Joint Special Meeting of the Village of Lindenhurst
And Lindenhurst Park District
Monday, August 26, 2024
7:15 p.m.

AGENDA

I. Call to Order

II. Pledge of Allegiance

III. New Business

a. Presentation, discussion, and staff direction regarding the installation of a Solar (photovoltaic or 'PV') system at 2200 Grass Lake Road

IV. Public Comment

V. Adjournment

Rules for Public Comment: The Village of Lindenhurst welcomes comments from the public during the designated sections of the Village Board meeting. We ask that you keep your comments respectful, civil, and constructive to matters of public policy. Those wishing to comment will be limited to three (3) minutes per person and the total time allotted for public comment will be thirty (30) minutes. The Chair will recognize speakers and may deny someone who has previously addressed the Board an additional opportunity to speak. (VOL Village Code §30.22)

DATE: August 26, 2024

TO: Mayor and Trustees of the Village of Lindenhurst
President and Commissioners of the Lindenhurst Park District

FROM: Clay T. Johnson, Village Administrator
David Mohr Jr., Executive Director

RE: **Installation of Solar Photovoltaic System**

On Monday, August 26th, the Lindenhurst Village Board and Lindenhurst Park District Board will convene in a joint meeting to hear and discuss the possibility of installing a solar photovoltaic (PV) system on property currently held by the Lindenhurst Park District at 2200 W. Grass Lake Road.

The proposed system would be located to the north and rear of the Lindenhurst Park District's Lippert Community Center and skateboard park. This vacant space, bounded by Hastings Creek and multi-use path has long been viewed as expansion space for the Park District. Without expansion plans imminent, utilizing the space in a more productive manner has been an attractive possibility. The opportunity to convert the use of this space for green electricity generation dates back to 2019 when the Village and Park District began discussions with Tesla who had interest in installing their own solar system on the property. Ultimately, this project was shelved as the Park District and Village could not agree to terms of the installation with Tesla.

More recently the Park District was approached by General Energy Corporation (GEC) about installing a solar array in this area once again. While the system would be constructed entirely on the Park District's property, the power generated would help to offset electricity costs for both the Park District and the Village's wastewater treatment facility.

GEC's proposal, which is enclosed, would install over 2,000 panels with nine (9) inverters in an area of approximately 2.5-3 acres. In exchange for the use of the land, the Village and Park District would purchase electricity at a reduced rate than our default electricity rate from ComEd. The proposal indicates that, in year one of an agreement and at a rate of $0.05/kWh, the Park District could save over $3,700, and the Village could save over $23,000 annually.

The savings would not necessarily be realized based on the reduced cost for the supply of energy to our facilities. Both the Park District and Village aggregate and solicit lowest cost supply services through NIMEC. The Village's wastewater treatment facility, well houses, and lift stations are currently on an aggregation program, supplied by Dynegy, which runs through May 2026. Instead, the savings for the Village and Park District would result from the avoidance cost of delivery service charges implemented by, in this case, Dynegy. These delivery costs can be almost as costly as the electric supply charges themselves depending on the demand of the facility.

The exact savings generated from the installation of the solar system is based on a number of variables such as inflationary increases to the ComEd/Dynegy default rate, weather, delivery fees. Not all delivery costs paid by the Village or Park District would be eliminated since the plant will continue to operate in inclement weather periods when we cannot draw electricity from the solar system. Therefore, the exact savings is somewhat unknown. A twenty-year analysis provided by the vendor in their proposal shows that the cumulative savings could be approximately $55,000 and $700,000 for the Park District and Village respectfully. As an added benefit, the project could offset the contribution of almost 1,000 Metric tons of carbon dioxide.

After the end of the twenty-year agreement, the Park District and Village could choose to continue to operate and maintain the system or build into the agreement that the operator must remove the system from the site. There will also be on opportunity to buy-out the ownership of the solar system and own the system ourselves. At that time maintenance and replacement of the system is on the Village and Park District, but that move would eliminate the payment for electric costs entirely. Clearly, a cost benefit of such an action would need to be performed to determine if and when it is in the best interest of the Village and Park District. The proposal provides a 25-year warranty on the solar panels, but indicates that their useful life could be up to 30 years.

What is described above is considered a 'PPA' arrangement where we would pay a fixed rate for electric for the life of the contract. We are also investigating a scenario where the utility company pays for the system upfront, but the Village/Park District is the owner. In this case, we would benefit from the federal credits, SREQs, ComEd incentives, and partial avoidance costs of electric supply and delivery. We would then pay a lease payment back to the utility. There will be more information on this option presented on Monday.

The purpose of Monday's joint meeting between the Village and Park District is to gain feedback and direction on each Board's desire to move forward with crafting an

agreement and an arrangement that each group is most comfortable exploring. No final decisions are recommended to be made during this discussion as the details of this joint agreement will need to be sorted out between the respective staffs and legal counsel of each party. A representative for GEC will be present to discuss their operation, solicit feedback, and answer any raised questions of the members of each Board.

GEC has experience building solar arrays for other municipalities but that are primarily further downstate – Kankakee County, Sugar Grove, Urbana, and the Urbana Park District.

When GEC originally approached the Park District, the proposal included the installation of a couple of EV-chargers at the Community Center. The cost of the purchase and installation of these Level 1 chargers was built into the financing of the proposal at about an additional $0.001/kWh per year for twenty years. If this is something that is desired by one, or both groups the proposal will need to be revised for that provision. The enclosed proposal does not include any EV chargers.

-SINCE-
1988
Lindenhurst Park District

Solar Project

Without EV Chargers

August 26, 2024

General Energy Corporation
Energy, Innovations, Solutions
Leaders in Energy Efficiency

400 E State Pkwy, Suite 121
Schaumburg, IL 60173
www.generalenergycorp.com
P:708.386.6000

Revenue Task Force
Energize Your Future with Solar.

Jim Taylor
1900 E Golf Rd, Ste 950, Schaumburg, Il.
RevenueTaskForce.com 815-403-1702

Revenue Task Force Proud Member Of

IAPD Illinois Association of Park Districts

tma Technology & Manufacturing Association

IFMA Chicago Chapter
International Facility Management Association

Project Funding Partners

DSDJJI

Constellation.

IFA ILLINOIS FINANCE AUTHORITY

Thank you for your interest in General Energy Corporation's (GEC) renewable energy and energy efficiency services. GEC has been a leading provider of these services **since 1985**, and we are pleased to offer you our Solar PV system solution for onsite electricity generation.

Our Solar PV system solution provides a clean and reliable source of electricity, reducing operating expenses while simultaneously benefiting the environment by reducing greenhouse gas emissions. We are committed to delivering high-quality and sustainable energy solutions to meet your needs.

We appreciate the opportunity to serve your renewable energy and energy efficiency needs and look forward to discussing how we can assist you further.

Power plant payouts on biggest U.S. grid to rise to record

By Naureen S. Malik and Mark Chediak, Bloomberg

Credit: Bloomberg

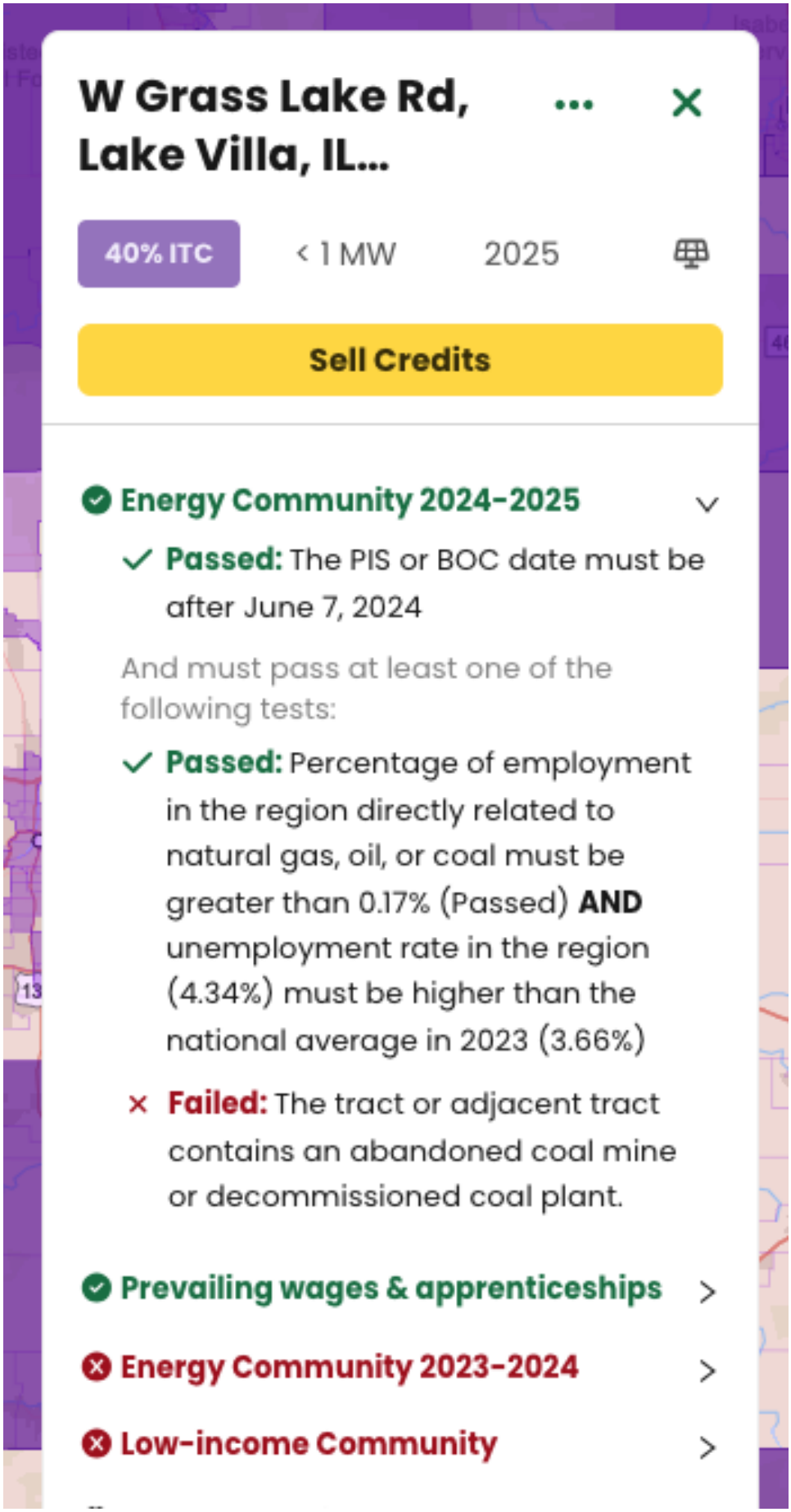
July 30, 2024 04:23 PM UPDATED 2 MINUTES AGO

The cost to keep the lights on for 65 million Americans who tap into the largest US electrical grid will rise 833% starting in June.

Generators that provide electricity to the 13-state grid that stretches from New Jersey to Illinois will get a record $269.92 per megawatt-day from utilities to provide capacity over a 12-month period starting in June, according to results of an auction by grid operator PJM Interconnection LLC disclosed Tuesday. That's more than a ninefold increase from $28.92 in last year's auction.

To understand what will happen about the "Capacity Increase" coming in June 2025.
Whatever rate you are paying now (from the supplier without ComEd's delivery charge) add an additional $0.03 cents to that charge.

****Solar energy produced on-site has no ComEd Delivery Charge**


W Grass Lake Rd, Lake Villa, IL...
40% ITC
< 1 MW
2025
Sell Credits
Energy Community 2024-2025
Passed: The PIS or BOC date must be after June 7, 2024
And must pass at least one of the following tests:
Passed: Percentage of employment in the region directly related to natural gas, oil, or coal must be greater than 0.17% (Passed) AND unemployment rate in the region (4.34%) must be higher than the national average in 2023 (3.66%)
Failed: The tract or adjacent tract contains an abandoned coal mine or decommissioned coal plant.
Prevailing wages & apprenticeships
Energy Community 2023-2024
Low-income Community

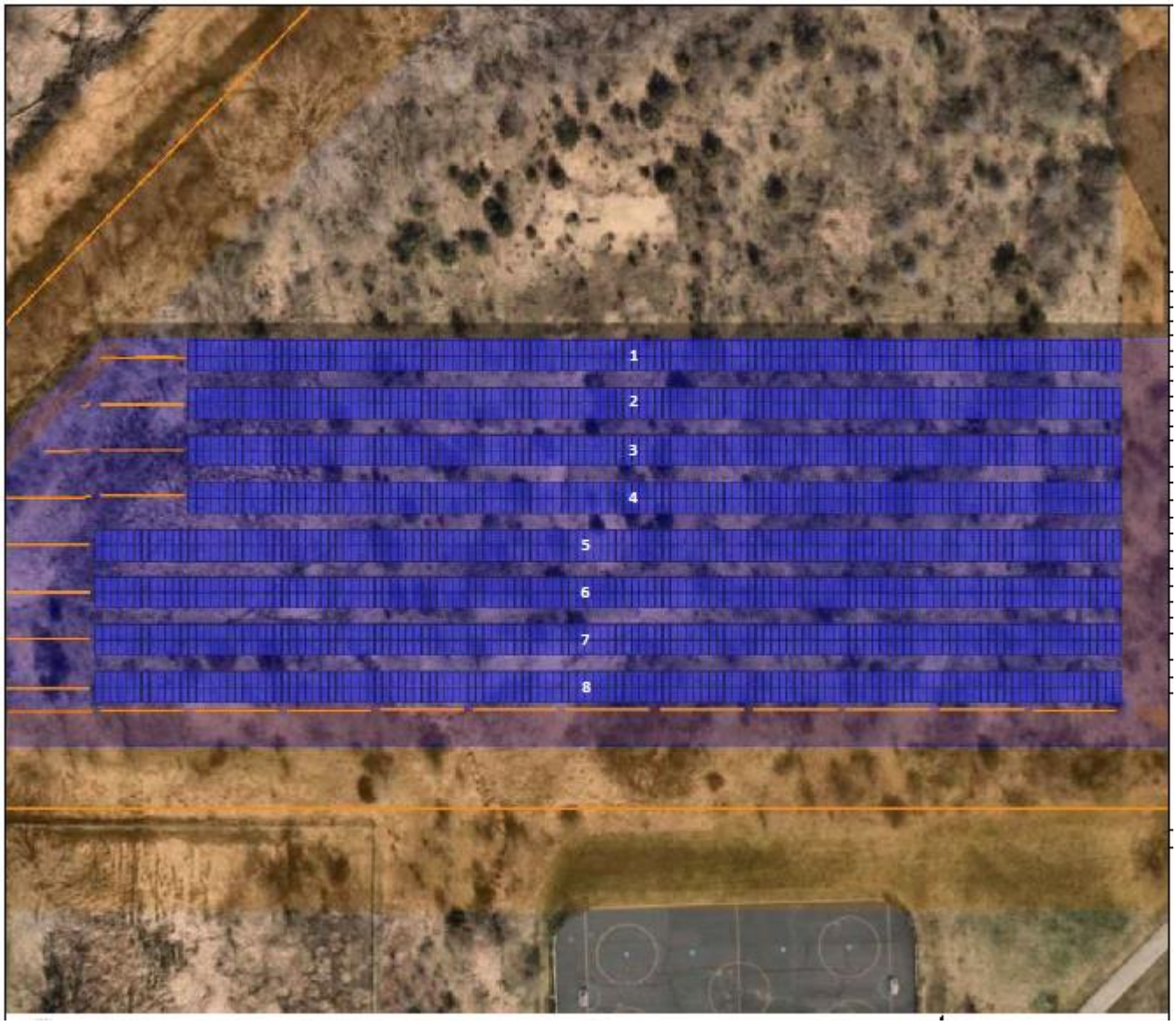
Solar PV System Assessment
Lindenhurst PD – 2200 W Grass Lake Rd. Lindenhurst, IL 60046
8/23/2024

Proposed Solar Panel: 590-Series: Q.PEAK DUO XL-G11S.3 590

Proposed Racking System: TERRASMART GLIDE WAVE

Total Number of Panels: 2,016
Total Number of Inverters: 9

Cash Cost Solar Array
$2,206,149



20 Year PPA – Summary – Water Treatment Only

System Size (DC)	1077	kW
Panel Production Warranty	30	Years
Annual kWh production from Solar System	1,279,816	kWh
20 Year PPA Rate ($/kWh) with 0% Escalator	**$0.057**	
Annual Lease Payment to Park District	**$5,000/yr**	
Annual Greenhouse Gas Emissions Reduction	908	CO_2 Metric Tons

Projected/Estimated Savings

Water Treatment Plant

20 Year PPA Cash Flow

Year	Utility Rate	PPA Rate	Savings	Cumulative Savings
Year 1	$0.0710	$0.0570	$17,917	$17,917
Year 2	$0.0721	$0.0570	$19,280	$37,198
Year 3	$0.0731	$0.0570	$20,664	$57,862
Year 4	$0.0742	$0.0570	$22,068	$79,930
Year 5	$0.0754	$0.0570	$23,493	$103,423
Year 6	$0.0765	$0.0570	$24,940	$128,363
Year 7	$0.0776	$0.0570	$26,408	$154,771
Year 8	$0.0788	$0.0570	$27,899	$182,670
Year 9	$0.0800	$0.0570	$29,411	$212,082
Year 10	$0.0812	$0.0570	$30,947	$243,028
Year 11	$0.0824	$0.0570	$32,505	$275,534
Year 12	$0.0836	$0.0570	$34,087	$309,621
Year 13	$0.0849	$0.0570	$35,693	$345,313
Year 14	$0.0862	$0.0570	$37,322	$382,636
Year 15	$0.0875	$0.0570	$38,976	$421,612
Year 16	$0.0888	$0.0570	$40,655	$462,267
Year 17	$0.0901	$0.0570	$42,359	$504,627
Year 18	$0.0914	$0.0570	$44,089	$548,716
Year 19	$0.0928	$0.0570	$45,845	$594,560
Year 20	$0.0942	$0.0570	$47,626	$642,187
Total 20 Year Savings			**$642,187**	

Cash Option – Water Treatment

System Size (DC)	1,077.00 kW
Panel Production Warranty	30 Years
Annual kWh production from Solar System (Per Year)	1,279,816 kWh
% Energy Consumption Offset	100%
Annual ($) production savings (Per Year)	**$90,867**
Annual Greenhouse Gas Emissions Reduction (Per Year)	**908 CO_2 Metric Tons**

Annual Figures	Annual Quantity kWh	×	All-in energy Price $/kWh	-	Annual KWh Offset from Solar	×	All-in energy Price Offset by Solar $/kWh	=	Annual Cost	Annual Savings	Monthly Savings
Current Annual Usage	1,279,816	×	$0.083	-	0	×	$0.00	=	$106,225		
Proposed Annual Usage With Solar	1,279,816	×	$0.083	-	1,279,816	×	$0.071	=	$15,358	$90,867	$7,572

Inverter Rebate ($)	($269,250)
***Net Project Cost Cash ($)**	**$2,206,149**
Tax credits and Depreciation	
Federal Solar Tax Credit (40%) - ($)	$882,460
Approvals on Incentives and Rebates	
Illinois IPA SREC Amount (Paid quarterly over 7 years)	$875,463
Total Incentives	**$1,757,922**

Cash Solar Cost	**$2,206,149**
Minus Solar Incentives	**$1,757,922**
Cost	**$ 448,227**

Then saving $90,867 per year if rates stay the same.

30 Year Cash Flow

Project Economics Summary							
Years	***Annual Project Cost***	***Annual Electricity Cost Savings***	***Annual Illinois SREC Incentives***	***Federal Investment Tax Credit***	***Annual Cash Flow***	***Cumulative Cash Flow***	***Without Solar***
1	($2,206,149)	$90,867	$118,515	$882,460	($1,114,307)	($1,114,307)	($90,867)
2	-	$93,139	$118,515	-	$211,654	($902,654)	($93,139)
3	-	$95,467	$118,515	-	$213,982	($688,672)	($95,467)
4	-	$97,854	$118,515	-	$216,369	($472,303)	($97,854)
5	-	$100,300	$118,515	-	$218,815	($253,488)	($100,300)
6	-	$102,808	$118,515	-	$221,323	($32,165)	($102,808)
7	-	$105,378	$118,515	-	$223,893	$191,728	($105,378)
8	-	$108,012	-	-	$108,012	$299,740	($108,012)
9	-	$110,713	-	-	$110,713	$410,453	($110,713)
10	-	$113,480	-	-	$113,480	$523,933	($113,480)
11	-	$116,317	-	-	$116,317	$640,250	($116,317)
12	-	$119,225	-	-	$119,225	$759,476	($119,225)
13	-	$122,206	-	-	$122,206	$881,681	($122,206)
14	-	$125,261	-	-	$125,261	$1,006,943	($125,261)
15	-	$128,393	$45,857	-	$174,250	$1,181,193	($128,393)
16	-	$131,602	-	-	$131,602	$1,312,795	($131,602)
17	-	$134,892	-	-	$134,892	$1,447,687	($134,892)
18	-	$138,265	-	-	$138,265	$1,585,952	($138,265)
19	-	$141,721	-	-	$141,721	$1,727,674	($141,721)
20	-	$145,264	-	-	$145,264	$1,872,938	($145,264)
21	-	$148,896	-	-	$148,896	$2,021,834	($148,896)
22	-	$152,618	-	-	$152,618	$2,174,453	($152,618)
23	-	$156,434	-	-	$156,434	$2,330,887	($156,434)
24	-	$160,345	-	-	$160,345	$2,491,231	($160,345)
25	-	$164,353	-	-	$164,353	$2,655,585	($164,353)
26	-	$168,462	-	-	$168,462	$2,824,047	($168,462)
27	-	$172,674	-	-	$172,674	$2,996,721	($172,674)
28	-	$176,991	-	-	$176,991	$3,173,711	($176,991)
29	-	$181,415	-	-	$181,415	$3,355,127	($181,415)
30	-	$185,951	-	-	$185,951	$3,541,077	($185,951)
Total	**($2,206,149)**	**$3,989,304**	**$875,463**	**$882,460**	**$3,541,077**		($3,989,304)

Lindenhurst Park District (Cash and 5 Year EME Option)

System Size (DC)	102.61 kW
Panel Production Warranty	30 Years
Annual kWh production from Solar System (Per Year)	121,933 kWh
% Energy Consumption Offset	100%
Annual ($) production savings (Per Year)	**$9,877**
Annual Greenhouse Gas Emissions Reduction (Per Year)	**86 CO_2 Metric Tons**

Annual Figures	Annual Quantity kWh	×	All-in energy Price $/kWh	-	Annual KWh Offset from Solar	×	All-in energy Price Offset by Solar $/kWh	=	Annual Cost	Annual Savings	Monthly Savings
Current Annual Usage	121,933	×	$0.105	-	0	×	$0.00	=	$12,803		
Proposed Annual Usage With Solar	121,933	×	$0.105	-	121,933	×	$0.081	=	$2,926	$9,877	$823

Inverter Rebate ($)	($25,653)
***Net Project Cost Cash ($)**	**$222,582**
Constellation 5 Year EME Funding Cost ($)	**$302,711**
Tax credits and Depreciation	
Federal Solar Tax Credit (40%) - ($)	$121,084
Approvals on Incentives and Rebates	
Illinois IPA SREC Amount (Paid quarterly over 7 years)	$112,114
Total Incentives	**$233,198**

Funded Solar Cost $302,711
Minus Total Incentives $233,198
Cost $ 69,513

Then saving $9,877 per year
if rates stay the same.

30 Year Cash Flow Summary (Cash)

Project Economics Summary							
Years	***Annual Project Cost***	***Annual Electricity Cost Savings***	***Annual Illinois SREC Incentives***	***Federal Investment Tax Credit***	***Annual Cash Flow***	***Cumulative Cash Flow***	***Without Solar***
1	($222,582)	$9,877	$15,130	$89,033	($108,542)	($108,542)	($9,877)
2	-	$10,123	$15,130	-	$25,254	($83,288)	($10,123)
3	-	$10,377	$15,130	-	$25,507	($57,781)	($10,377)
4	-	$10,636	$15,130	-	$25,766	($32,015)	($10,636)
5	-	$10,902	$15,130	-	$26,032	($5,983)	($10,902)
6	-	$11,174	$15,130	-	$26,305	$20,322	($11,174)
7	-	$11,454	$15,130	-	$26,584	$46,906	($11,454)
8	-	$11,740	-	-	$11,740	$58,646	($11,740)
9	-	$12,034	-	-	$12,034	$70,680	($12,034)
10	-	$12,334	-	-	$12,334	$83,015	($12,334)
11	-	$12,643	-	-	$12,643	$95,657	($12,643)
12	-	$12,959	-	-	$12,959	$108,616	($12,959)
13	-	$13,283	-	-	$13,283	$121,899	($13,283)
14	-	$13,615	-	-	$13,615	$135,514	($13,615)
15	-	$13,955	$6,201	-	$20,157	$155,671	($13,955)
16	-	$14,304	-	-	$14,304	$169,975	($14,304)
17	-	$14,662	-	-	$14,662	$184,637	($14,662)
18	-	$15,028	-	-	$15,028	$199,665	($15,028)
19	-	$15,404	-	-	$15,404	$215,069	($15,404)
20	-	$15,789	-	-	$15,789	$230,859	($15,789)
21	-	$16,184	-	-	$16,184	$247,042	($16,184)
22	-	$16,589	-	-	$16,589	$263,631	($16,589)
23	-	$17,003	-	-	$17,003	$280,634	($17,003)
24	-	$17,428	-	-	$17,428	$298,062	($17,428)
25	-	$17,864	-	-	$17,864	$315,927	($17,864)
26	-	$18,311	-	-	$18,311	$334,237	($18,311)
27	-	$18,768	-	-	$18,768	$353,005	($18,768)
28	-	$19,238	-	-	$19,238	$372,243	($19,238)
29	-	$19,719	-	-	$19,719	$391,962	($19,719)
30	-	$20,211	-	-	$20,211	$412,173	($20,211)
Total	**($222,582)**	**$433,608**	**$112,114**	**$89,033**	**$412,173**		($433,608)

Decision to GO Solar or NOT has a Value Difference of: $845,781

30 Year Cash Flow Summary (EME)

Project Economics Summary							
Years	***Annual Project Cost***	***Annual Electricity Cost Savings***	***Annual Illinois SREC Incentives***	***Federal Investment Tax Credit***	***Annual Cash Flow***	***Cumulative Cash Flow***	***Without Solar***
1	($60,542)	$9,877	$15,130	$121,084	$85,549	$85,549	($9,877)
2	($60,542)	$10,123	$15,130	-	($35,288)	$50,261	($10,123)
3	($60,542)	$10,377	$15,130	-	($35,035)	$15,226	($10,377)
4	($60,542)	$10,636	$15,130	-	($34,776)	($19,550)	($10,636)
5	($60,542)	$10,902	$15,130	-	($34,510)	($54,060)	($10,902)
6	-	$11,174	$15,130	-	$26,305	($27,755)	($11,174)
7	-	$11,454	$15,130	-	$26,584	($1,171)	($11,454)
8	-	$11,740	-	-	$11,740	$10,569	($11,740)
9	-	$12,034	-	-	$12,034	$22,602	($12,034)
10	-	$12,334	-	-	$12,334	$34,937	($12,334)
11	-	$12,643	-	-	$12,643	$47,580	($12,643)
12	-	$12,959	-	-	$12,959	$60,539	($12,959)
13	-	$13,283	-	-	$13,283	$73,822	($13,283)
14	-	$13,615	-	-	$13,615	$87,437	($13,615)
15	-	$13,955	$6,201	-	$20,157	$107,593	($13,955)
16	-	$14,304	-	-	$14,304	$121,897	($14,304)
17	-	$14,662	-	-	$14,662	$136,559	($14,662)
18	-	$15,028	-	-	$15,028	$151,588	($15,028)
19	-	$15,404	-	-	$15,404	$166,992	($15,404)
20	-	$15,789	-	-	$15,789	$182,781	($15,789)
21	-	$16,184	-	-	$16,184	$198,965	($16,184)
22	-	$16,589	-	-	$16,589	$215,553	($16,589)
23	-	$17,003	-	-	$17,003	$232,557	($17,003)
24	-	$17,428	-	-	$17,428	$249,985	($17,428)
25	-	$17,864	-	-	$17,864	$267,849	($17,864)
26	-	$18,311	-	-	$18,311	$286,159	($18,311)
27	-	$18,768	-	-	$18,768	$304,928	($18,768)
28	-	$19,238	-	-	$19,238	$324,165	($19,238)
29	-	$19,719	-	-	$19,719	$343,884	($19,719)
30	-	$20,211	-	-	$20,211	$364,095	($20,211)
Total	**($302,711)**	**$433,608**	**$112,114**	**$121,084**	**$364,095**		($433,608)

Decision to GO Solar or NOT has a Value Difference of: $797,704

3 Bid Process

We submitted the same scope of work to 3 separate companies,

1. **Sustainable Capital Finance**
2. **DSD Renewables**
3. **NPN Energy**

All calculate the numbers in their own systems and each generates their best offer for Lindenhurst.

Here Are The Results:

PPA Pricing Bids

Company	Proposed PPA Price (20 year with 0% Escalator)
Sustainable Capital Finance	$0.074/kWh
DSD Renewables	$0.057/kWh
NPM Energy	$0.073/kWh

About DSD

DSD was launched as a startup within General Electric in 2012 with the vision that GE could lead the evolution to more distributed energy generation. Under CEO Erik Schiemann's leadership, with a group of devoted GE employees, we started a solar development business empowered to prove that renewable energy can provide a better onsite energy solution.

Figure 2. 0.4 MW Rooftop Solar Project at IKEA – Emeryville, CA

Figure 6. 1.8 MW Project at The Village of Orchard Ridge

Figure 10. Schenectady County Solar Project

Figure 11. 1.0 MW Project at Mauna Loa Macadamia Nut

Figure 14. Gedney Way Recycling Facility

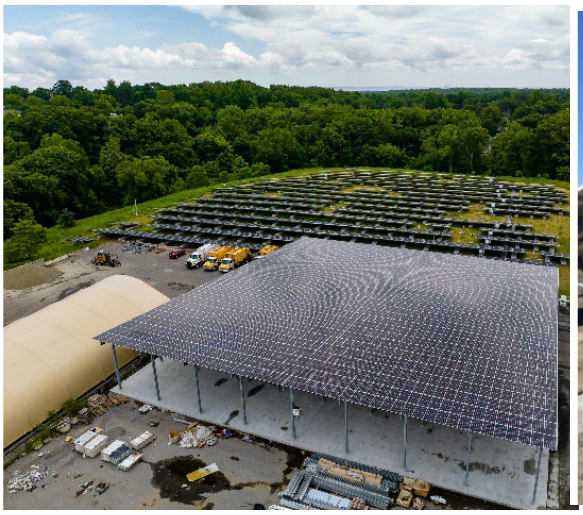
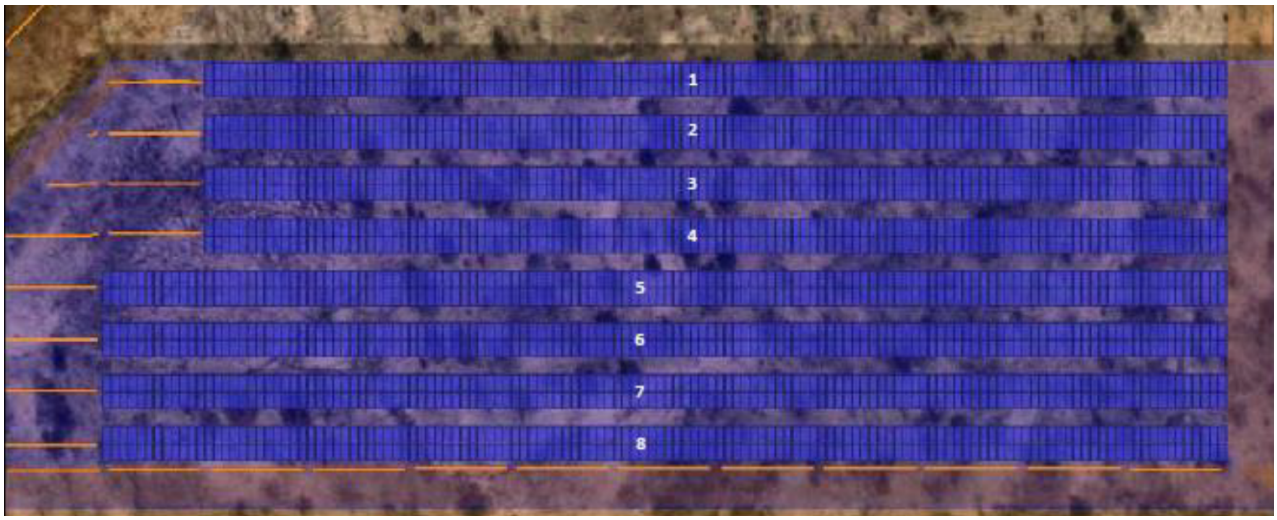


Figure 16. 1.6 MW Project at BBARWA

DSD Lindenhurst's Options



Total Cost of the System $2,206,149

Low Rate Hedging Against Rising Costs

1. **Year 6 through 20 Buy-Out Option for (No-Bill)**

2. **Year 21 DSD Will Decommission the System, No Cost.**

3. **Year 21 Lindenhurst Buy-Out with 10-Year Production Warranty. Panels will last much longer, just will start producing .05% less energy after 30 years.**

Buy-Out Schedule

Year	Estimated Buyout Amount
6	$ 619,132
7	$ 445,906
8	$ 358,543
9	$ 341,797
10	$ 324,591
11	$ 306,894
12	$ 310,017
13	$ 305,592
14	$ 301,727
15	$ 298,475
16	$ 283,257
17	$ 213,065
18	$ 192,914
19	$ 172,115
20	$ 150,623

Project Milestones

Pre Construction Phase (35 - 36 Weeks)

Finalize Tier 2 Design
Engineering Drawings
Submit Construction Permit Application
Submit Interconnection Agreement Application
Submit Solar Renewable Energy Credit (SREC) Application
Bill of Materials Procurement
Interconnect Agreement Approval

Construction Phase (8 – 10 Weeks)

Jobsite and Project JHA Analysis
System Installation
String Plans for Arrays
System Installation
Update As-Builts
Electrical Installation
Monitoring Setup
System Commissioning
Schedule System Inspection
Interconnection

Post Construction Phase Administrative (2 – 3 weeks)

Certificate of Completion
Submit Final Interconnection Application
Submit Net Meter Application
Submit Uitlity Inverter Rebate Application
Finalize SREC contract
Project Closure
Generate Onsite Electricity for Energy Independence