0594 / kWh On Peak \$0.0881 / kWh Cost Adjustment \$0.00694 / kWh
Demand Charge	Firm On Peak \$11.00 / kW Control On Peak \$7.8 / kW Customer \$3.75 / kW
Power Factor Charge	\$11.00 / kW
Failure to Control	\$16.50 / kW



Load Profile

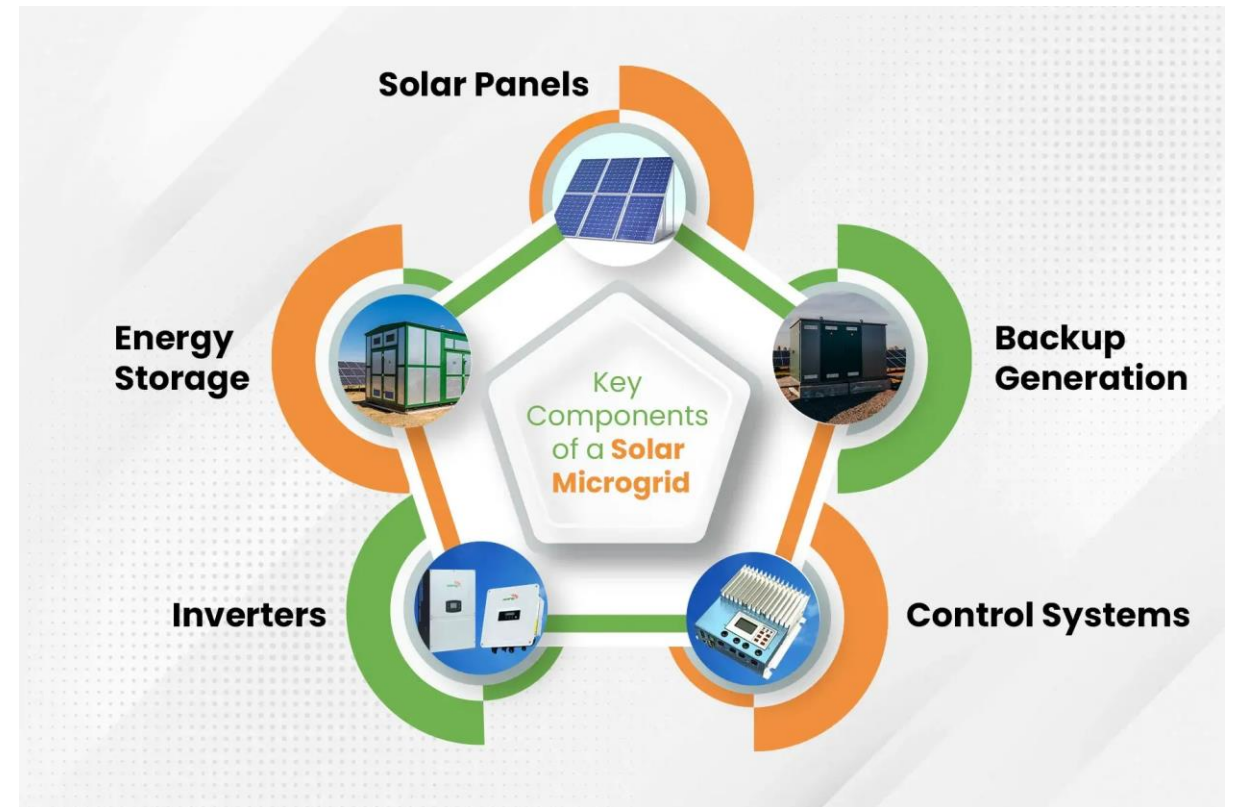
Winter Week 12/7-12/14
Summer Week 9/7-9/14

Winter Day 12/8
Summer Day 9/11



Microgrid Design

- (218) Bila 530W Monocrystalline Solar Panels
- (1) SMA Sunny Highpower PEAK3 125-US three phase inverter
- (1) Kronus Battery Container
- Ground Mount Racking



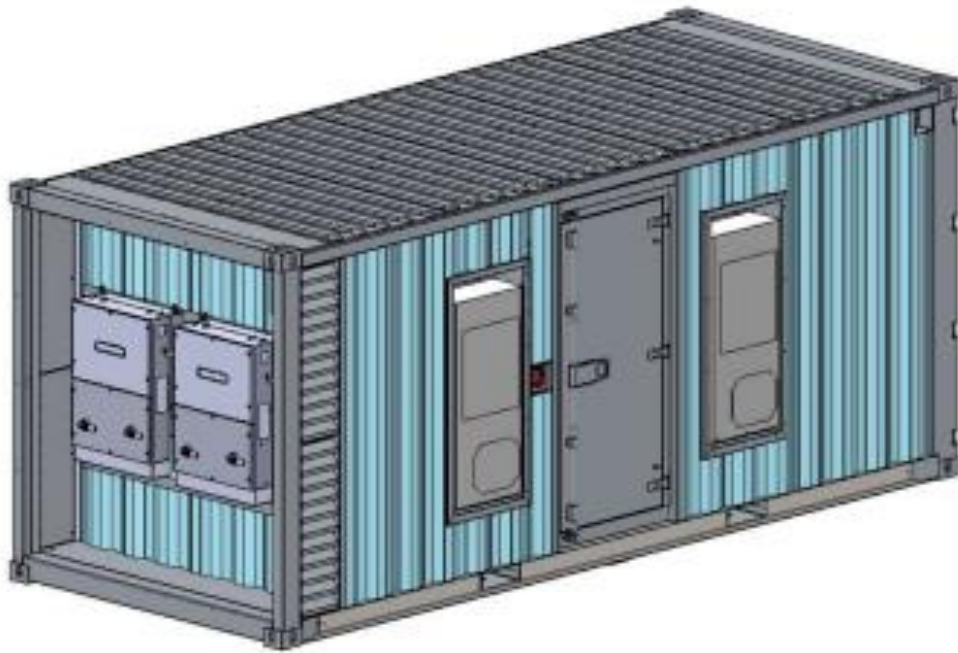
Solar Layout



- (218) Bila Solar 530 Monocrystalline Solar Panels
- Fixed Ground Mount Racking set at a 40 degree tilt
- (1) SMA Sunny Highpower PEAK3 125-US



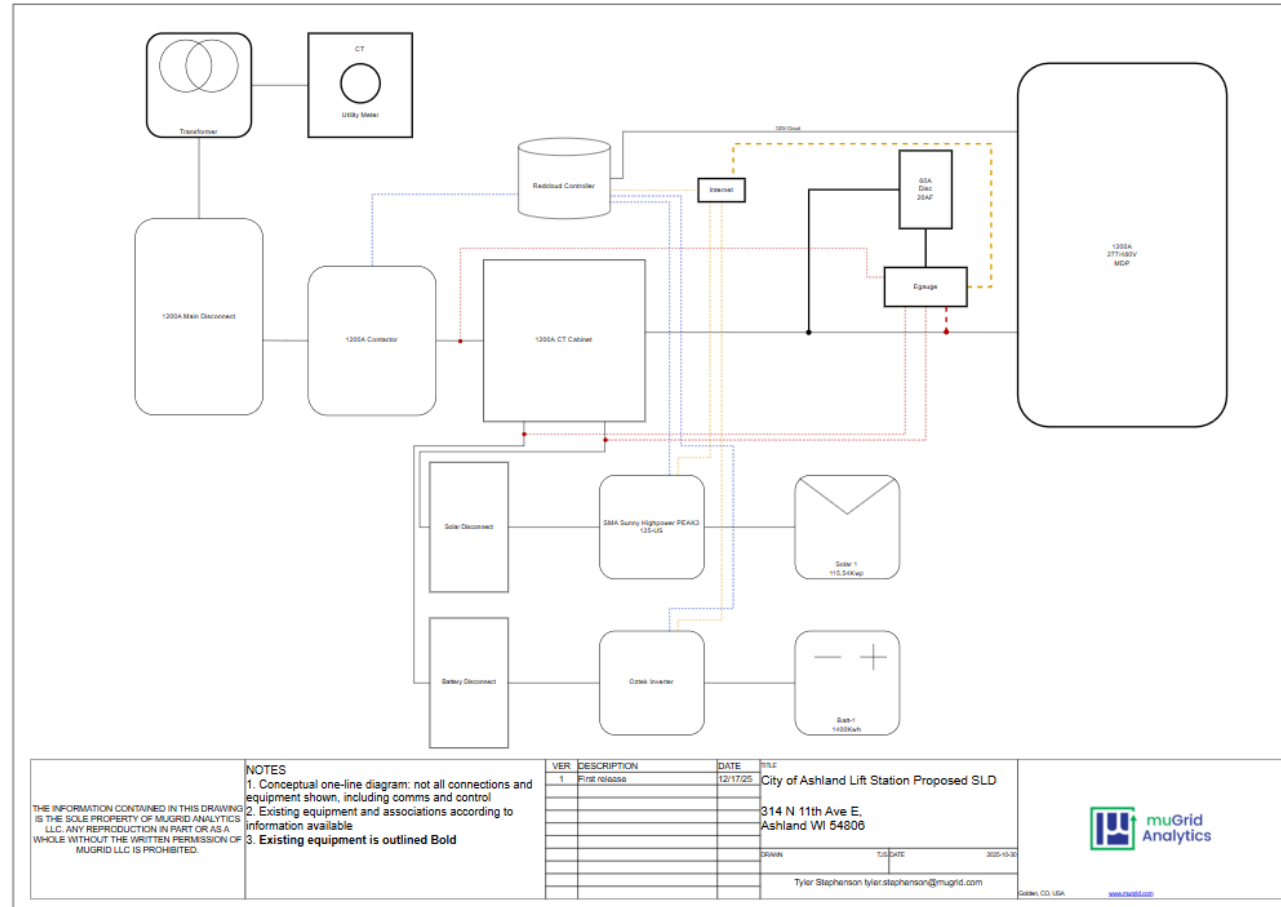
Battery Design



- (1) 1400Kwh Outdoor Kronus Battery
- 20'x12' Shipping Container
- Net Weight ~15,000lbs



One-line



Performance summary table

Site	Solar Array Size (KWDC)	Battery Size (Kwh)	Yearly Solar Production (Kwh)	Historical Yearly Energy Consumption	Energy Consumption Offset %	Yearly Savings (\$)	Estimated Project Cost (\$)	Payback Period (yrs)
Public Works Building	62	123	76470	76640	100	TBD	372,060	TBD
Police Department	62	328	76510	91200	84	TBD	496,000	TBD
Fire Department	144	246	171800	158480	108	TBD	864,960	TBD
Wastewater Treatment Plant	430	1045	579900	924143	63	TBD	2,582,160	TBD
Main Lift Station	116	1400	151100	266256	57	TBD	924,320	TBD



Survey of Local Projects

Existing Microgrids (Grant Funding)

- Bayfield County Jail/Courthouse Microgrid (EIGP)
- Bayfield County Highway Garage (EIGP)
- Bad River Wastewater Treatment Plant (DOE Tribal Energy)
- Bad River Administration Building (DOE Tribal Energy)
- Bad River Health Clinic (DOE Tribal Energy)
- Red Cliff Early Childhood Center

Future Microgrids (Grant Funding)

- Red Cliff Health Center (DOE/Energy for Rural Areas)
- Red Cliff Transportation Center (DOE/Energy for Rural Areas)
- Bad River Recycling Center (EPA/CPRG)
- Town of Washburn Garage/Town Hall (DOE/Energy for Rural Areas)
- Town of Port Wing Wastewater Treatment Plant (DOE/Energy for Rural Areas)
- Town of Grand View Town Hall/Fire Department/Garage (DOE/Energy for Rural Areas)



Survey of Local Projects Continued



How muGrid Can Help

Operations

- Redcloud EMS – fully featured microgrid control
- True intelligent control adapts to current and predicted future states
- Cloud-to-ground fusion architecture for high reliability plus maximum adaptivity
- DERMS-level support for multiple systems
- Performance verification and improvement of installed systems

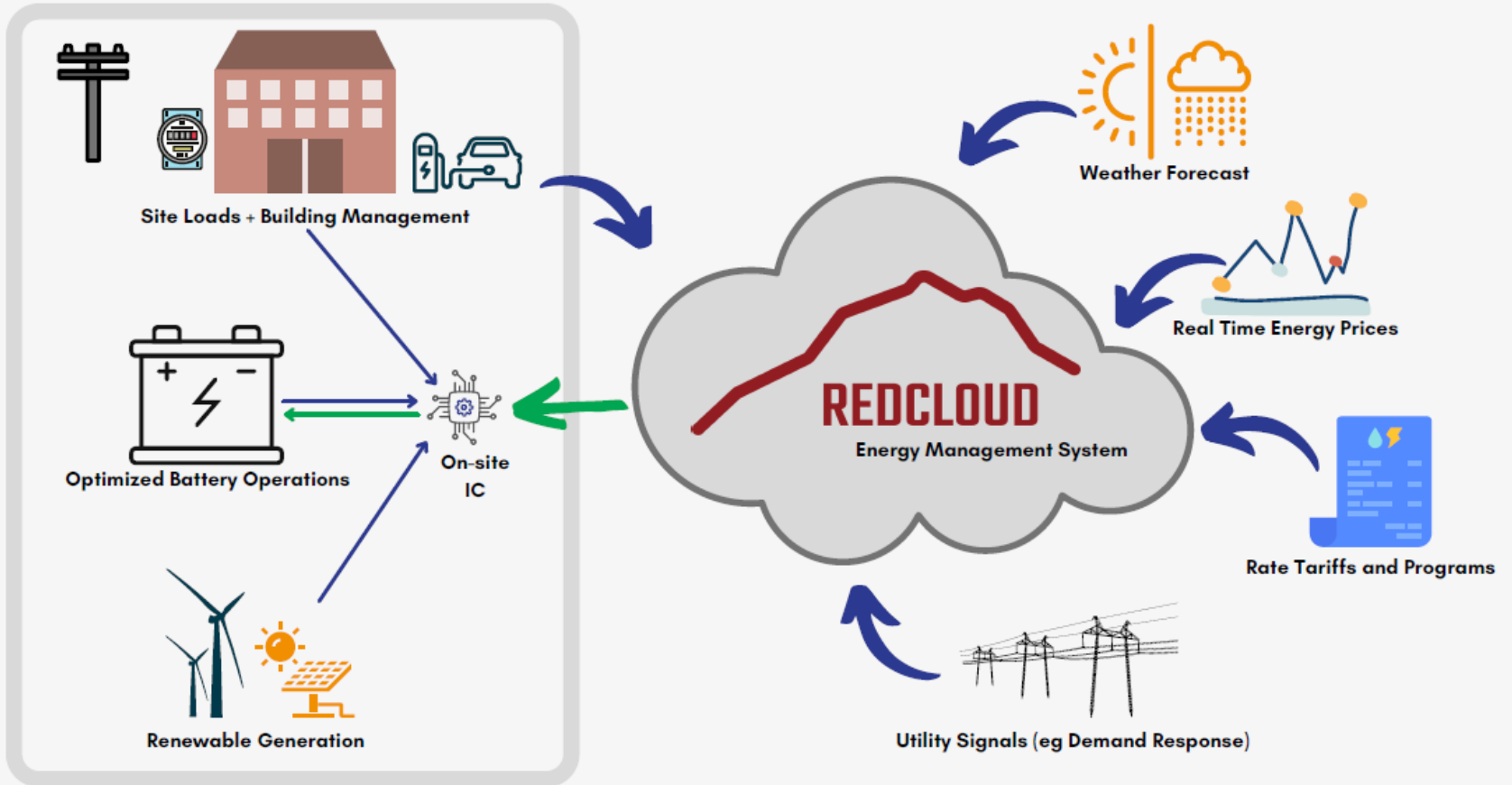
Design

- System-of-systems microgrid and communications architecture –“making it all work together”
- Optimized asset sizing and configuration
- Balance between economic, resilience, and sustainability requirements
- Project management support during implementation
- Feasibility studies
- Owner’s advisory services
- Customized consulting

Financing Support

- Investment-grade economic modeling
- Financial engineering for complex structures
- Data-backed grant applications
- Business case development
- Independent design validation

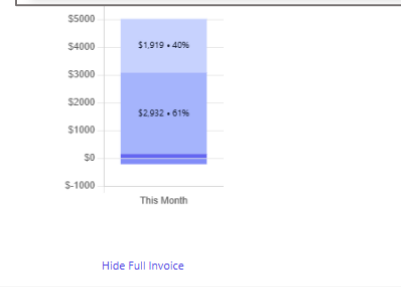
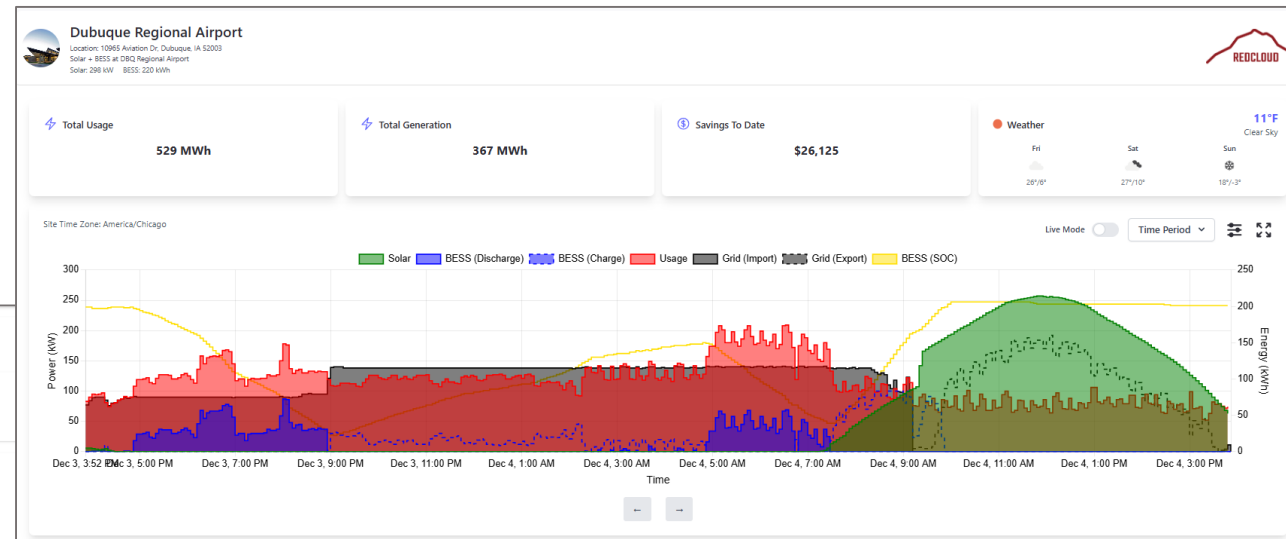
Redcloud EMS



What It Does

- Fully-featured microgrid controller
- Unlocks modeled performance and provides verification
- Optimizes operations of your energy equipment
- Uses predictive analytics techniques to anticipate what needs to happen next
- Provides real-time operating status via dashboard and notifications

myGrid.muGrid Dashboard



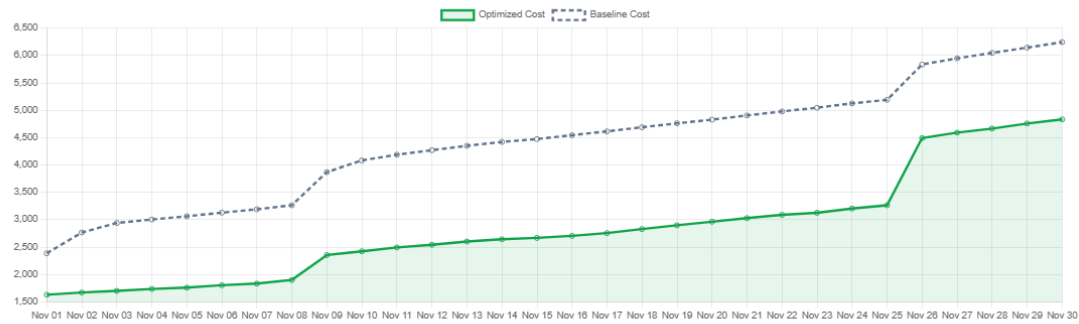
Real-time Performance

Final Bill
\$4833

Savings this period
\$1411

Demand (kW)
150 kW

Cumulative cost



Charges

Charge Type	Rate	Utility Bill (Current)	Utility Bill (Base Case)	Savings	Current Case	Base Case
Basic Service Charge	\$165.0	\$165	\$165	\$0 (0%)	0 kWh	0 kWh
On Peak Energy	¢4.2/kWh	\$453	\$519	\$66 (13%)	10752 kWh	12326 kWh
Off Peak Energy	¢4.2/kWh	\$1466	\$1806	\$340 (19%)	34787 kWh	42863 kWh
On Peak Demand	\$20.1/kW	\$2932	\$3754	\$822 (22%)	145.7 kW @ 11/26, 20:45	186.5 kW @ 11/26, 17:45
Off Peak Demand	¢0.0/kW	\$0	\$0	\$0 (0%)	150.1 kW @ 11/30, 06:00	170.9 kW @ 11/11, 06:15
Off Peak in excess of On Peak	\$5.0/kW	\$22	\$0	\$-22 (0%)	4.5 kW	-15.6 kW
Export Credit	¢2.8/kWh	\$-205	\$0	\$205 (0%)	-7333 kWh	0 kWh
Total		\$4833	\$6244	\$1411 (23%)		

