*** All present are expected to conduct themselves in accordance with our City's Core Values ***

OFFICIAL NOTICE AND AGENDA

Notice is hereby given that the Solar Array Task Force of the City of Wausau, Wisconsin will hold a regular or special meeting on the date, time and location shown below.

Meeting of the:	**SOLAR ARRAY TASK FORCE**
Date/Time:	**Thursday, April 18, 2024 at 5:00 p.m.**
Location:	**City Hall (407 Grant Street, Wausau WI 54403) - Board Room**
Members:	Chad Henke, John Robinson, Jay Coldwell, Paul Svetlik, Susan Woods

AGENDA ITEMS

1	Approval of Minutes from previous meetings (03/06/2024, 03/27/2024).
2	Presentation by Solar Electric Freedom
3	Presentation by QSTN and Clark Dietz on solar array options and payback period.
4	Discussion and possible action on funding options for borrowing/loans.
5	Discussion and possible action recommending a solar array location and project to the Wausau Water Works Commission.
6	Discussion and possible action on presentation for April 25 meeting and May 1 Public Information Meeting.
7	Adjourn

Signed by Chad Henke, Chairperson

This Notice was posted at City Hall, on the City of Wausau website, and sent to the Daily Herald newsroom on 04/12/2024 @ 9:30PM. Questions regarding this agenda may be directed to the City Clerk.

In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990 (ADA), the City of Wausau will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs or activities. If you need assistance or reasonable accommodations in participating in this meeting or event due to a disability as defined under the ADA, please call the ADA Coordinator at (715) 261-6622 or ADAServices@ci.wausau.wi.us to discuss your accessibility needs. We ask your request be provided a minimum of 72 hours before the scheduled event or meeting. If a request is made less than 72 hours before the event the City of Wausau will make a good faith effort to accommodate your request.


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FREEDOM

Who We Are

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SOLAR ELECTRIC FREEDOM

Areas of Focus

- **Business Goals.** Build a project that achieves the goals set by your business.
- **Reduce Energy Costs.** Ensure the project reduces your energy costs and makes economic sense.
- **Reduce Carbon Emissions.** Move towards more renewable and sustainable energy for future generations.
- **Maximize Tax Rebates & Incentives.** Research all incentives available to your business.

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Wausau Water Works

Project Summary

- **665.26 kW** Ground Mounted System covering 40% of current usage
- Producing **899,382 kWh per year**
- Includes all permits, labor, materials (solar panels, inverters, racking, wiring, conduit, etc.)
- 25 Year Linear Power Output Warranty

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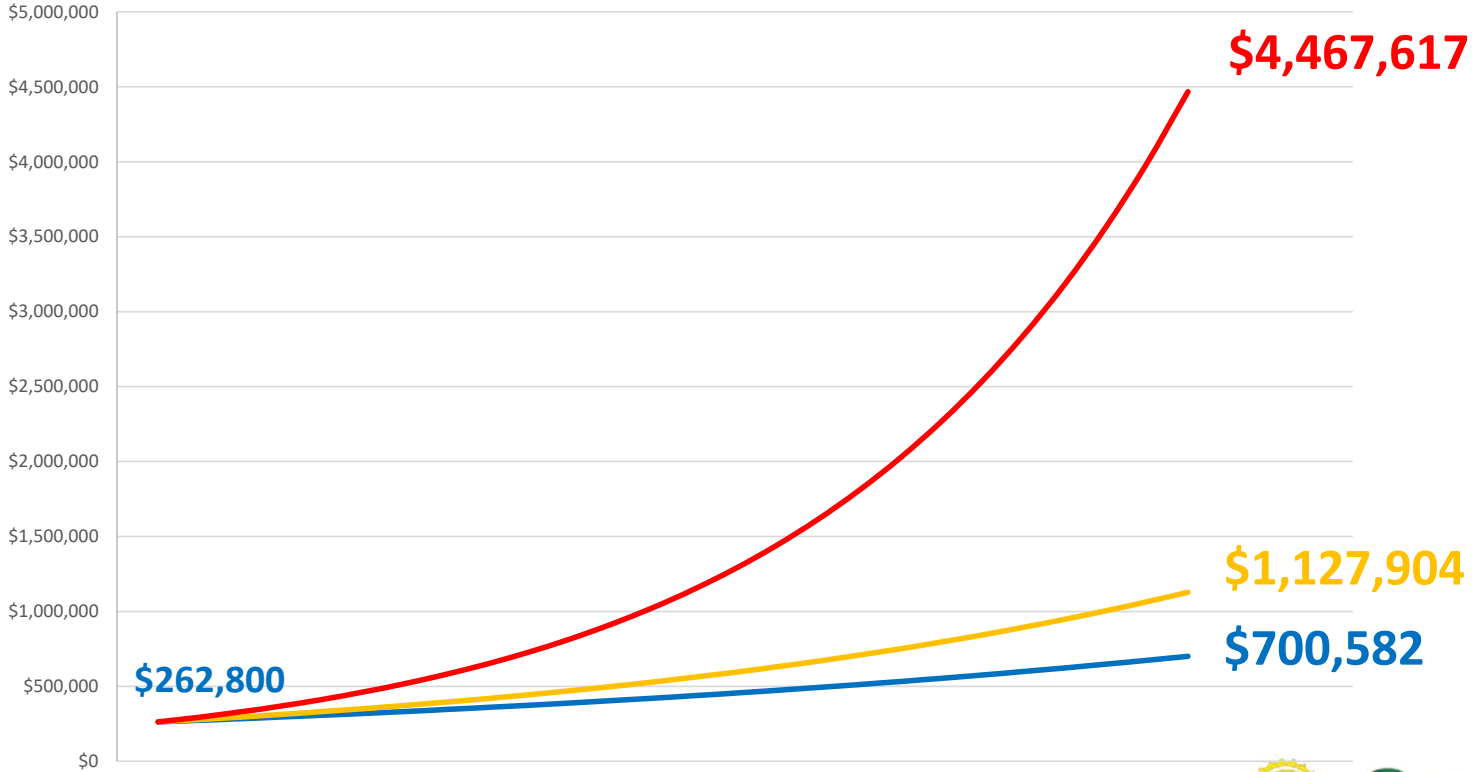
Current Yearly Bills



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SOLAR ELECTRIC FREEDOM

Solar4America 550W Modules

- Industry Leading commercial grade panels
- 25-year linear performance warranty
- Built for commercial applications with the industry's only dust protection rating
- Qualify for Domestic Content Federal ITC

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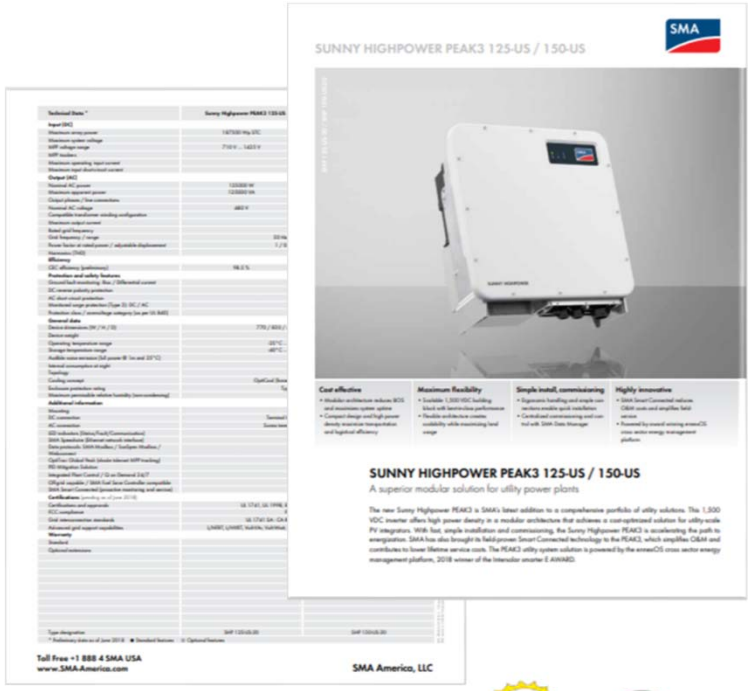
SOLAR ELECTRIC FREEDOM

SMA HighPower Peak3 125

- Commercial application solar inverter, built for the future
- 10 Year Warranty
- 24/7 Monitoring
- Plug & Play adaptability for future application



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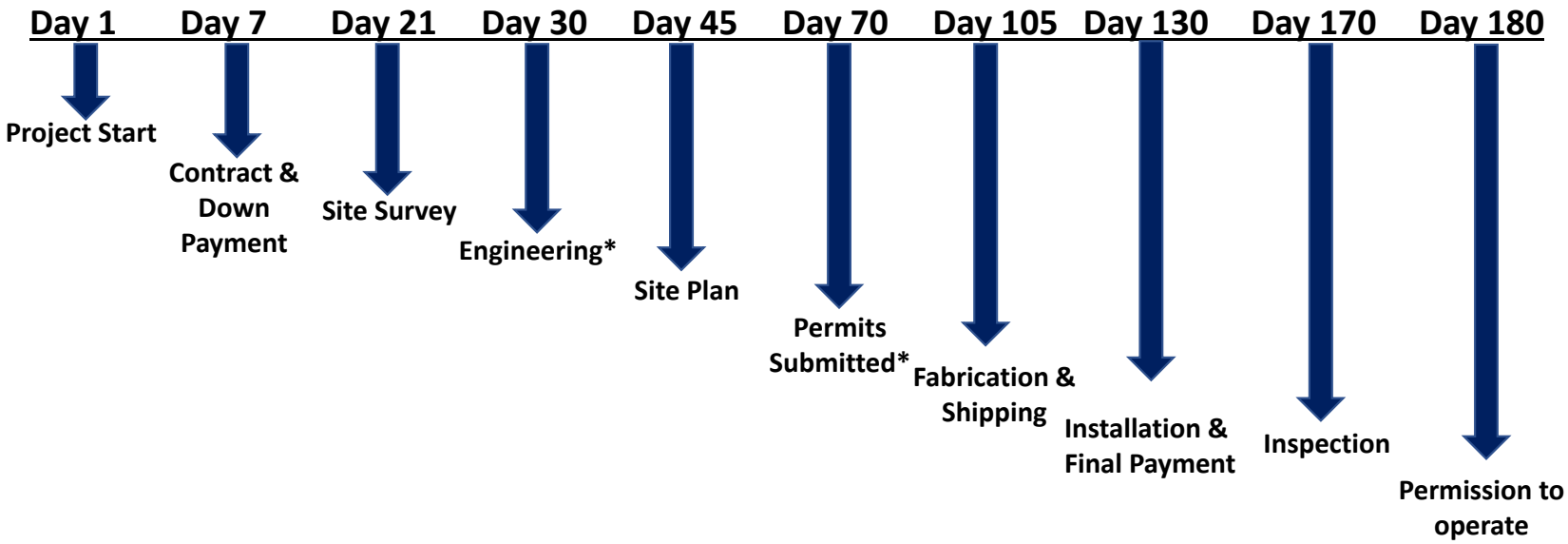
Project Timeline



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*Engineering and Permitting times may vary

SOLAR ELECTRIC FREEDOM

2024 Federal Investment Tax Credit at 30%

$685,246

*Inflation Reduction Act of 2022 allows Non-Profit Entities can receive the Federal ITC in Direct Pay

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FTIC for Domestic Content Incentive at 10%

- 10 % of the system cost for US made Panels

$228,415

*Direct pay for non-profits

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SOLAR ELECTRIC FREEDOM

Total Tax Savings

$685,246	Federal ITC at 30%
+$228,415	Domestic Content ITC at 10%
$913,661	**TOTAL Tax Savings**

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SOLAR ELECTRIC FREEDOM

Net Project Cost

$2,284,152 Total Cost

- **$913,661** Federal ITC @ 30%

$1,370,491 Cost after incentives

*Numbers based on cash deal with no financing

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Payment Options

Short Term

- 12 Month Bridge
- 24 Month Bridge
- 5 Year Amortization

Tax Solutions

- 7 Year Tax Lease
- 10 Year Tax Lease
- 15-30 Year PPA*

Longer Term

- 10 Year Financing
- 20-30 Year C-Pace*

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SOLAR ELECTRIC FREEDOM

Cashflow Analysis

- Total System Cost
  $2,284,152
- Incentives
  $913,661
- Net System Cost
  $1,370,491
- Projected Solar Production
  899,382 kWh/year
- Solar Coverage
  4**0%**
- Leftover Utility
  60%
- Utility Cost/kWh
  $0.12
- Annual Consumption
  2,190,000 kWh
- Annual Cost
  $262,800
- Utility % Annual Increase
  6%

Year	Utility Savings	Solar Payments	Utility Bill Offset	Cash Flow	Cumulative Cash Flow
1	$278,568	$1,370,491	$167,141	-$1,259,064	-$1,259,064
2	$295,282		$177,169	$118,113	-$1,140,951
3	$312,999		$187,799	$125,200	-$1,015,752
4	$331,779		$199,067	$132,712	-$883,040
5	$351,686		$211,011	$140,674	-$742,366
6	$372,787		$223,672	$149,115	-$593,251
7	$395,154		$237,092	$158,062	-$435,189
8	$418,863		$251,318	$167,545	-$267,644
9	$443,995		$266,397	$177,598	-$90,046
10	$470,635		$282,381	$188,254	$98,208
11	$498,873		$299,324	$199,549	$297,757
12	$528,805		$317,283	$211,522	$509,279
13	$560,534		$336,320	$224,213	$733,493
14	$594,166		$356,499	$237,666	$971,159
15	$629,815		$377,889	$251,926	$1,223,085
16	$667,604		$400,563	$267,042	$1,490,127
17	$707,661		$424,596	$283,064	$1,773,191
18	$750,120		$450,072	$300,048	$2,073,239
19	$795,128		$477,077	$318,051	$2,391,290
20	$842,835		$505,701	$337,134	$2,728,424
21	$893,405		$536,043	$357,362	$3,085,786
22	$947,010		$568,206	$378,804	$3,464,590
23	$1,003,830		$602,298	$401,532	$3,866,122
24	$1,064,060		$638,436	$425,624	$4,291,746
25	$1,127,904		$676,742	$451,161	$4,742,908
TOTAL	**$15,283,497**	**$1,370,491**	**$9,170,098**	**$4,742,908**	**$4,742,908**


How do we stack up?
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Cost Per Guaranteed kWh

When comparing the value of solar to the cost of energy from utility or even the value of solar from one company to another the best metric to look at is cost per guaranteed kWh.

Typical Solar Company

- A 665.26 kW system would generate about 19,374,665 kWh in its life span
- Costs **$_____** per kWh after incentives
- Take cost and divide by number of kWh (listed above) to get overall cost per kWh

BV Power/SEF

- Our system generates a guaranteed 21,527,406 kWh in its life span
- The system costs $1,370,941 after incentives
- $1,370,941/21,527,406 kWh results in **$0.064 per kWh**
- This includes all costs involved

WPS

- Unlimited number of kWh
- Current rates at **$0.12 per kWh**
- Yearly increases in costs

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SOLAR ELECTRIC FREEDOM

Technology

BV Power/SEF

- Commercial grade panels and inverter built to withstand the toughest conditions
- Tier 1 equipment
- Built to last many years longer than standard system
- Minimal linear degradation, leading to more power over time

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Other Guys

- Standard residential panels and inverters
- Tier 1 equipment
- Industry standard lifespan and standard linear degradation

SOLAR ELECTRIC FREEDOM

Experience

BV Power/SEF

- Focused on overall goals of customer
- In-depth knowledge on demand charge and how to offset
- Partnered with Solar Electric Freedom who is NABCEP certified and been in business for 23+ years
- Relationships and knowledge with USDA to maximize all programs and benefits available

Other Guys

- Mostly residential experience and apply best practices for commercial applications
- Deal focused

Warranties

BV Power/SEF

- 25 Years on Production
- 10 Years on Inverter
- 10 Year Workmanship Warranty

Other Guys

- Up to 20 Years on Production
- Up to 10 Years on Inverter
- 1 Year Workmanship Warranty

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SOLAR ELECTRIC FREEDOM

Conceptual Solar System Design & Analysis

04/12/2024

Wausau Water Treatment Facility
700 Bugbee Ave
Wausau, WI 54401

Contact
QstN

Andy Pohren
Sam Mueller
Madison, WI 53705

Discussion Topics

Updates from 3/26/24:

- Include site prep costs in project cost
- Model and analyze Load Shift
- Update Export Rate to include Avoided Capacity Cost Rate
- Model multiple Utility Cost Escalation Rates
- Update WI Focus on Energy Rebate
- WPS Transformer $\rightarrow$ non-issue (2500 kVa)

Conceptual Solar System Design & Analysis

04/12/2024

Wausau Water Treatment Facility
700 Bugbee Ave
Wausau, WI 54401

Contact

QstN

Andy Pohren
Sam Mueller
Madison, WI 53705

Scenario Summary

Scenario 1: Well House

Priorities: maximize capacity & energy offset, minimize installed cost

Scenario 2: North Well House

Priorities: maximize capacity & energy offset, minimize installed cost, reduce visibility

Scenario 3: North Fields

Priorities: maximize capacity & energy offset, make effort to eliminate visibility

Scenario 1 : (Well House) Alternate

Priorities: maximize financial payback

Scenario Summary

Financials	Scenario 1	Scenario 2	Scenario 3	Scenario 1 alt
Short description	Well house	N Well house	North Fields	Well house alt
Installed DC capacity	1.5 MW	1.5 MW	1.5 MW	0.875 MW
Installed AC capacity	1.0 MW	1.0 MW	1.0 MW	0.720 MW
Est. full project cost	$4,142,574	$4,192,574	$8,528,148	$2,576,257
Est. full project cost	$2.76/W	$2.80/W	$5.69/W	$2.94/W
Est. avg. annual energy cost savings	$191,774	$192,868	$188,442	$121,046
Est. avg. O&M annual cost	$26,076	$26,076	$26,076	$15,211
Est. levelized cost of energy (LCOE)	$0.064/kWh	$0.064/kWh	$0.133/kWh	$0.063/kWh
Est. lifetime savings	$999,747	$992,105	($2,153,446)	$711,220
Est. payback (after 30% ITC, WFOE rebate)	19.9 yrs	19.9 yrs	25+ yrs	19.3 yrs
Est. 1st year energy production	1,917,591 kWh	1,929,842 kWh	1,895,252 kWh	1,193,627 kWh
Est. 1st year energy offset	100%	100%	98%	62%
Est. 1st year utility bill offset (savings)	72%	72%	70%	45%

Available incentives to consider	Included in financial analysis*
30% Investment Tax Credit (ITC)	yes
10% ITC Bonus – Domestic Content	no
10% ITC Bonus – LI Community	no
WI Focus on Energy Rebate	yes
WI PSC Energy Innovation Grant	no

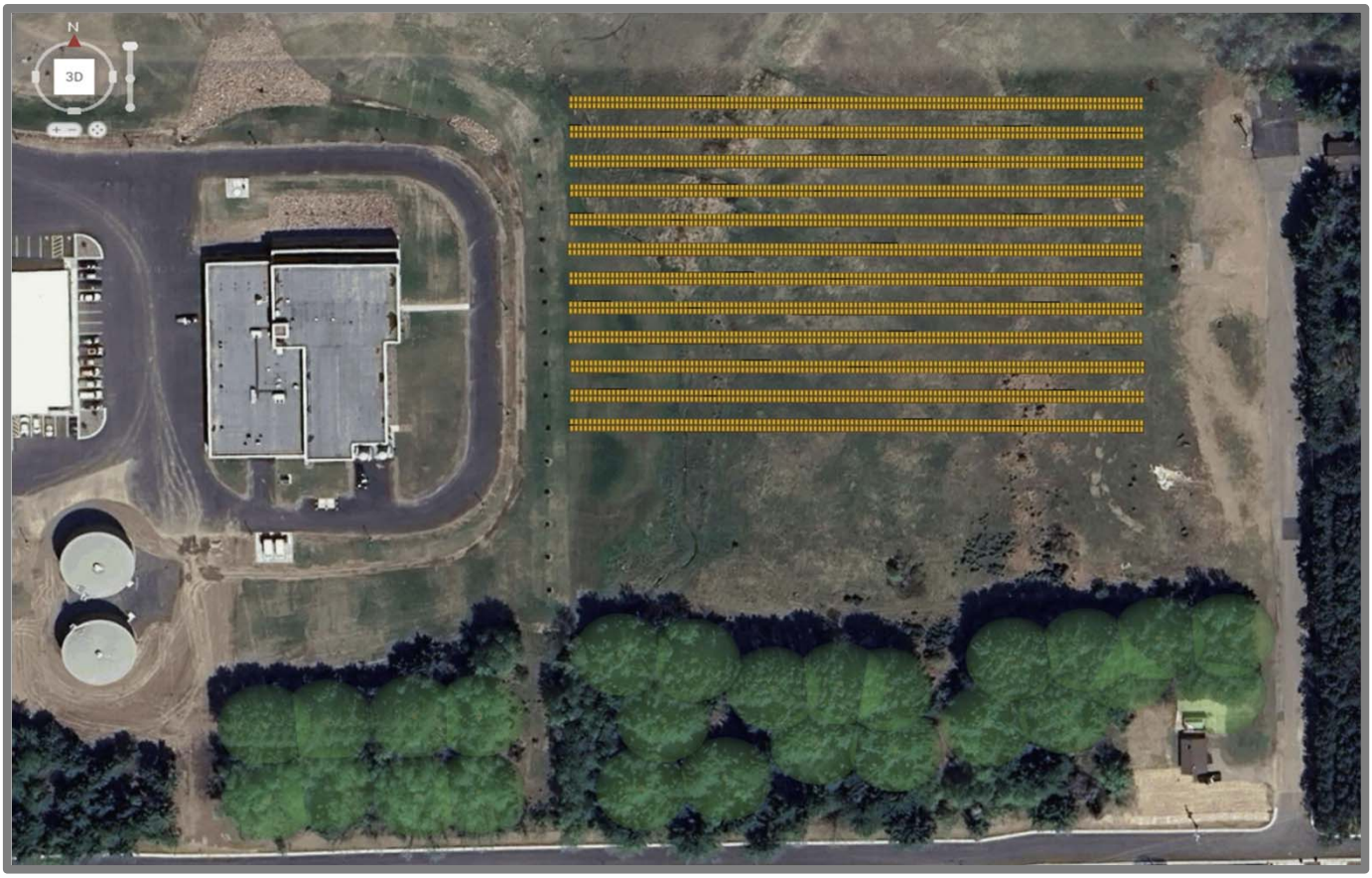
*Including the ITC bonuses (10% Domestic Content, 10% LI Community) and WI PSC EI Grant reduces the project payback by ~5 years

Escalation Rate and Load Shift Summary

Financials – Scenario 1 (1.5 MW_DC)	Standard Operation			Load Shift to Off-Peak		
Utility Escalation Rate	3.5%	5%	7%	3.5%	5%	7%
Load shift (Yes = Shift to Off-peak)	No	No	No	Yes	Yes	Yes
Est. avg. annual energy cost savings	$191,774	$234,411	$309,746	$246,876	$301,763	$398,744
Est. lifetime savings	$999,747	$2,065,668	$3,949,053	$2,377,293	$3,749,482	$6,174,014
Est. payback (after 30% ITC, WFOE rebate)	19.9 yrs	17.4 yrs	15.3 yrs	15.5 yrs	13.7 yrs	12.4 yrs
Est. 1st year energy offset	100%	100%	100%	100%	100%	100%
Est. 1st year utility bill offset (savings)	72%	72%	72%	92%	92%	92%

Financials – Scenario 1 alt (875 kW_DC)	Standard Operation			Load Shift to Off-Peak		
Utility Escalation Rate	3.5%	5%	7%	3.5%	5%	7%
Load shift (Yes = Shift to Off-peak)	No	No	No	Yes	Yes	Yes
Est. avg. annual energy cost savings	$121,046	$147,958	$195,509	$180,661	$220,827	$291,796
Est. lifetime savings	$711,220	$1,384,020	$2,572,796	$2,201,586	$3,205,737	$4,979,981
Est. payback (after 30% ITC, WFOE rebate)	19.3 yrs	17.0 yrs	15.0 yrs	12.9 yrs	11.9 yrs	10.9 yrs
Est. 1st year energy offset	62%	62%	62%	62%	62%	62%
Est. 1st year utility bill offset (savings)	45%	45%	45%	67%	67%	67%

Scenario 1 (Well House)

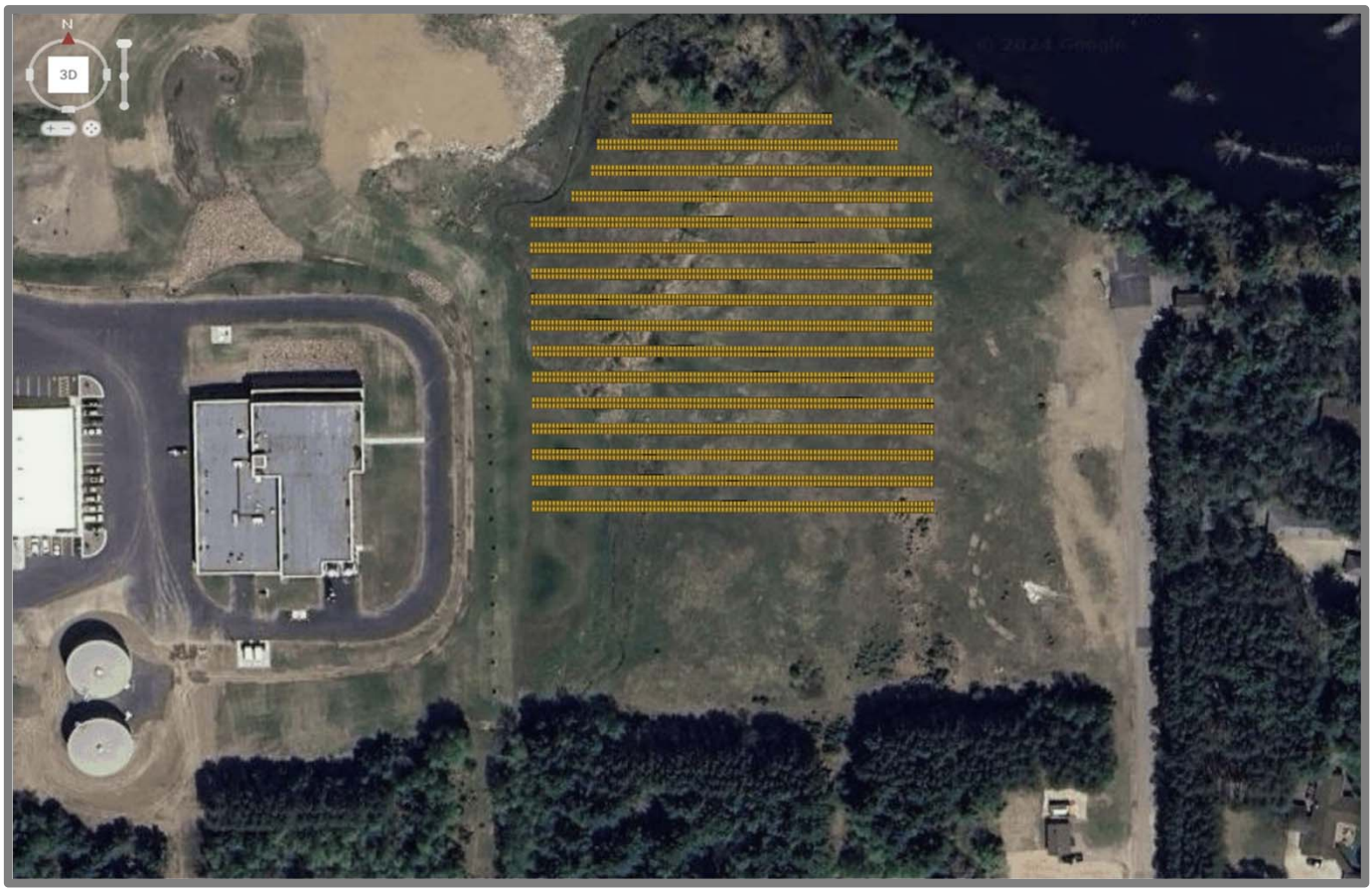


Financials	
Est. installed cost	$4,142,574
Est. installed cost	$2.76/W
Est. avg. annual energy cost savings	$191,774
Est. avg. O&M annual cost	$26,076
Est. levelized cost of energy (LCOE)	$0.064/kWh
Est. lifetime savings	$999,747
Est. payback (after 30% ITC, WFOE rebate)	19.9 yrs.
Est. 1st year utility bill offset (savings)	72%

Performance	
Installed DC potential capacity	1,500 kW_DC
Installed AC potential capacity	1,000 kW_AC
Annual energy consumption	1,927,017 kWh
Est. 1st year solar energy production	1,917,591 kWh
Est. 1st year energy consumption offset	100%

Available incentives to consider	
30% Investment Tax Credit (ITC)	$1,242,772
10% ITC Bonus – Domestic Content	$414,257
10% ITC Bonus – LI Community	$414,257
WI Focus on Energy Rebate	$25,000
WI PSC Energy Innovation Grant	$250,000

Scenario 2 (North Well House)



Financials	
Est. installed cost	$4,192,574
Est. installed cost	$2.80/W
Est. avg. annual energy cost savings	$192,868
Est. avg. O&M annual cost	$26,076
Est. levelized cost of energy (LCOE)	$0.064/kWh
Est. lifetime savings	$992,105
Est. payback (after 30% ITC, WFOE rebate)	19.9 yrs.
Est. 1st year utility bill offset (savings)	72%

Performance	
Installed DC potential capacity	1,500 kW_DC
Installed AC potential capacity	1,000 kW_AC
Annual energy consumption	1,927,017 kWh
Est. 1st year solar energy production	1,929,842 kWh
Est. 1st year energy consumption offset	100%

Available incentives to consider	
30% Investment Tax Credit (ITC)	$1,257,772
10% ITC Bonus – Domestic Content	$419,257
10% ITC Bonus – LI Community	$419,257
WI Focus on Energy Rebate	$25,000
WI PSC Energy Innovation Grant	$250,000

Scenario 3 (North Fields)

Financials	
Est. installed cost	$8,528,148
Est. installed cost	$5.69/W
Est. avg. annual energy cost savings	$188,442
Est. avg. O&M annual cost	$26,076
Est. levelized cost of energy (LCOE)	$0.13/kWh
Est. lifetime savings	($2,153,446)
Est. payback (after 30% ITC, WFOE rebate)	25+ years
Est. 1st year utility bill offset (savings)	70%

Performance	
Installed DC potential capacity	1,500 kW_DC
Installed AC potential capacity	1,000 kW_AC
Annual energy consumption	1,927,017 kWh
Est. 1st year solar energy production	1,895,252 kWh
Est. 1st year energy consumption offset	98%

Available incentives to consider	
30% Investment Tax Credit (ITC)	$2,558,444
10% ITC Bonus – Domestic Content	$852,815
10% ITC Bonus – LI Community	$852,815
WI Focus on Energy Rebate	$25,000
WI PSC Energy Innovation Grant	$250,000

Scenario 1 (Well House) - Alternate

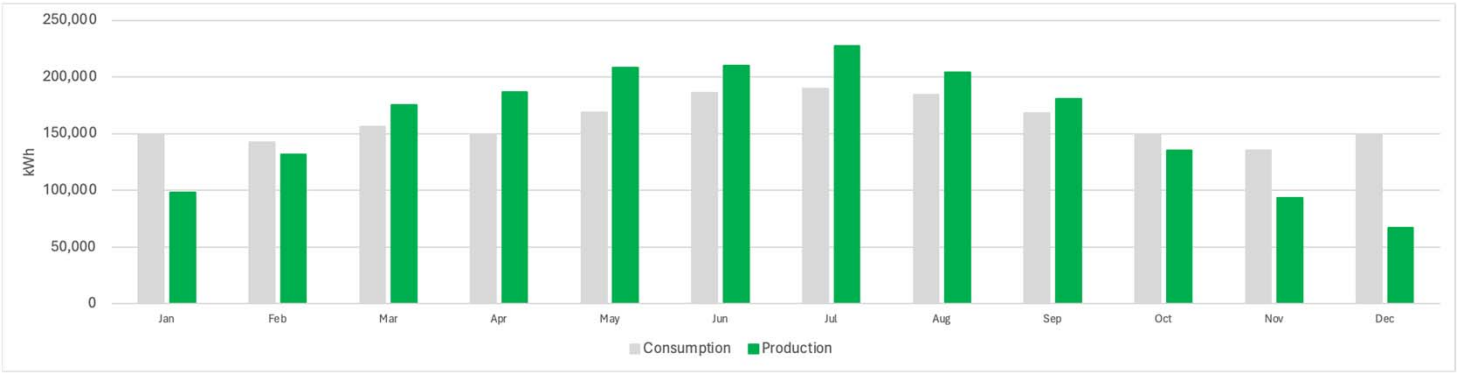
Financials	
Est. installed cost	$2,576,257
Est. installed cost	$2.94/W
Est. avg. annual energy cost savings	$121,046
Est. avg. O&M annual cost	$15,211
Est. levelized cost of energy (LCOE)	$0.063/kWh
Est. lifetime savings	$711,220
Est. payback (after 30% ITC, WFOE rebate)	19.3 yrs.
Est. 1st year utility bill offset (savings)	45%

Performance	
Installed DC potential capacity	875 kW_DC
Installed AC potential capacity	720 kW_AC
Annual energy consumption	1,927,017 kWh
Est. 1st year solar energy production	1,193,627 kWh
Est. 1st year energy consumption offset	62%

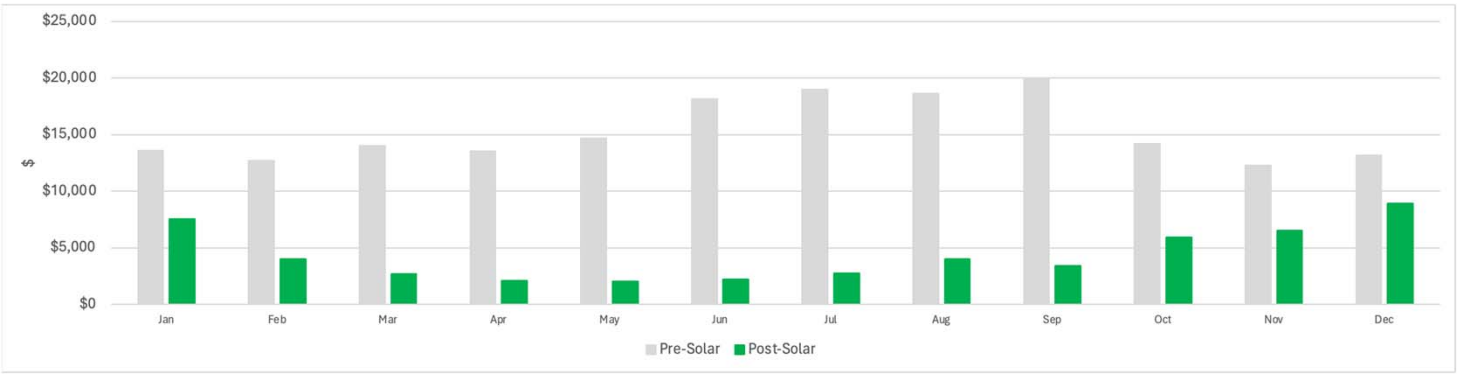
Available incentives to consider	
30% Investment Tax Credit (ITC)	$772,877
10% ITC Bonus – Domestic Content	$257,626
10% ITC Bonus – LI Community	$257,626
WI Focus on Energy Rebate	$25,000
WI PSC Energy Innovation Grant	$250,000

Equipment Assumptions – All Scenarios	
System type	Grid-tied
Racking installation	Ground-mount, fixed-tilt
Modules type	Monocrystalline
Module size	500 W; VSUN500 -132BMH (82.4” x 44.6” x 1.38”)
Number of modules (panels)	3,000 (Scenarios 1, 2, and 3); 1,750 (Scenario 1 Alternate)
Inverters	String inverter; SolarEdge
Power optimizers	For Scenario 3 only

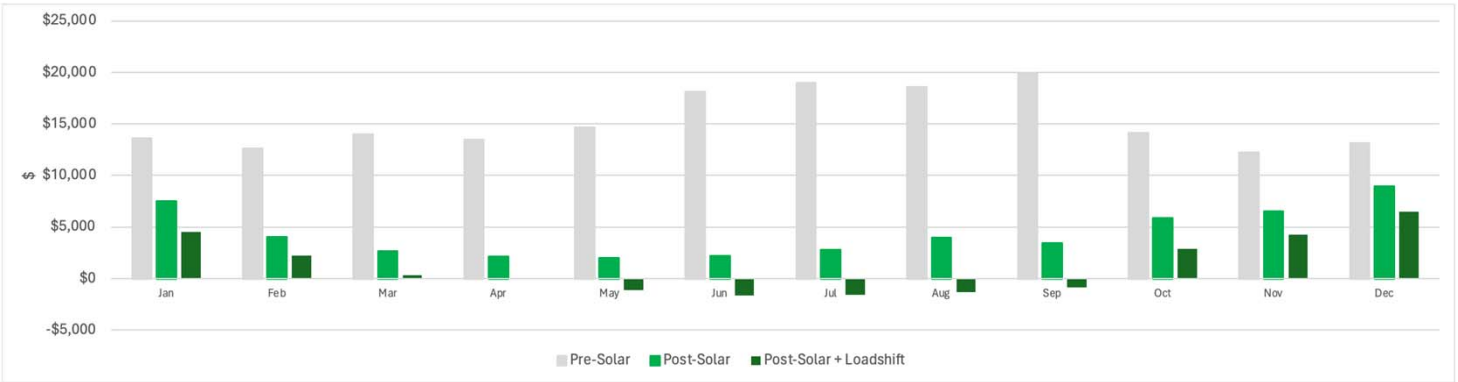
Monthly System Energy Performance – Existing Baseline Consumption vs PV Production (Scenario 1)



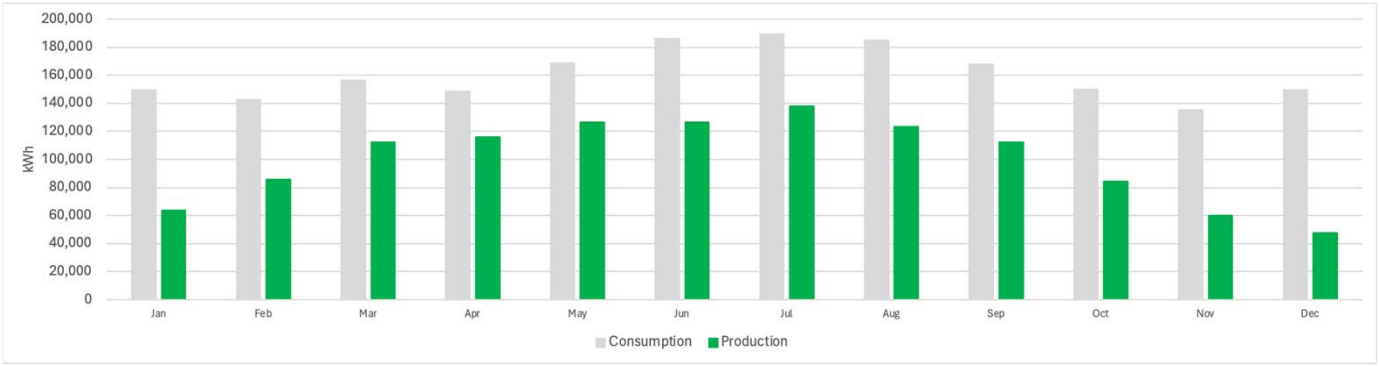
Monthly Utility Billing – Pre-Solar vs Post-Solar (Scenario 1)



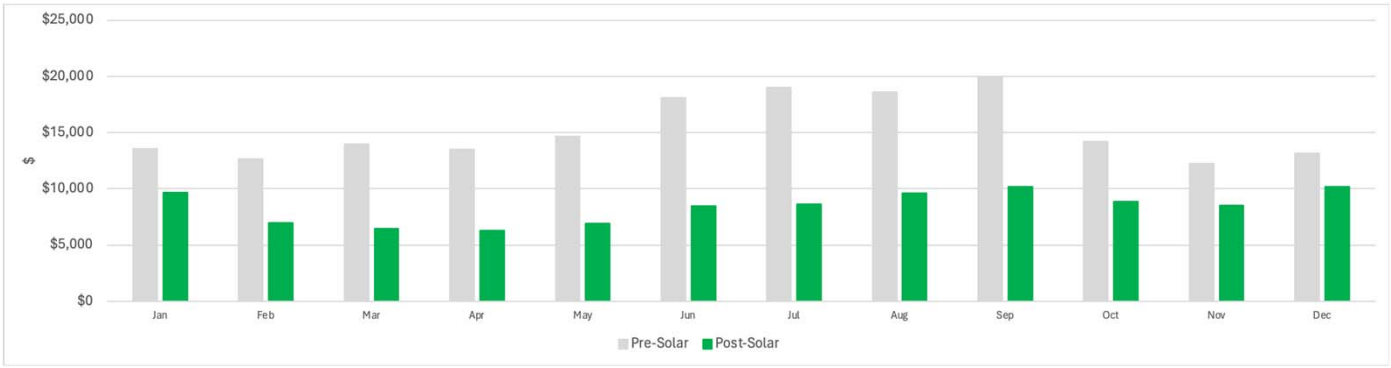
Monthly Utility Billing – Pre-Solar vs Post-Solar + Shifted Load to Off-Peak (Scenario 1)



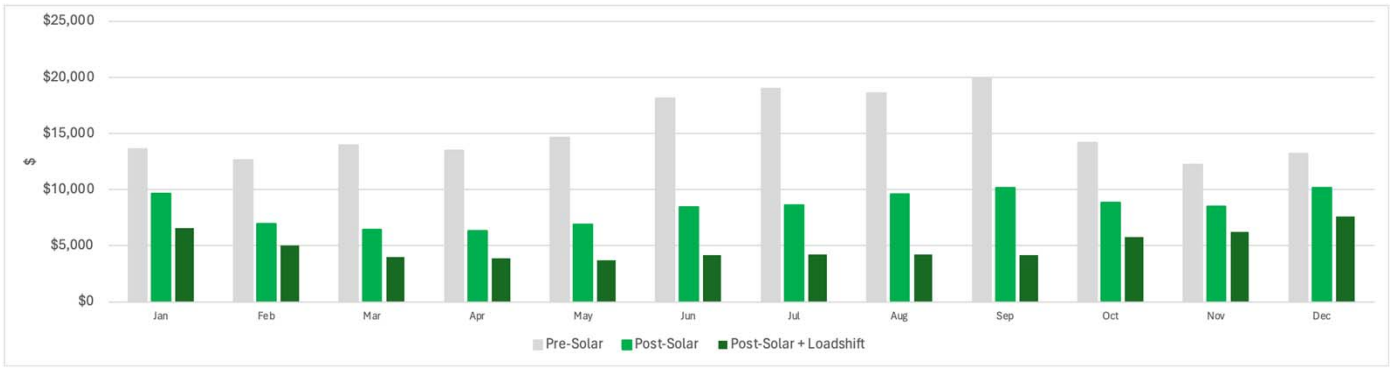
Monthly System Energy Performance – Existing Baseline Consumption vs PV Production (Scenario 1 alt)



Monthly Utility Billing – Pre-Solar vs Post-Solar (Scenario 1 alt)



Monthly Utility Billing – Pre-Solar vs Post-Solar + Shifted Load to Off-Peak (Scenario 1 alt)



Heat Maps of Energy Consumption

Heat map of energy consumption, kWh (month vs hour of day)

Sum of kWh	Month												
Hour	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
0	5,085	7,155	7,788	7,557	7,556	8,711	8,885	8,204	6,928	7,646	6,281	5,454	87,251
1	4,776	7,180	7,600	7,353	7,384	8,244	8,527	7,784	6,474	6,596	5,727	4,776	82,420
2	4,622	7,216	7,599	7,512	6,987	8,048	8,256	7,644	5,844	5,600	5,028	4,622	78,978
3	4,834	6,953	7,309	7,174	6,476	7,832	7,863	7,357	5,232	4,865	4,763	4,834	75,493
4	4,927	6,351	6,549	5,892	5,689	7,248	7,639	6,950	4,892	4,318	4,526	4,927	69,907
5	4,747	5,660	5,655	5,357	5,520	7,151	7,260	6,829	4,794	4,273	4,272	4,747	66,265
6	4,711	5,587	5,368	6,081	6,144	7,297	7,333	6,861	5,041	4,420	4,227	4,711	67,782
7	4,682	5,107	5,290	5,728	6,473	7,432	7,348	7,181	5,210	4,483	4,283	4,682	67,900
8	4,665	4,784	5,037	5,365	6,526	7,667	7,533	7,233	5,349	4,396	4,340	4,665	67,559
9	4,811	4,448	5,078	4,844	6,457	7,724	7,379	7,180	5,615	4,249	4,352	4,811	66,947
10	4,955	4,271	5,122	4,729	6,441	7,703	7,493	7,446	6,424	4,322	4,490	4,955	68,351
11	5,274	4,282	5,131	4,523	6,337	7,446	7,279	7,173	7,208	4,562	4,756	5,274	69,245
12	5,660	4,434	4,945	4,316	6,427	6,970	7,186	7,399	7,906	4,763	5,024	5,660	70,691
13	6,378	4,361	4,887	4,638	6,478	6,971	7,253	7,603	8,239	5,387	5,359	6,378	73,932
14	7,056	4,635	5,520	4,993	7,027	7,198	7,160	7,970	8,373	6,300	5,563	7,056	78,851
15	7,547	5,615	6,457	5,196	7,432	7,002	7,092	7,812	8,401	7,140	5,786	7,547	83,027
16	8,075	6,038	7,138	5,870	7,688	7,514	7,235	7,877	8,231	7,763	6,324	8,075	87,828
17	8,088	6,275	7,324	6,721	7,846	7,712	7,527	7,827	8,426	8,162	6,732	8,088	90,728
18	8,382	6,663	7,611	7,267	7,995	7,989	8,125	8,244	8,465	8,388	7,173	8,382	94,684
19	8,513	6,945	7,750	7,443	7,881	8,205	8,702	8,303	8,604	8,509	7,426	8,513	96,795
20	8,646	6,991	7,707	7,437	7,941	8,275	8,801	8,366	8,348	8,504	7,449	8,646	97,111
21	8,310	7,062	7,773	7,391	7,961	8,537	9,043	8,383	8,173	8,357	7,485	8,310	96,785
22	7,803	7,128	7,772	7,534	8,019	8,688	9,203	8,564	8,243	8,424	7,291	7,803	96,474
23	6,557	7,199	7,777	7,565	7,919	8,569	9,271	8,284	7,441	8,326	6,550	6,557	92,012
Grand Total	149,103	142,340	156,187	148,485	168,604	186,133	189,394	184,475	167,861	149,754	135,209	149,472	1,927,017

Heat map of energy production, kWh (month vs hour of day) – Scenario 1

Sum of Production [kWh]	Month												
Hour	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	11	193	6	0	0	0	0	0	211
6	0	0	0	315	1,295	1,573	1,231	520	0	0	0	0	4,934
7	0	0	730	3,780	6,041	6,294	5,735	4,218	2,546	741	0	0	30,084
8	0	2,051	6,365	9,785	**12,882**	11,805	**12,780**	10,555	8,287	6,547	1,509	4	82,570
9	3,409	8,062	**14,920**	**15,534**	**19,232**	**18,705**	**19,394**	**16,795**	**14,303**	11,515	6,817	2,914	151,600
10	8,928	**13,745**	**19,159**	**19,467**	**21,335**	**22,288**	**23,597**	**21,792**	**20,724**	**16,124**	**13,018**	6,770	206,946
11	**14,403**	**16,386**	**21,116**	**21,020**	**23,076**	**23,091**	**24,816**	**23,438**	**21,509**	**17,808**	**16,532**	10,135	233,330
12	**18,246**	**18,453**	**22,813**	**23,246**	**24,840**	**22,757**	**26,372**	**23,521**	**23,474**	**18,530**	**16,276**	**13,984**	252,513
13	**17,447**	**19,802**	**23,064**	**22,288**	**23,708**	**22,545**	**25,770**	**23,861**	**23,436**	**18,639**	**16,393**	**14,884**	251,836
14	**16,896**	**18,742**	**22,793**	**22,363**	**21,838**	**21,773**	**24,453**	**22,447**	**24,150**	**17,069**	**12,695**	9,294	234,513
15	11,340	**16,796**	**19,692**	**20,616**	**20,919**	**20,597**	**23,459**	**22,269**	**20,637**	**14,826**	6,976	6,620	204,748
16	6,060	**12,573**	**14,269**	**15,207**	**16,248**	**18,316**	**19,295**	**18,059**	**13,449**	9,713	3,087	2,260	148,536
17	1,136	4,982	8,413	9,507	10,770	**12,557**	**12,405**	11,559	6,890	3,544	80	0	81,842
18	0	130	1,934	3,264	4,933	6,034	6,725	4,382	1,572	0	0	0	28,973
19	0	0	0	178	1,086	1,409	1,454	629	0	0	0	0	4,756
20	0	0	0	0	0	134	65	0	0	0	0	0	199
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	97,866	131,721	175,267	186,569	208,215	210,068	227,558	204,044	180,976	135,055	93,385	66,866	1,917,591

Heat Maps of Energy Purchase and Export

Heat map of energy purchase, kWh (month vs hour of day) – Scenario 1

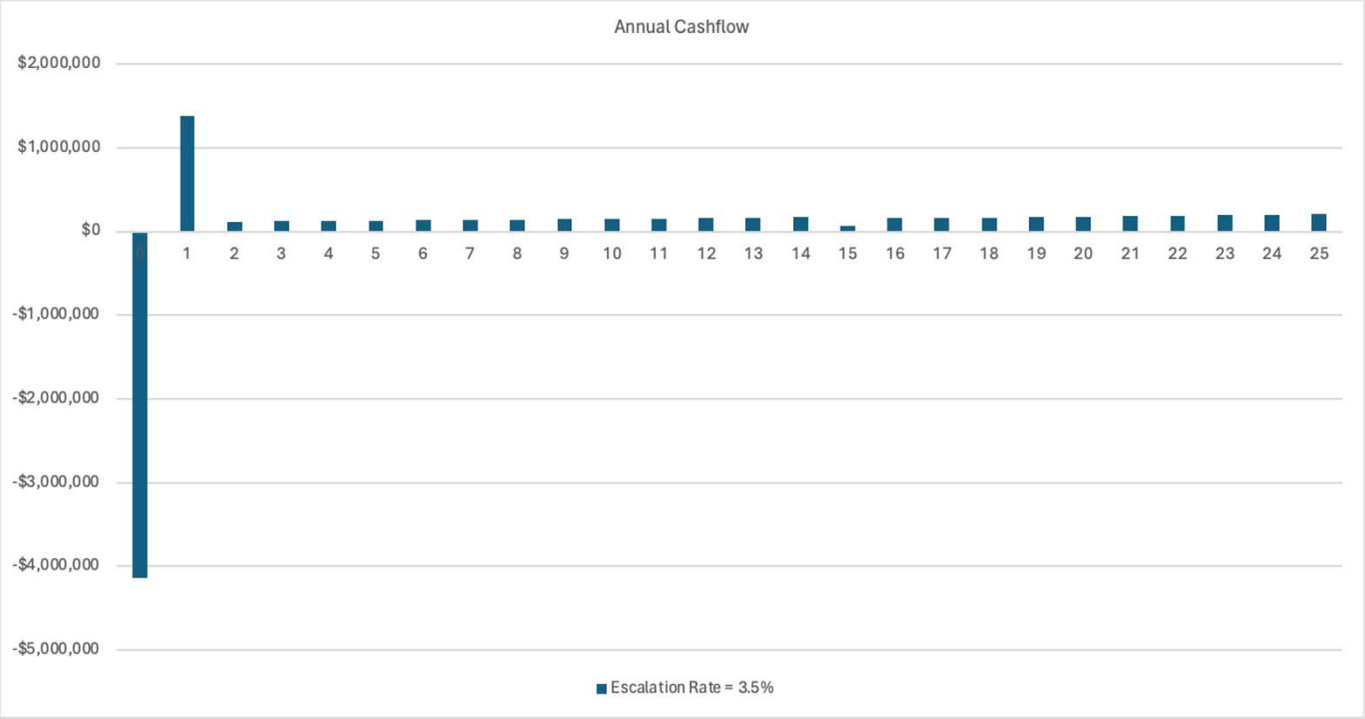
Sum of Purchase [kWh]	Month												
Hour	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
0	5,085	7,155	7,788	7,557	7,556	8,711	8,885	8,204	6,928	7,646	6,281	5,454	87,251
1	4,776	7,180	7,600	7,353	7,384	8,244	8,527	7,784	6,474	6,596	5,727	4,776	82,420
2	4,622	7,216	7,599	7,512	6,987	8,048	8,256	7,644	5,844	5,600	5,028	4,622	78,978
3	4,834	6,953	7,309	7,174	6,476	7,832	7,863	7,357	5,232	4,865	4,763	4,834	75,493
4	4,927	6,351	6,549	5,892	5,689	7,248	7,639	6,950	4,892	4,318	4,526	4,927	69,907
5	4,747	5,660	5,655	5,357	5,509	6,957	7,254	6,829	4,794	4,273	4,272	4,747	66,054
6	4,711	5,587	5,368	5,767	4,849	5,724	6,102	6,341	5,041	4,420	4,227	4,711	62,848
7	4,682	5,107	4,560	2,346	1,500	1,605	1,747	2,964	2,664	3,742	4,283	4,682	39,883
8	4,665	2,778	1,471	392	713	745	452	876	1,225	1,078	2,869	4,661	21,926
9	2,264	815	406	72	374	181	97	278	352	543	710	2,042	8,135
10	1,115	235	289	102	193	13	76	318	74	510	433	1,075	4,433
11	378	-	137	-	54	-	27	44	287	398	232	903	2,460
12	175	89	-	-	-	259	129	-	235	467	399	511	2,264
13	405	7	-	-	101	288	324	30	236	309	247	839	2,786
14	822	13	1	-	249	302	222	336	3	285	1,185	1,427	4,846
15	1,670	428	343	34	233	857	474	291	248	709	2,147	2,170	9,604
16	3,143	860	866	362	529	280	402	158	641	2,168	3,454	5,815	18,678
17	6,952	2,773	1,398	791	1,100	706	946	758	2,372	4,618	6,652	8,088	37,154
18	8,382	6,533	5,677	4,024	3,115	2,462	1,922	3,886	6,893	8,388	7,173	8,382	66,835
19	8,513	6,945	7,750	7,265	6,795	6,797	7,249	7,674	8,604	8,509	7,426	8,513	92,039
20	8,646	6,991	7,707	7,437	7,941	8,141	8,736	8,366	8,348	8,504	7,449	8,646	96,913
21	8,310	7,062	7,773	7,391	7,961	8,537	9,043	8,383	8,173	8,357	7,485	8,310	96,785
22	7,803	7,128	7,772	7,534	8,019	8,688	9,203	8,564	8,243	8,424	7,291	7,803	96,474
23	6,557	7,199	7,777	7,565	7,919	8,569	9,271	8,284	7,441	8,326	6,550	6,557	92,012
Grand Total	**108,184**	**101,067**	**101,797**	**91,926**	**91,245**	**101,195**	**104,846**	**102,319**	**95,244**	**103,055**	**100,810**	**114,492**	**1,216,179**

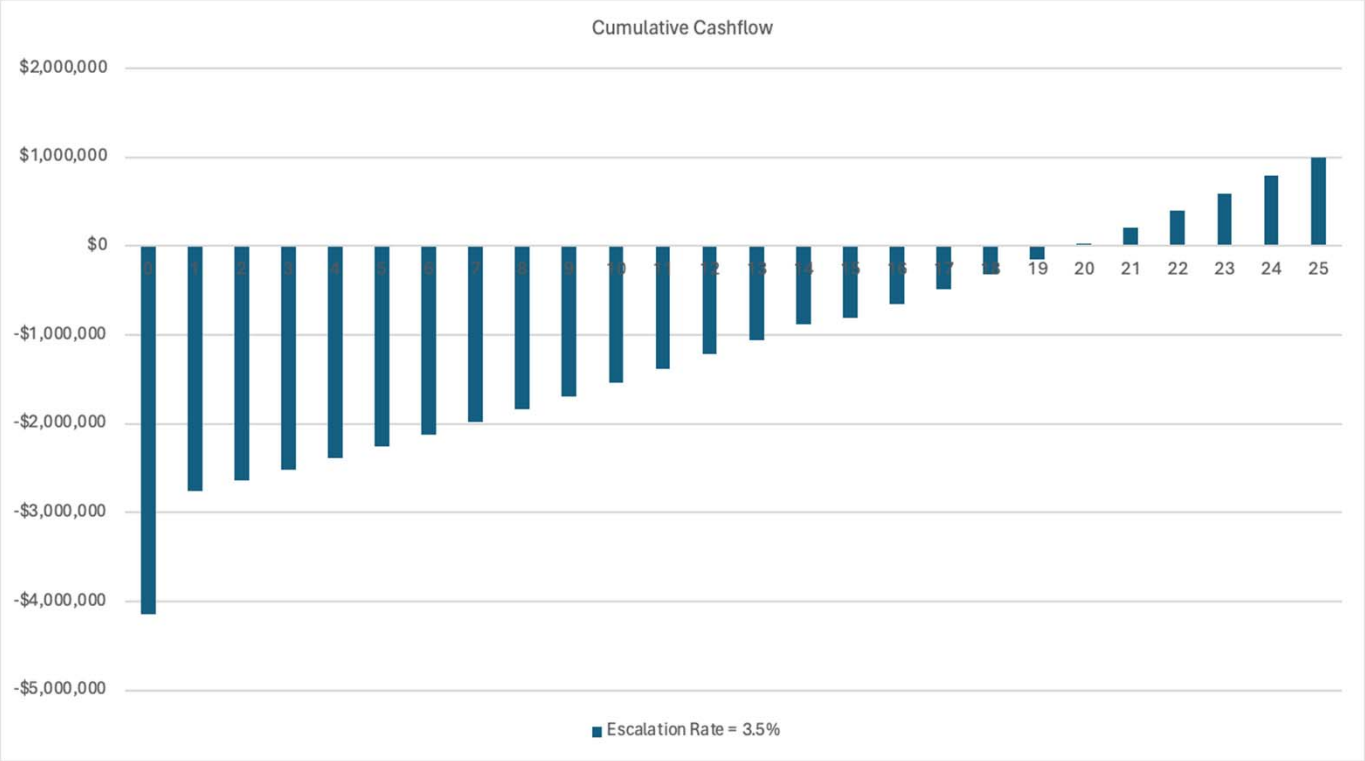
Heat map of energy export, kWh (month vs hour of day) – Scenario 1

Sum of Export [kWh]	Month												
Hour	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
0	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	398	1,068	467	135	-	-	-	-	-	2,067
8	-	45	2,800	4,812	7,069	4,884	5,699	4,199	4,162	3,229	38	-	36,937
9	862	4,429	10,248	10,762	13,150	11,162	12,112	9,892	9,040	7,810	3,176	145	92,788
10	5,088	9,709	14,326	14,840	15,087	14,598	16,179	14,664	14,374	12,312	8,961	2,890	143,027
11	9,507	12,104	16,121	16,497	16,794	15,645	17,564	16,309	14,589	13,644	12,008	5,764	166,546
12	12,760	14,108	17,868	18,930	18,413	16,047	19,315	16,122	15,803	14,234	11,652	8,835	184,086
13	11,474	15,448	18,177	17,649	17,331	15,861	18,841	16,288	15,433	13,561	11,281	9,345	180,690
14	10,663	14,120	17,275	17,370	15,060	14,876	17,514	14,813	15,781	11,054	8,317	3,665	160,508
15	5,464	11,609	13,578	15,454	13,720	14,452	16,841	14,748	12,484	8,394	3,337	1,243	131,325
16	1,128	7,395	7,998	9,699	9,088	11,082	12,462	10,339	5,859	4,117	217	-	79,386
17	-	1,480	2,487	3,578	4,024	5,550	5,823	4,490	836	-	-	-	28,268
18	-	-	-	21	52	506	523	24	-	-	-	-	1,125
19	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand Total	**56,947**	**90,448**	**120,877**	**130,009**	**130,856**	**125,131**	**143,010**	**121,888**	**108,360**	**88,356**	**58,986**	**31,886**	**1,206,753**

Return on Investment / Payback Analysis (Scenario 1)

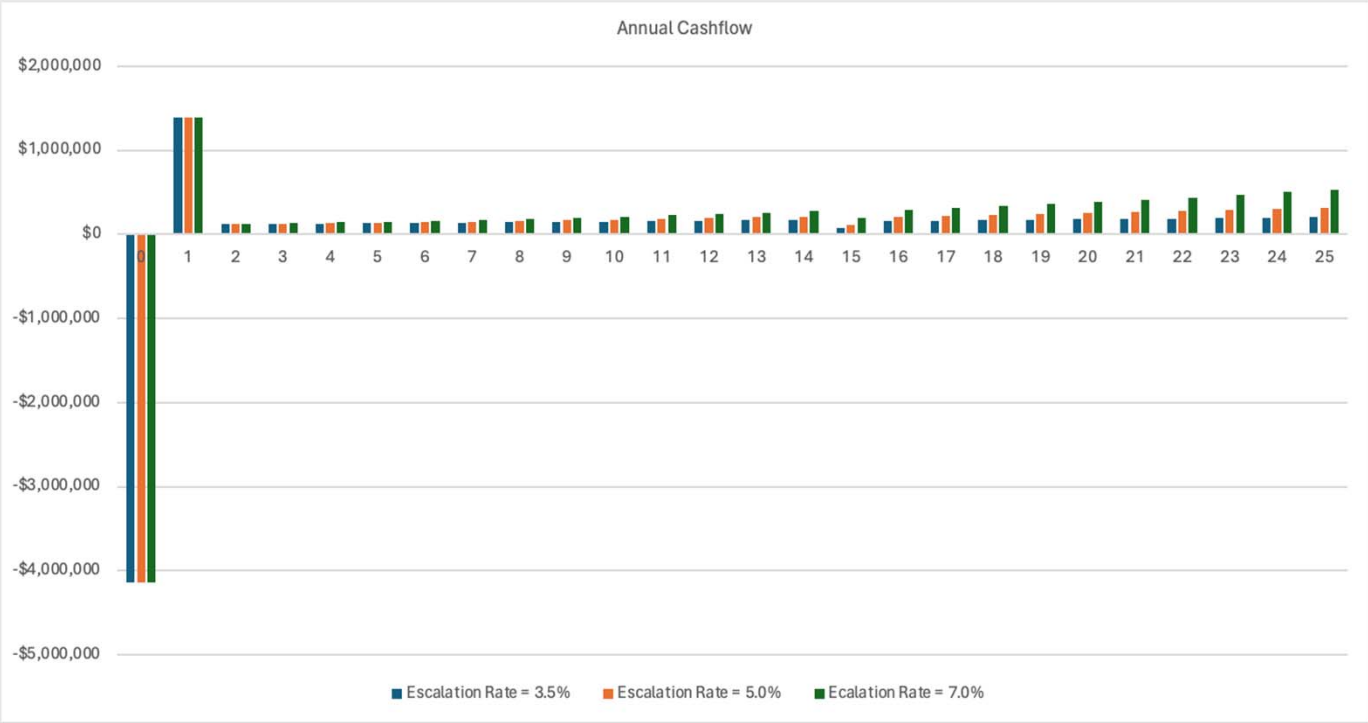
Scenario 1: $4.143M cost, $1.243M ITC (30%), $25k WI FOE Rebate (Escalation Rate = 3.5%, No Load Shift)

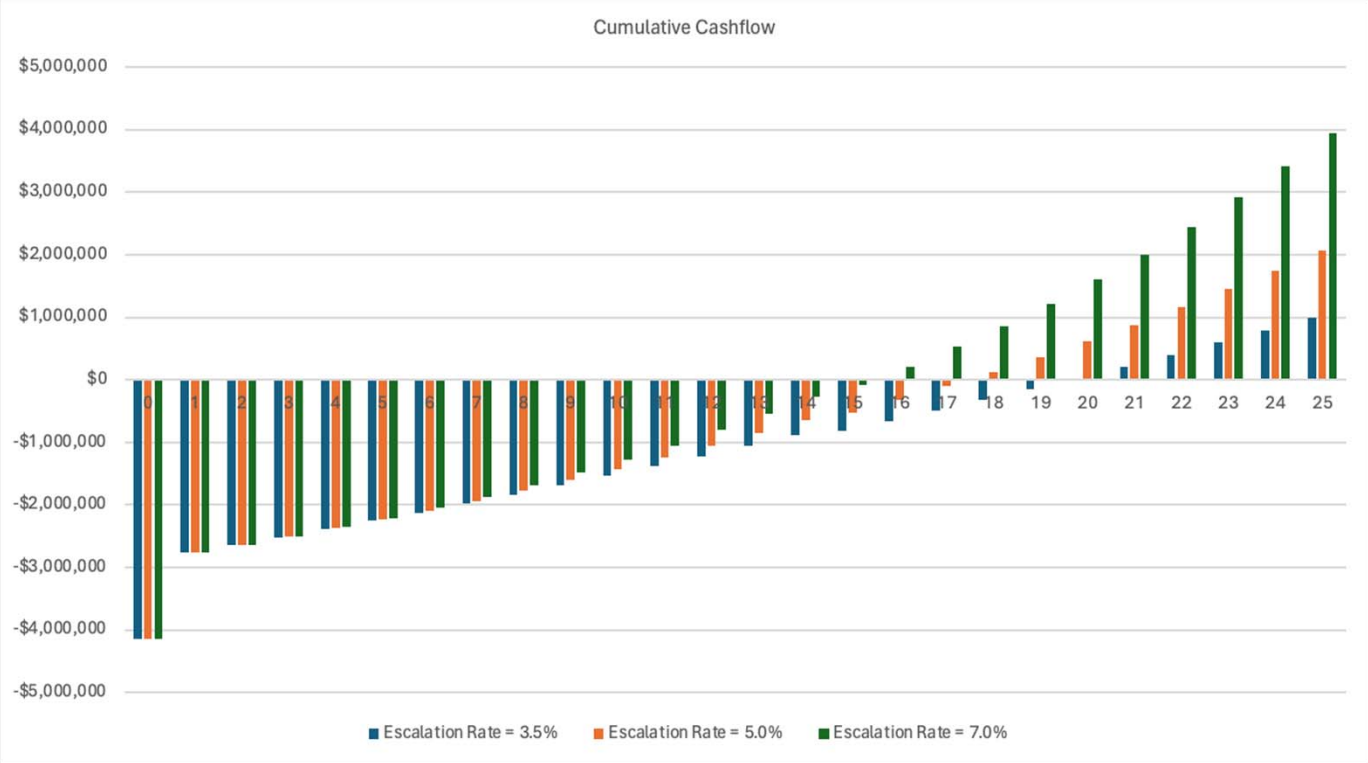




Return on Investment / Payback Analysis (Scenario 1)

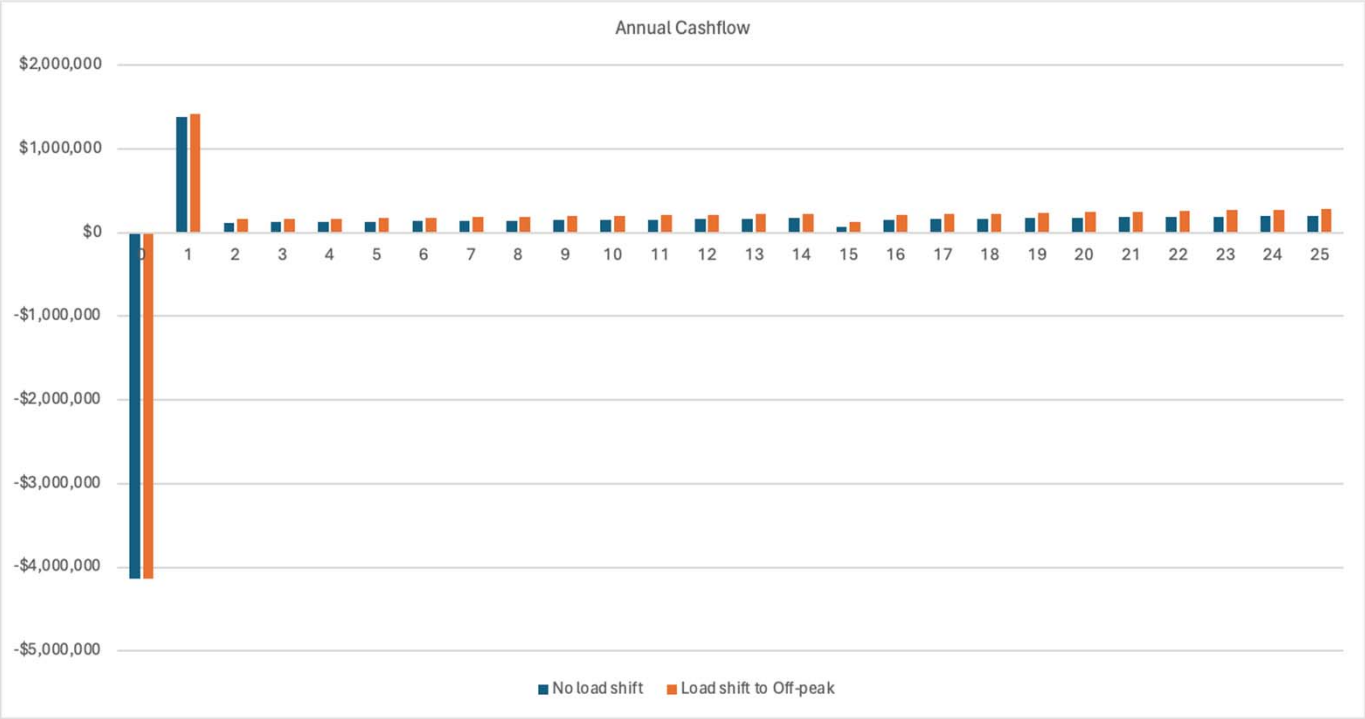
Scenario 1: $4.143M cost, $1.243M ITC (30%), $25k WI FOE Rebate (multiple Escalation Rates)

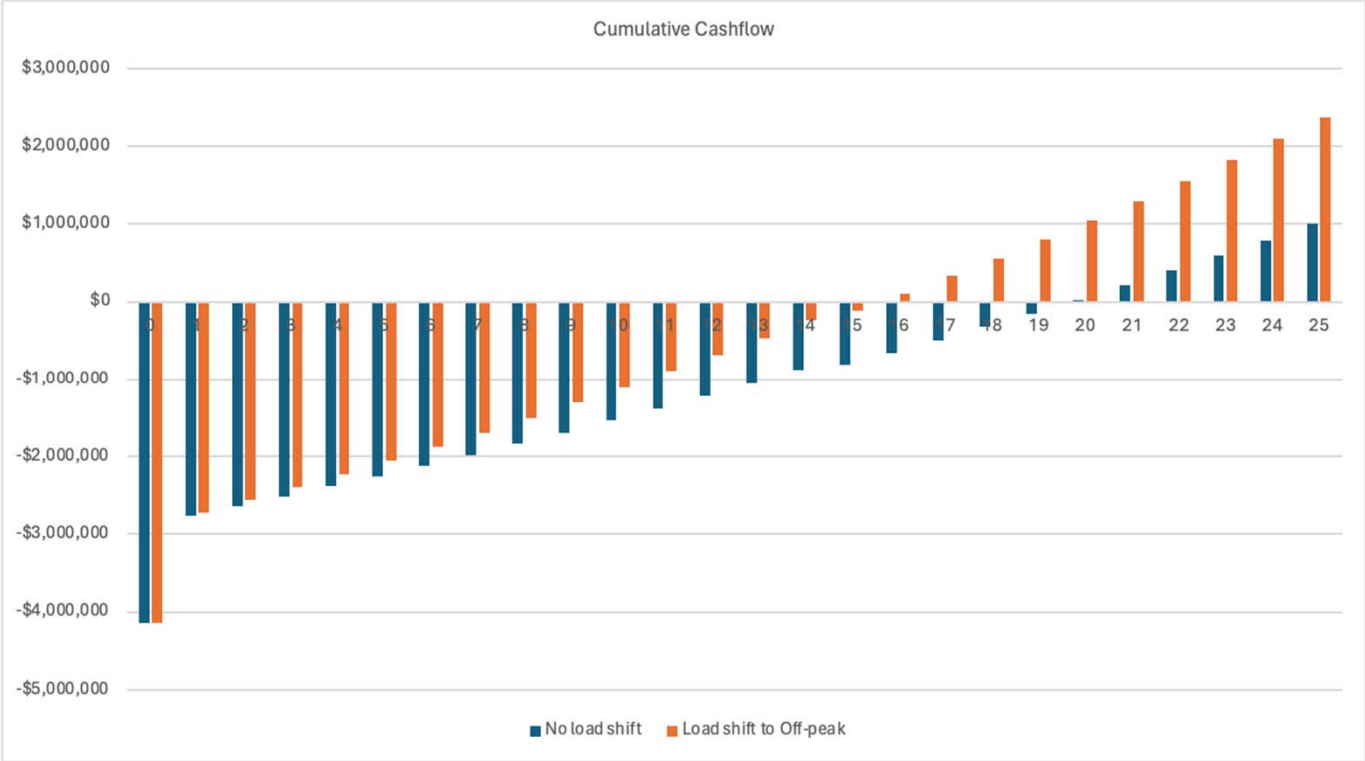




Return on Investment / Payback Analysis (Scenario 1)

Scenario 1: $4.143M cost, $1.243M ITC (30%), $25k WI FOE Rebate (Load Shift Detail)





Key Assumptions and Notes

1. Solar PV system life assumed to be 25 years (minimum).
2. Solar PV system performance degradation modeled at 0.5% per year.
3. Utility Electricity Rate escalation assumption of 3.5% per year (following 20-year historic trend in Wisconsin).
4. Utility bill savings from offsets based on energy and demand rates as per Wisconsin Public Services (WPS) rate CG-20.

Season	Time	Rate ($/kWh)	Customer Demand ($/kW)	Demand Charge ($/kW)
Winter (Oct-May)	On-peak (Mon-Fri 8AM-1PM & 5PM-9PM)	$0.0728	$2.399	$11.992
Winter (Oct-May)	Off-peak	$0.4282	$2.399	$0.000
Summer (June-Sep)	On-peak (Mon-Fri 8AM-6PM)	$0.0728	$2.399	$18.449
Summer (June-Sep)	Off-peak	$0.4282	$2.399	$0.000

5. Utility bill savings from exports modeled using the weighted average of $0.0613/kWh buy back rate (Avoided Energy Cost Rate), based on WPS Parallel Generation Purchase tariff (WPS PG-2B), and an hourly performance/consumption simulation model.

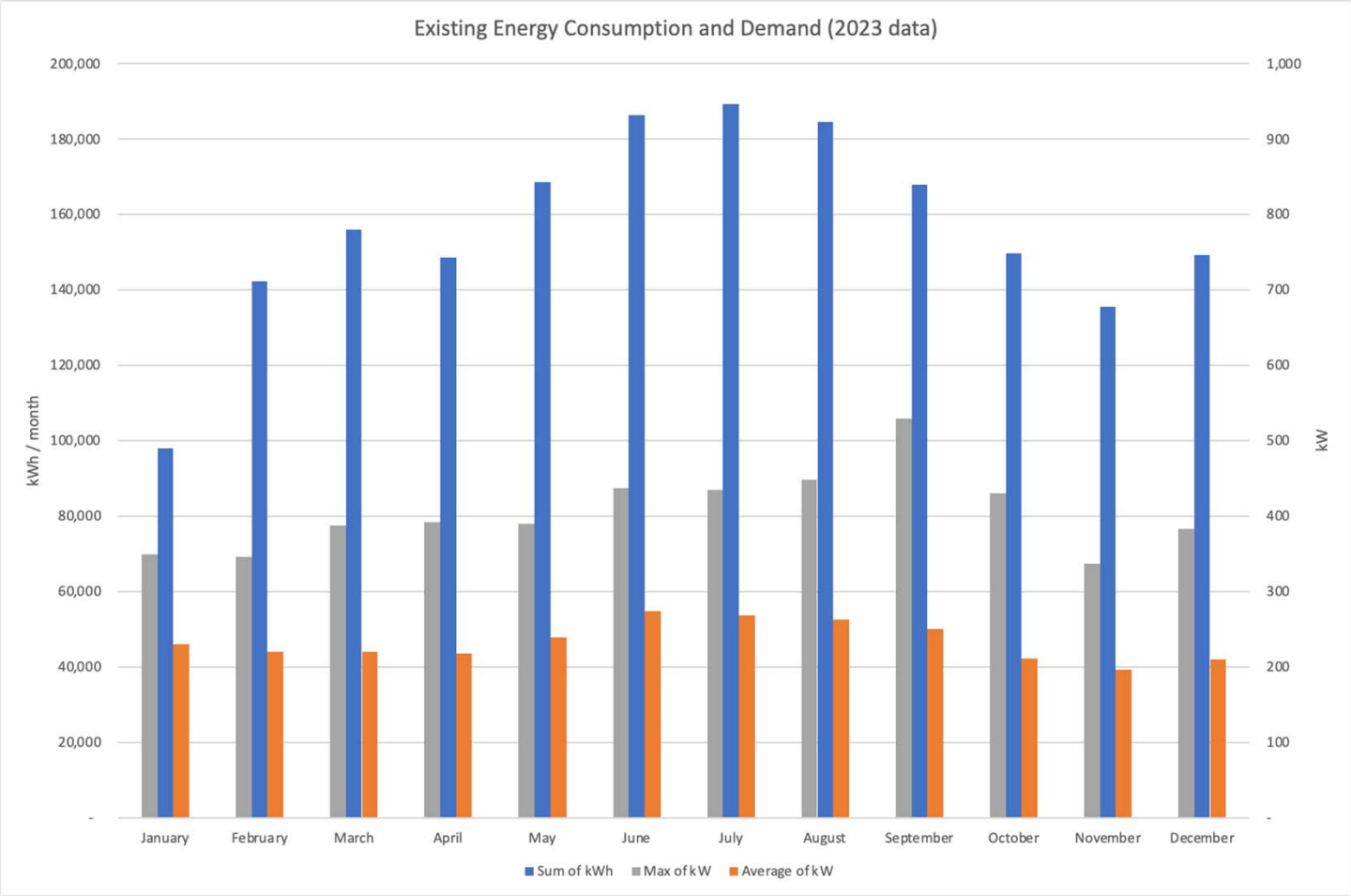
Season	Time	Rate ($/kWh)
Winter (Oct-May)	On-peak (Mon-Fri 7AM-10PM)	$0.07013
Winter (Oct-May)	Off-peak	$0.02904
Summer (June-Sep)	On-peak (Mon-Fri 7AM-11PM)	$0.08132
Summer (June-Sep)	Off-peak	$0.03041

6. Per communication with WPS on 3/14/24, while on PG-2B tariff, bill credits are applied to that month's bill; any credit that exceeds $100 is paid in the form of a check.
7. Plant operation and energy usage modeled to remain consistent with 2023 usage. Increased energy usage in future years was not modeled.
8. Scenario 1 & 2 are modeled as pile-driven ground mounts with a fixed rack at a 25-degrees tilt with 15-ft row spacing, achieving an overall smaller array footprint.
9. Scenario 3 is modeled as a pile-drive ground mount with a fixed rack at a 27-degree tilt with 16.5-ft row spacing, achieving a higher production but also takes up a slightly larger footprint.
10. Scenario 1 Alternate is modeled as a pile-drive ground mount with a fixed rack at a 30-degree tilt with 20-ft row spacing, achieving a higher production but also a larger footprint.
11. There is a potential for additional engineering fees and distribution study fees from WPS that are unknown until interconnection application is filled with WPS. The Distribution study may result in the need for system side improvements to support the PV system, which also could lead to additional costs to the City. In this scenario, an alternative option could be to reduce the PV system size to meet utility transformer limitations once the study is complete.
12. Average O&M costs include potential inverter replacement at year 15 in the lifetime of the PV system.
13. The property for Scenario 1, and the southern part of Scenario 2, is located in the City of Wausau jurisdiction. It is currently Zoned Residential (SR-2), and per zoning laws the property would need to be rezoned to Heavy industrial (HI); reference https://library.municode.com/wi/wausau/codes/code_of_ordinances?nodeId=TIT23ZO_ARTIIILAUSRE 23.03.05 - Table of land uses. Per the Solar arrays exempt from Screening requirements. 23.06.21 - Exterior storage and screening standards. Part 6(a) https://library.municode.com/wi/wausau/codes/code_of_ordinances?nodeId=TIT23ZO_ARTVIPEST_23.06.21EXSTSCST
14. The property for Scenario 3, and the north part of Scenario 2, is located in the Village of Maine jurisdiction. This is also zoned residential, and an application and petition would be needed to rezone with the city ($150 application fee). Application and reference available at https://cdn.townweb.com/villageofmaine.org/wp-content/uploads/2023/03/amendzoningordinance7-2020.pdf

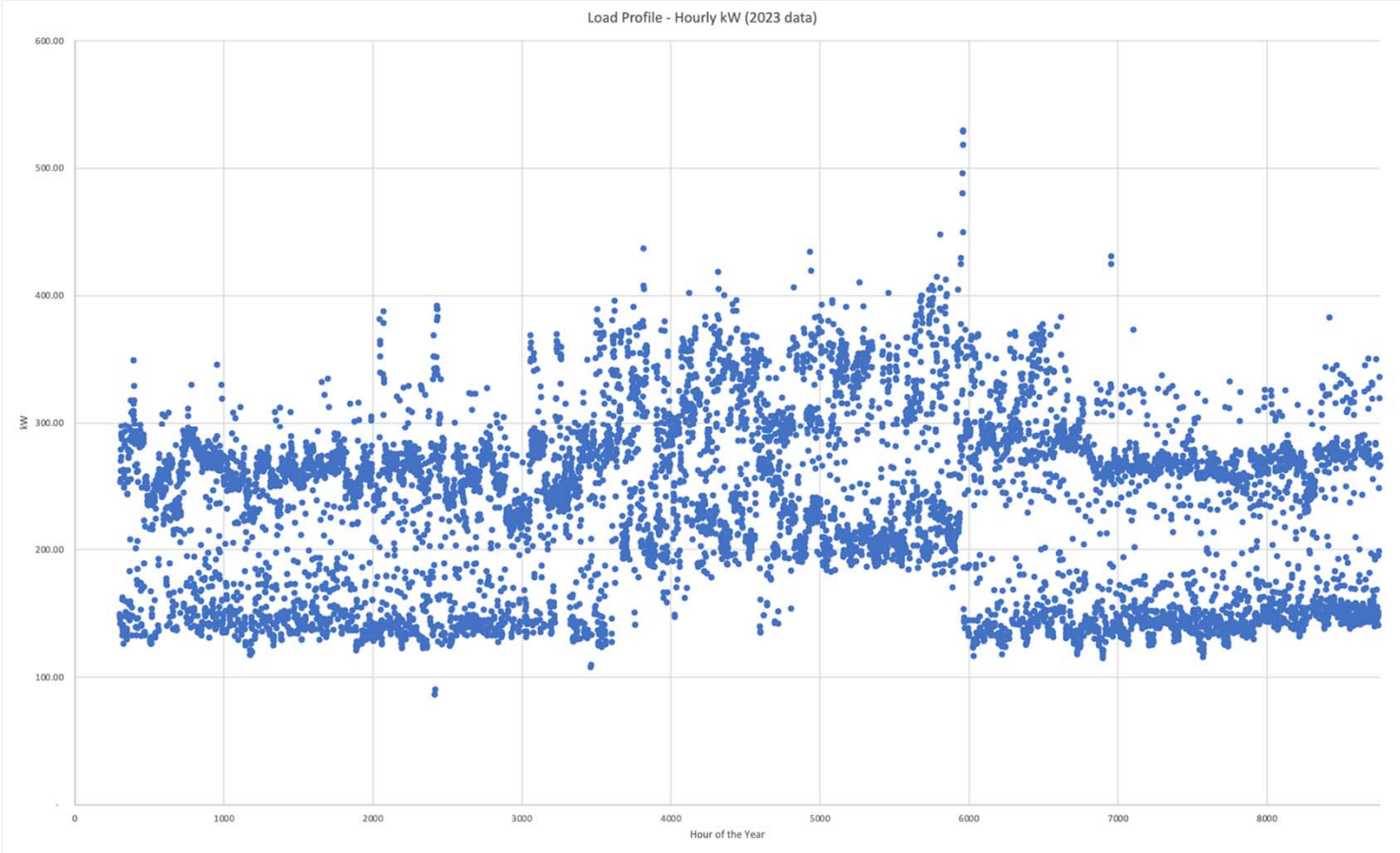
Key Assumptions and Notes

15. Notes on the Federal Investment Tax Credit (ITC).
    a. Per guidance from the US DOE and the Federal Office for Energy Efficiency and Renewable Energy, as a tax-exempt organization, the City of Wausau is eligible to receive a refund (i.e. direct pay) from the IRS for tax credits on projects placed in service after 2022. Organizations that wish to receive direct pay, also known as elective pay, must pre-register with the IRS before the tax return is due and receive a registration number.
    b. The Base Credit for a PV system is 30% of eligible project costs.
    c. Note Eligible solar equipment purchase through debt financing qualifies for the ITC. However, the amount of the base ITC may be reduced by up to 15% if tax exempt bonds are used to finance the PV system.
    d. A Domestic Content Bonus of 10% is also available. To qualify for the domestic content bonus, all structural steel or iron products used must be produced in the United States and a "required percentage" of the total costs of manufactured products (including components) of the facility need to be mined, produced, or manufactured in the United States. The required percentage of manufactured products starts at 40% for all projects beginning construction before 2025, increases to 45% for projects beginning construction in 2025, 50% for projects beginning construction in 2026, and 55% for projects beginning construction after 2026.
    e. The PV solar system at the Wausau Water Treatment Plant would also qualify for a Low-Income Community Bonus of 10% for being located in a low-income community as defined by the New Markets Tax Credit. This Bonus is awarded based on an application process, that is presently oversubscribed and not guaranteed.
    f. It is highly recommended that the City consult with their accountant and professional tax advisor regarding the ITC prior to commencing a project.
    g. Additional information about eligibility and application for Federal Solar Tax Credits for Businesses is available at https://www.energy.gov/eere/solar/federal-solar-tax-credits-businesses.
16. Additional information about eligibility and application for Wisconsin Focus on Energy Rebate is available at https://focusonenergy.com/business/renewables#rebate-info.
17. Additional information about eligibility and application for Wisconsin Public Service Commission Energy Innovation Grant is available at https://psc.wi.gov/Pages/ServiceType/OEI/EnergyInnovationGrantProgram.aspx. Per PSC on 3/11/24, it is not certain if the EI grant will again be offered in 2024.
18. Recommended solar system and equipment warranties include minimum of 2-year workmanship warranty, 25-year warranty on modules and power optimizers (Scenario 3), 12-year warranty on inverters (extended 20-year warranty can also be considered).
19. Pricing for all Scenarios includes costs/fees for common excavation and site preparation (such as leveling, grading, debris removal, erosion control, etc), building of land berm, and building of an access road.
20. Pricing does not include any interest, finance or borrowing charges or fees.
21. Pricing for all Scenarios does not include costs/fees for prairie seeding/restoration and ongoing prairie/land maintenance is not included in the O&M estimate.

Baseline Energy Usage Charts



Baseline Energy Usage Charts



Baseline - Energy Usage (kWh) & Demand (kW) Charts

Heat map of existing energy consumption, kWh (month vs hour of day)

Sum of kWh	Month												
Hour	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
0	5,085	7,155	7,788	7,557	7,556	8,711	8,885	8,204	6,928	7,646	6,281	5,454	87,251
1	4,776	7,180	7,600	7,353	7,384	8,244	8,527	7,784	6,474	6,596	5,727	4,776	82,420
2	4,622	7,216	7,599	7,512	6,987	8,048	8,256	7,644	5,844	5,600	5,028	4,622	78,978
3	4,834	6,953	7,309	7,174	6,476	7,832	7,863	7,357	5,232	4,865	4,763	4,834	75,493
4	4,927	6,351	6,549	5,892	5,689	7,248	7,639	6,950	4,892	4,318	4,526	4,927	69,907
5	4,747	5,660	5,655	5,357	5,520	7,151	7,260	6,829	4,794	4,273	4,272	4,747	66,265
6	4,711	5,587	5,368	6,081	6,144	7,297	7,333	6,861	5,041	4,420	4,227	4,711	67,782
7	4,682	5,107	5,290	5,728	6,473	7,432	7,348	7,181	5,210	4,483	4,283	4,682	67,900
8	4,665	4,784	5,037	5,365	6,526	7,667	7,533	7,233	5,349	4,396	4,340	4,665	67,559
9	4,811	4,448	5,078	4,844	6,457	7,724	7,379	7,180	5,615	4,249	4,352	4,811	66,947
10	4,955	4,271	5,122	4,729	6,441	7,703	7,493	7,446	6,424	4,322	4,490	4,955	68,351
11	5,274	4,282	5,131	4,523	6,337	7,446	7,279	7,173	7,208	4,562	4,756	5,274	69,245
12	5,660	4,434	4,945	4,316	6,427	6,970	7,186	7,399	7,906	4,763	5,024	5,660	70,691
13	6,378	4,361	4,887	4,638	6,478	6,971	7,253	7,603	8,239	5,387	5,359	6,378	73,932
14	7,056	4,635	5,520	4,993	7,027	7,198	7,160	7,970	8,373	6,300	5,563	7,056	78,851
15	7,547	5,615	6,457	5,196	7,432	7,002	7,092	7,812	8,401	7,140	5,786	7,547	83,027
16	8,075	6,038	7,138	5,870	7,688	7,514	7,235	7,877	8,231	7,763	6,324	8,075	87,828
17	8,088	6,275	7,324	6,721	7,846	7,712	7,527	7,827	8,426	8,162	6,732	8,088	90,728
18	8,382	6,663	7,611	7,267	7,995	7,989	8,125	8,244	8,465	8,388	7,173	8,382	94,684
19	8,513	6,945	7,750	7,443	7,881	8,205	8,702	8,303	8,604	8,509	7,426	8,513	96,795
20	8,646	6,991	7,707	7,437	7,941	8,275	8,801	8,366	8,348	8,504	7,449	8,646	97,111
21	8,310	7,062	7,773	7,391	7,961	8,537	9,043	8,383	8,173	8,357	7,485	8,310	96,785
22	7,803	7,128	7,772	7,534	8,019	8,688	9,203	8,564	8,243	8,424	7,291	7,803	96,474
23	6,557	7,199	7,777	7,565	7,919	8,569	9,271	8,284	7,441	8,326	6,550	6,557	92,012
Grand Total	149,103	142,340	156,187	148,485	168,604	186,133	189,394	184,475	167,861	149,754	135,209	149,472	1,927,017

Heat map of existing demand, kW (month vs hour of day)

Max of kW	Month												
Hour	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
0	280	291	332	323	353	437	406	406	405	373	337	280	437
1	298	309	313	323	379	369	388	448	373	317	324	298	448
2	249	330	282	326	300	408	388	404	358	324	317	249	408
3	257	319	282	352	390	405	374	415	323	299	300	257	415
4	258	284	301	343	298	369	364	366	326	280	303	258	369
5	290	279	286	342	284	391	337	389	301	194	189	290	391
6	284	302	338	381	351	344	340	325	481	249	165	284	481
7	209	272	382	389	341	364	341	385	496	285	241	209	496
8	214	313	362	392	349	377	341	380	529	297	286	214	529
9	248	312	388	389	381	384	335	395	518	198	289	248	518
10	269	261	352	383	355	372	341	410	530	257	286	269	530
11	273	241	340	338	365	371	367	360	450	258	272	273	450
12	326	244	284	243	369	366	349	392	370	322	271	326	392
13	326	259	283	343	368	375	358	363	375	318	313	326	375
14	321	330	289	338	365	363	400	402	412	302	280	321	412
15	328	311	291	271	320	368	434	408	378	299	279	328	434
16	337	306	281	271	362	358	352	400	370	376	313	337	400
17	327	346	279	284	365	354	368	391	370	331	276	327	391
18	383	289	277	329	370	402	394	393	378	353	320	383	402
19	350	285	335	285	358	385	397	392	425	431	326	350	431
20	350	285	305	302	371	419	369	400	430	425	284	350	430
21	338	294	322	288	371	380	420	387	372	329	324	338	420
22	345	289	302	328	381	380	374	390	368	343	333	345	390
23	331	304	315	328	396	378	375	405	361	341	327	331	405
Grand Total	383	346	388	392	396	437	434	448	530	431	337	383	530

Shifted Load to Off-Peak - Energy Usage (kWh) & Demand (kW) Charts

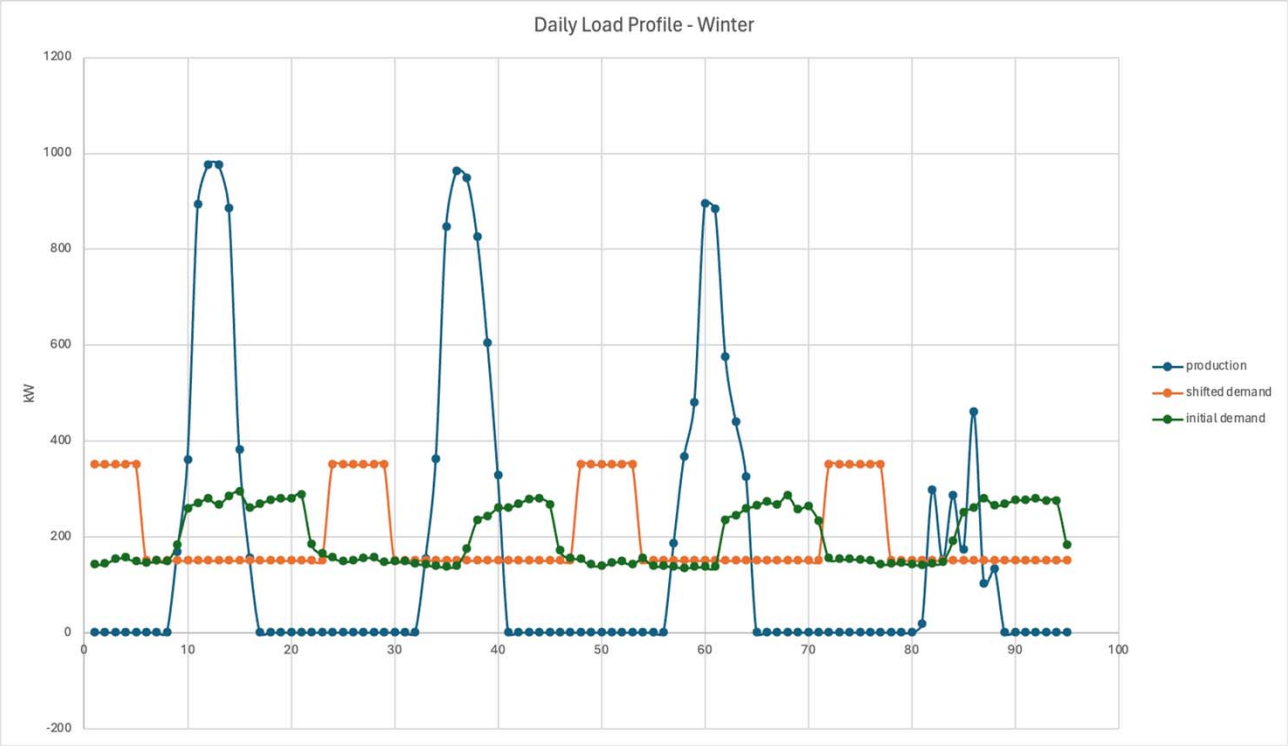
Heat map of shifted energy consumption, kWh (month vs hour of day)

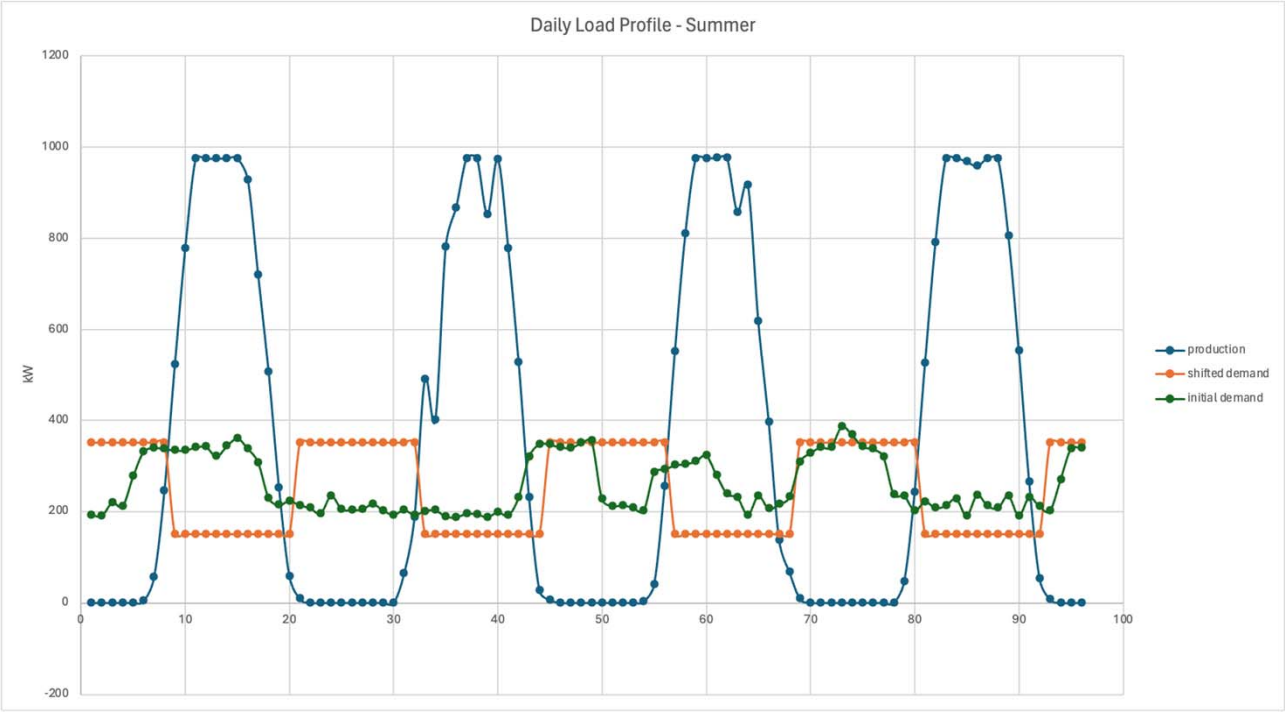
Sum of kWh	Month												
Hour	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
0	10,500	9,800	10,850	10,500	10,850	10,500	10,850	10,850	10,500	10,850	10,500	11,200	127,750
1	10,850	9,800	10,850	10,500	10,850	10,500	10,850	10,850	10,500	10,850	10,500	10,850	127,750
2	10,850	9,800	10,850	10,500	10,850	10,500	10,850	10,850	10,500	10,850	10,500	10,850	127,750
3	10,850	9,800	10,850	10,500	10,850	10,500	10,850	10,850	10,500	10,850	10,500	10,850	127,750
4	10,850	9,800	10,850	10,500	10,850	10,500	10,850	10,850	10,500	10,850	10,500	10,850	127,750
5	10,850	9,800	10,850	10,500	10,850	10,500	10,850	10,850	10,500	10,850	4,500	10,850	121,750
6	4,650	9,800	10,850	10,500	10,850	10,500	10,850	10,850	10,500	10,850	4,500	10,850	115,550
7	4,650	9,800	4,650	4,500	4,650	10,500	10,850	10,850	10,500	4,650	4,500	4,650	84,750
8	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
9	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
10	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
11	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
12	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
13	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
14	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
15	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
16	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
17	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
18	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
19	4,650	4,200	4,650	4,500	4,650	4,500	4,650	4,650	4,500	4,650	4,500	4,650	54,750
20	4,650	4,200	4,650	4,500	4,650	10,500	10,850	4,650	4,500	4,650	4,500	4,650	66,950
21	4,650	4,200	4,650	4,500	4,650	10,500	10,850	4,650	4,500	4,650	4,500	4,650	66,950
22	4,650	4,200	4,650	4,500	10,850	10,500	10,850	10,850	10,500	4,650	4,500	4,650	85,350
23	4,650	9,800	4,650	4,500	10,850	10,500	10,850	10,850	10,500	4,650	4,500	4,650	90,950
Grand Total	148,450	151,200	155,000	150,000	167,400	180,000	186,000	173,600	168,000	155,000	138,000	155,350	1,928,000

Heat map of shifted demand, kW (month vs hour of day)

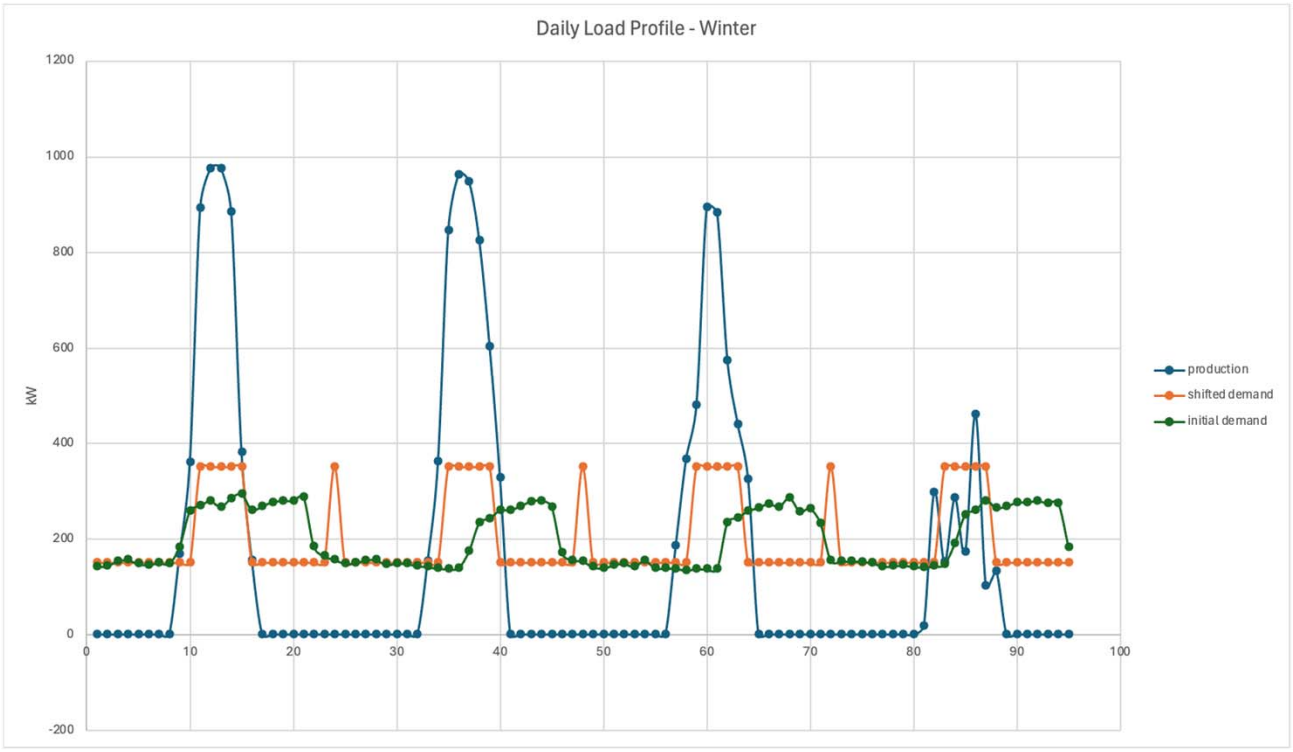
Max of kW	Month												
Hour	1	2	3	4	5	6	7	8	9	10	11	12	Grand Total
0	350	350	350	350	350	350	350	350	350	350	350	350	350
1	350	350	350	350	350	350	350	350	350	350	350	350	350
2	350	350	350	350	350	350	350	350	350	350	350	350	350
3	350	350	350	350	350	350	350	350	350	350	350	350	350
4	350	350	350	350	350	350	350	350	350	350	350	350	350
5	350	350	350	350	350	350	350	350	350	350	150	350	350
6	150	350	350	350	350	350	350	350	350	350	150	350	350
7	150	350	150	150	150	350	350	350	350	150	150	150	350
8	150	150	150	150	150	150	150	150	150	150	150	150	150
9	150	150	150	150	150	150	150	150	150	150	150	150	150
10	150	150	150	150	150	150	150	150	150	150	150	150	150
11	150	150	150	150	150	150	150	150	150	150	150	150	150
12	150	150	150	150	150	150	150	150	150	150	150	150	150
13	150	150	150	150	150	150	150	150	150	150	150	150	150
14	150	150	150	150	150	150	150	150	150	150	150	150	150
15	150	150	150	150	150	150	150	150	150	150	150	150	150
16	150	150	150	150	150	150	150	150	150	150	150	150	150
17	150	150	150	150	150	150	150	150	150	150	150	150	150
18	150	150	150	150	150	150	150	150	150	150	150	150	150
19	150	150	150	150	150	150	150	150	150	150	150	150	150
20	150	150	150	150	150	350	350	150	150	150	150	150	350
21	150	150	150	150	150	350	350	150	150	150	150	150	350
22	150	150	150	150	350	350	350	350	350	150	150	150	350
23	150	350	150	150	350	350	350	350	350	150	150	150	350
Grand Total	350	350	350	350	350	350	350	350	350	350	350	350	350

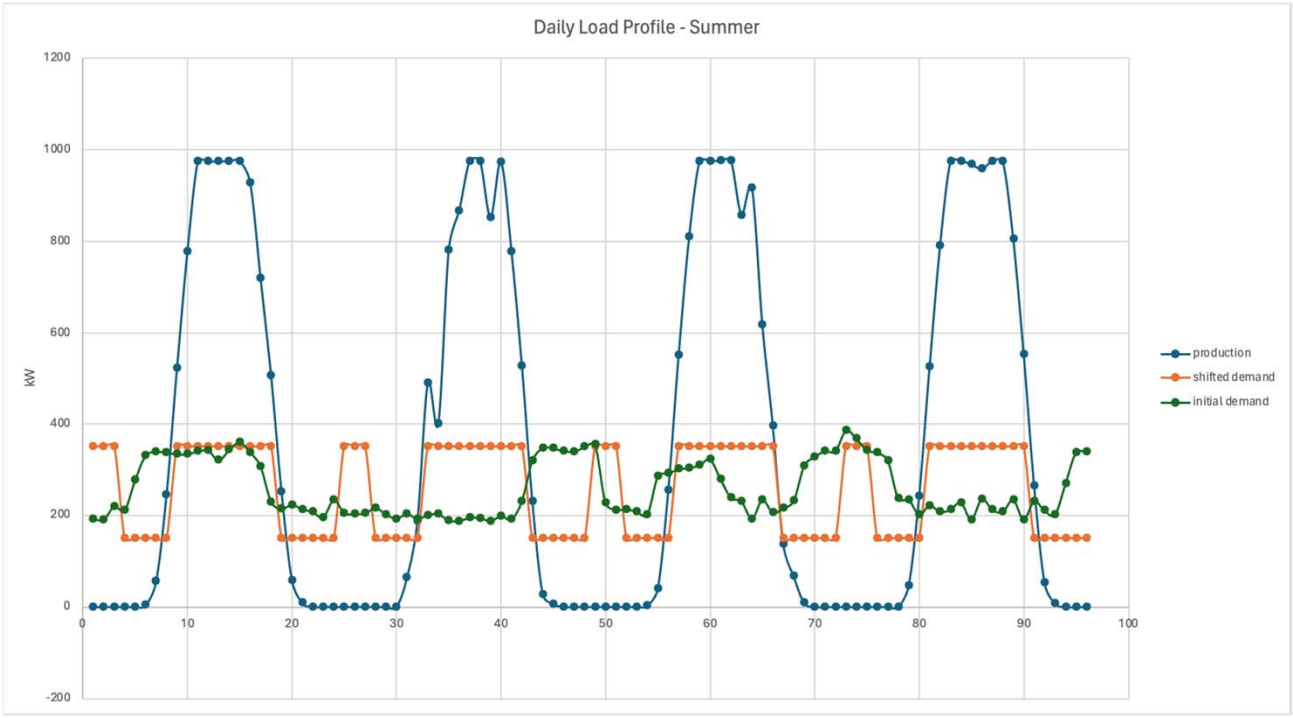
Sample Load Profiles – Shifted Load to Off-Peak





Sample Load Profiles – Shifted Load to Solar Production





Utility Bill Components

Business Solutions Center 877-444-0888
Electric Emergencies 800-450-7240
Gas Emergencies 800-450-7280

Bill Date	Account Number	Next Meter Read Date	Amount Due	Payment Due Date
10/13/2023	0401272549-00087	10/31/2023	$40,508.19	11/27/2023

Customer Name WAUSAU WATER WORKS
Service Address 1801 BURECK AVE
WAUSAU WI 54401

Activity Since Last Bill

09/12/2023	Previous Balance	$18,962.40
	Balance	$18,962.40
	Total Current Charges	$21,545.79
	Total Current Balance	$40,508.19

Electric Service
Elec Sm Coml & Ind TOU Secondary Cg-20

Meter 6003352

Actual Reading 10/01/2023	2402	
Set Reading 09/01/2023	-2122	
	280	
Meter Constant	x 600	
Total Electric Use	168000 KWH	

Energy Charges/Credits		
Customer Charge	30 Days at $3.05750	$91.73
Demand Charges/Credits		
Customer Demand	529 KW @ 09/06/2023 11:00 * $2.399	$1,269.07
On-Peak	529 KW @ 09/06/2023 11:00 * $18.449	$9,759.52
Off-Peak	09/06/2023 07:45; 480 KW at $0	$0.00
Energy Charges/Credits		
On-Peak	50,941 KWH at $0.07767	$3,956.59
Off-Peak	116,950 KWH at $0.04569	$5,343.45
Fuel Cost Adjustment - Prior Year	167,891 KWH at $0.00138	$231.69
Other Service Charges/Credits		
WI Low Income Assistance Fee		$37.45
	Subtotal:	**$20,689.50**
	Electric Service Total:	**$20,689.50**

Gas Service
Gas Sm Coml & I

Meter 445470

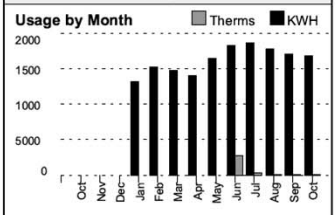
Local Distributio
Customer Charg $30.58
Distribution $271.67
Gas Supply Serv
Base Gas $20.39
PGA $240.47
PGA $25.88
$356.29

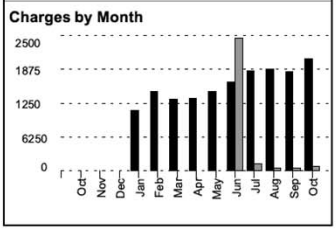
ACCOUNT NUMBER /EC_PDF_Out 24406 {12}

Account Summary
Bill Period: 09/01/2023 to 10/02/2023

	Oct 2023	Sep 2023
Billing Days	32	30
Avg Temp	62°F	66°F
Heating Deg Days	109	22
Cooling Deg Days	76	131
KWH Used	167891	171605
Avg KWH / Day	5246.6	5720.2
Therms Used	1680.1	1268.6
Avg Therms / Day	52.5	42.3

Graphs





Utility Bill Components

Fixed =	$91.73	0.4%
Demand =	$11,028.59	53.3%
Energy =	$9,531.73	46.1%
Other =	$37.45	0.2%
Total =	$20,689.50	100%

Please return this stub with your payment.

WPS

ACCOUNT NUMBER: 0401272549-00087

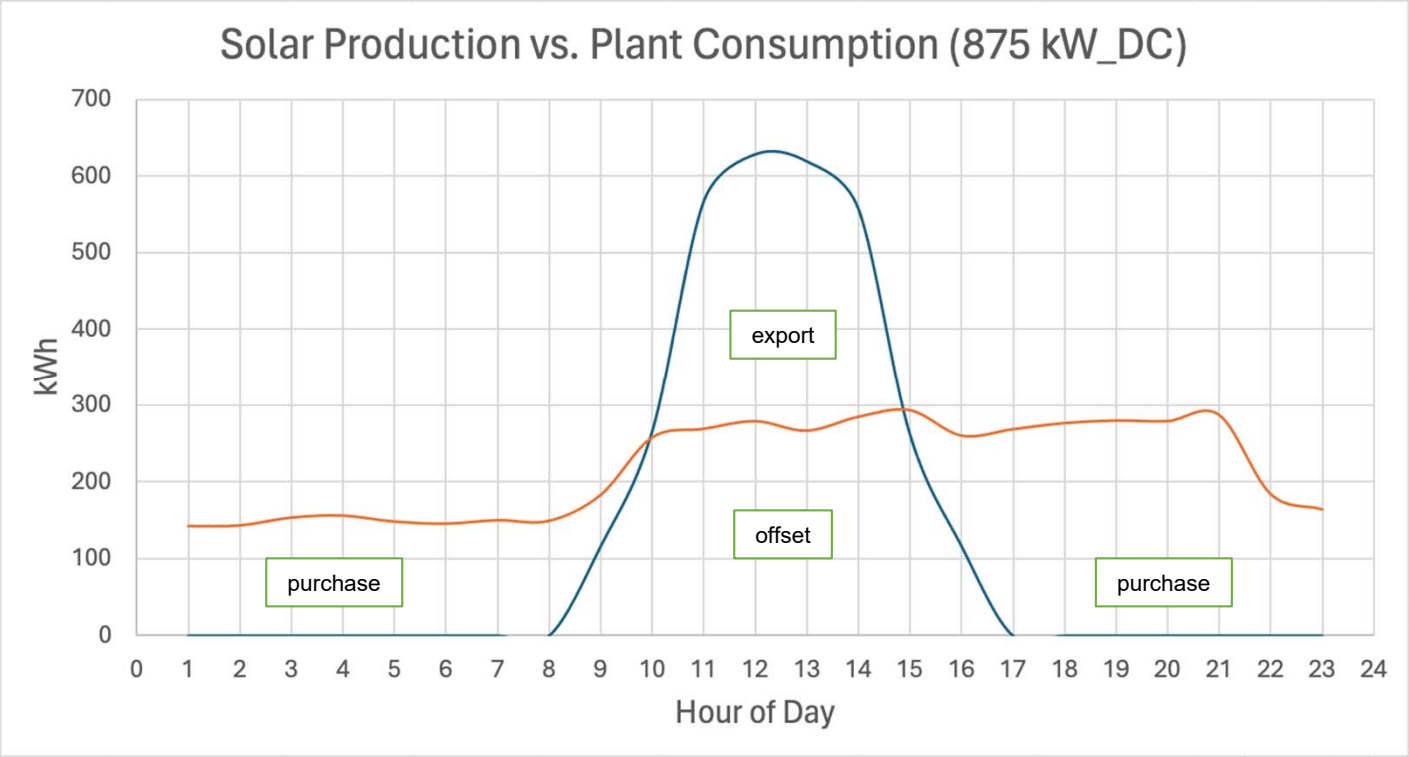
Amount Due By 11/27/2023 $40,508.19
A 1% late fee will be charged on any unpaid balance
Please write your account number on your check
Amount Enclosed

WAUSAU WATER WORKS
407 GRANT ST
WAUSAU WI 54403-4737

Wisconsin Public Service
PO Box 6040
Carol Stream IL 60197-6040

0110401272549000872 4004050819

Purchase, Offset, and Export for Parallel Generation Example



Offset & Purchase Rates (CG20)

Season	Time	Rate ($/kWh)	Customer Demand ($/kW)	Demand Charge ($/kW)
Winter (Oct-May)	On-peak (Mon-Fri 8AM-1PM & 5PM-9PM)	$0.0728	$2.399	$11.992
Winter (Oct-May)	Off-peak	$0.4282	$2.399	$0.000
Summer (June-Sep)	On-peak (Mon-Fri 8AM-6PM)	$0.0728	$2.399	$18.449
Summer (June-Sep)	Off-peak	$0.4282	$2.399	$0.000

Avoided Energy and Capacity Cost Rates (PG-2B)

Season	Time	Rate ($/kWh)
Winter (Oct-May)	On-peak (Mon-Fri 7AM-10PM)	$0.07013
Winter (Oct-May)	Off-peak	$0.02904
Summer (June-Sep)	On-peak (Mon-Fri 7AM-11PM)	$0.08132
Summer (June-Sep)	Off-peak	$0.03041

Utility Rate Structure

WISCONSIN PUBLIC SERVICE CORPORATION

P.S.C.W. Volume No. 7 — 33rd Rev. Sheet No. E6.10
Replaces 32nd Rev. Sheet No. E6.10
Amendment 789 Schedule Cg-20

Small Comm'l and Indus. Service-Time of Use **Electric**

AVAILABILITY

This schedule is available to small commercial and industrial customers where one or both of the following have been exceeded for three consecutive months and also exceeded for at least one billing month in each succeeding rolling 12-billing month period:

1. Total demand of 100kW; or
2. Total monthly energy consumption of 25,000 kWh.

If the customer's system demand falls below 100 kW or the customer's energy consumption falls below 25,000 kWh for 12 consecutive billing months, the Company will complete a billing comparison using the customer's previous 12 months of consumption showing the customer's historical bills under the Cg-20 rate schedule and the Cg-5 rate schedule. If these bill comparisons show that the customer had a lower bill under the Cg-20 rate schedule than they would have had under the Cg-5 rate schedule, the customer will be notified that they can opt to stay on the Cg-20 rate schedule or be moved to the Cg-5 rate schedule. If the customer does not respond within 15 days of notification, the customer will remain on the Cg-20 rate schedule. This provision may be modified in future rate case proceedings.

WISCONSIN PUBLIC SERVICE CORPORATION

P.S.C.W. Volume No. 7 — 25th Rev. Sheet No. E6.01
Replaces 24th Rev. Sheet No. E6.01
Amendment 794 Schedule Cg-5

Small Commercial and Industrial Service **Electric**

AVAILABILITY

This schedule is available to small commercial and industrial customers where:

1. Total monthly energy consumption has exceeded 12,500 kwh for three consecutive months and, after qualifying at least once in succeeding rolling 12 month periods; or
2. Does not meet the availability criteria for the Cg-20 and Cp rate schedules.

For new customers the company may, at its discretion, waive the three month qualification period when, in the company's judgment, the customer would obviously meet the qualification criteria. The company shall inform the customer in writing that failure of the customer to meet the qualification criteria after a waiver is granted will result in:

1. The customer being immediately placed on the appropriate rate schedule, and
2. Backbilling to reflect the appropriate rate schedule from the date the waiver was originally effective.

Utility Rate Structure

WISCONSIN PUBLIC SERVICE CORPORATION

P.S.C.W. Volume No. 7 — 33rd Rev. Sheet No. E6.10
Replaces 32nd Rev. Sheet No. E6.10
Amendment 789 Schedule Cg-20

Small Comm'l and Indus. Service-Time of Use — **Electric**

AVAILABILITY
This schedule is available to small commercial and industrial customers where one or both of the following have been exceeded for three consecutive months and also exceeded for at least one billing month in each succeeding rolling 12-billing month period:

CUSTOMER CHARGE
For customers with company metering equipment installed at:

	Daily
Under 6,000 volts	$3.0575
6,000 volts to 15,000 volts inclusive	$5.5890

The above listed voltages are phase-to-ground for wye-connected company systems and phase-to-phase for delta-connected company systems.

CUSTOMER DEMAND $2.399/kW
Per kW of maximum demand during the current or preceding 11 months.

DEMAND CHARGE
ON-PEAK
a. Winter (Calendar Months Oct-May): $11.992/kW
8AM - 1PM; & 5PM - 9PM; Mon - Fri (Except Holidays)

b. Summer (Calendar Months Jun-Sep): $18.449/kW
8AM - 6PM; Mon - Fri (Except Holidays)

OFF-PEAK
All Hours Not in On-Peak Period $0/kW

ENERGY CHARGE
ON-PEAK
a. Winter (Calendar Months Oct-May): $0.07278/kWh
8AM - 1PM; & 5PM - 9PM; Mon - Fri (Except Holidays)

b. Summer (Calendar Months Jun-Sep): $0.07278/kWh
8AM - 6PM; Mon - Fri (Except Holidays)

OFF-PEAK
All Hours Not in On-Peak Period $0.04282/kWh

Utility Rate Structure

WISCONSIN PUBLIC SERVICE CORPORATION

P.S.C.W. Volume No. 7

14th Rev. Sheet No. E4.19
Replaces 13th Rev Sheet No. E4.19
Amendment 794 Schedule PG-2B

Parallel Generation-Purchase by WPSC **Electric**

EFFECTIVE IN
All territory served.

AVAILABILITY
To customers who (1) purchase power from the Company under a time-of-use tariffed rate, (2) satisfy the requirements of "qualifying facility" status under Part 292 of the Federal Energy Regulatory Commission's regulations under the Public Utility Regulatory Policies Act of 1978, (3) generate electrical energy with total customer owned generating capacity of 1,000 kW or less, and (4) desire to sell electrical energy to the Company.

Avoided Energy Cost Rate:
The customer will receive a credit on their bill equal to the kilowatt hours supplied to the Company multiplied by the customer's Avoided Energy Cost Rate (shown below). The customer's Avoided Energy Cost Rate is not subject to any adjustments, such as the adjustment for cost of fuel, or any other miscellaneous surcharges or adjustments. This tariff is intended to provide payment for energy sent to the Company.

		Secondary	Primary	Transmission
On Peak				
	Winter	$0.04219	$0.04147	$0.04095
	Summer	$0.05338	$0.05247	$0.05182
Off Peak				
	Winter	$0.02904	$0.02855	$0.02819
	Summer	$0.03041	$0.02989	$0.02952

The Avoided Energy Cost Rate shall be updated on January 1 of each year and will be calculated as follows:
Avoided Energy Cost Rate = A x (1 + B), where
A = The forecasted January through December load weighted average Day- Ahead Locational Marginal Pricing for the WPS.WPSM pricing load zone approved in the Company's annual fuel plan.

Avoided Capacity Cost Rate: The customer will receive a capacity credit equal to the amount of energy that is supplied to the Company during the designated on-peak period.

	Secondary	Primary	Transmission
All on-peak excess energy, per kWh	$0.02794	$0.02713	$0.02679

The Avoided Capacity Cost Rate will be updated each June 1 to reflect the current MISO Cost of New Entry (CONE) value for the applicable Local Resource Zone and Planning Year, and will be adjusted for distribution and transmission line losses based on the most recently authorized values.

Avoided Transmission Cost Rate:
The customer will receive a credit on their bill equal to the kilowatt-hours supplied to the Company multiplied by the Avoided Transmission Cost Rate (shown below).

All excess energy, per kWh $0.00000

ON-PEAK HOURS
Winter (calendar months of October through May):
7:00 AM to 10:00 PM; Monday through Friday (except holidays).

Summer (calendar months of June through September): 7:00 AM to 11:00 PM; Monday through Friday (except holidays).

OFF-PEAK HOURS
All hours not listed as on-peak hours.