

CITY OF
EAST GRAND RAPIDS



750 LAKESIDE DRIVE SE • EAST GRAND RAPIDS, MICHIGAN 49506
(616) 940-4817 www.eastgr.org

DOUG LA FAVE
DEPUTY CITY MANAGER

MEMORANDUM

TO: Honorable Mayor and City Commissioners
FROM: Doug La Fave, Deputy City Manager
DATE: April 20, 2023

RE: East Grand Rapids Community Solar Array Project-Power Purchase Agreement

Action Requested: That the City Commission consider a Power Purchase Agreement (PPA) with BluePath Solar East Grand Rapids, LLC, for the installation of solar arrays on all city owned operational facilities at no direct cost to the city for an initial 25-year period, estimated to save the city ~\$241,000 in electric utility costs over the duration of the agreement while also generating electricity to reduce carbon emissions impact.

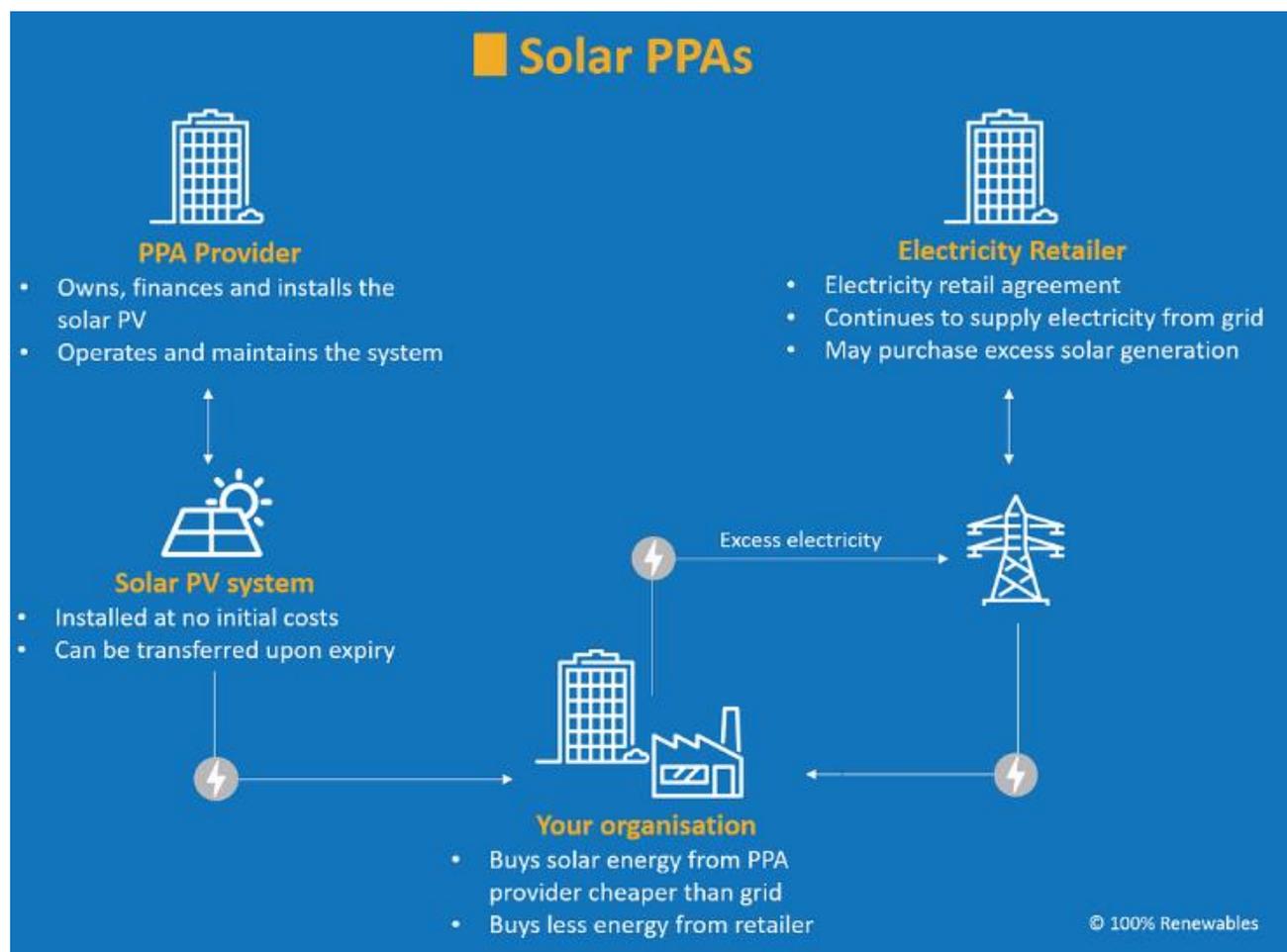
Background: The City of East Grand Rapids has a history of implementing operational and infrastructure improvements guided by financial stewardship, operational efficiency, high level of service, collaboration, and environmental sustainability. City staff meets annually or bi-annually with DTE and Consumers Energy to conduct facility energy efficiency audits related to natural gas and electrical usage. These audits help refine operations and planned capital investments around reducing consumption and overall reduction of carbon impact. Since 2005, combined with the Community Center LEED Silver certification and ongoing efficiency and conservation efforts, facility energy consumption has been reduced by approximately 26%.

In 2022 the City Commission adopted a Climate Action Plan Resolution establishing a target date of 2040 for city operations to be carbon neutral. While the adopted resolution calls for a Climate Action Plan for city operations be finalized by the end of Fiscal Year 2023-2024 (June 30, 2024), as the city has done historically, initiatives and projects related to environmental sustainability continue to be priorities. In advance of the Climate Action Plan, staff has been working on facility/operations carbon reduction related to electrical and natural gas utilities. At the February 6, 2023, City Commission Meeting, the City Commission approved an agreement with DTE to purchase Renewable Natural Gas-Environmental Attributes and Nature-Based -Carbon Offset Credits to offset 100% of the City of East Grand Rapids natural gas carbon emissions.

Beyond the Climate Action Plan Resolution approved by the City Commission, the 2022 and 2023 Strategic Plan updates provide continued focus on key areas including city operations and environmental sustainability. One of the Department of Public Works goals for FY 2022-2023 that aligned with the Strategic Plan was to evaluate the feasibility of solar array installations and provide options to the City Commission for consideration. City staff completed this task and at the direction of the City Commission in October of 2022 put together an RFP for implementation in 2023.

City staff corresponded with sustainability staff from the City of Ann Arbor to develop an RFP for city facilities. The RFP called for proposals to provide for a PPA arrangement for solar array

installations at the Public Works Complex, Community Center/Municipal Complex and Department of Public Safety Building, which encompasses all city facilities. A PPA is a financing mechanism that is used by private vendors that utilize state and federal tax incentives to fund projects that are not available to non-profits and government entities in combination with a renewable energy rate that covers additional costs and return on investment (ROI) for the vendor while also providing for reduced rate savings and environmental sustainability benefits to the city. In this type of agreement there are no capital or maintenance costs for the city for the duration of the partnership. The following graphic summarizes a solar PPA arrangement.



The city partnered with the Kent County Fiscal Services Department-Purchasing Division to advertise the RFP. Four vendors responded to the RFP to schedule sites visits to city facilities. Of the four vendors, one vendor, Harvest Solar, was the only vendor to submit a proposal on-time and in accordance with submittal requirements. Harvest Solar is partner with BluePath Solar. City staff and consultants reviewed the proposal to ensure its accuracy. Upon a satisfactory review, staff checked references, which included both municipal and private sector organizations. References were very positive.

The proposal for the solar array installation project includes all city operational facilities including the Community Center/Municipal Complex, Library, Public Safety Building, and the Department of Public Works Complex. The solar array systems for the Community Center/Municipal Complex, Library, and Public Safety Building is estimated to annually generate 224,000kWh, which equates to generating approximately 24% of the current electricity of these facilities. The solar array system for the Department of Public Works Complex is estimated to annually generate 107,050 kWh, which equates to generating 100% or more of the current electricity usage of this facility. The solar array

system, combined with the carbon offset agreement with DTE, from a natural gas and electric utility perspective, the Department of Public Works Complex would be the first carbon neutral facility in the city. The following are the proposed solar array facilities that are noted in the submitted proposal and PPA.

East GR - Municipal Complex
Estimated Annual Generation = 224,000 kWh

750 Lakeside Dr SE
East Grand Rapids, MI 49506



Modules: 511 Heliene 72M Bifacial 370 , Total System Size: 189.07 kW

City of East GR - DPW
Estimated Annual Production = 107,050 kWh

2310 Reeds Lake Blvd SE
East Grand Rapids, MI 49506



Modules: 246 Heliene 72M Bifacial 370 , Total System Size: 91.02 kW

The summary table of the solar array systems generation and projected electric utility savings from the submitted proposal and associated PPA is noted below. It is important to note that though there are no direct capital costs for this proposed project, the initial eight years of the PPA is estimated to cost the city \$45,560.41 or \$5,695.05 average per year above existing electric utility rate costs before monetary savings are realized. Over the 25-year PPA, the solar array systems are projected to save ~\$241,000 in electric utility costs while also generating ~8,270,000 kWh of solar generated electricity for city facilities.

The PPA agreement provides for a performance guaranty whereby if production is below guaranteed amounts during each period, a credit will be issued to the city for the difference between the guaranteed and actual rate as noted. This provides for a baseline for production and remedy for fiscal performance.

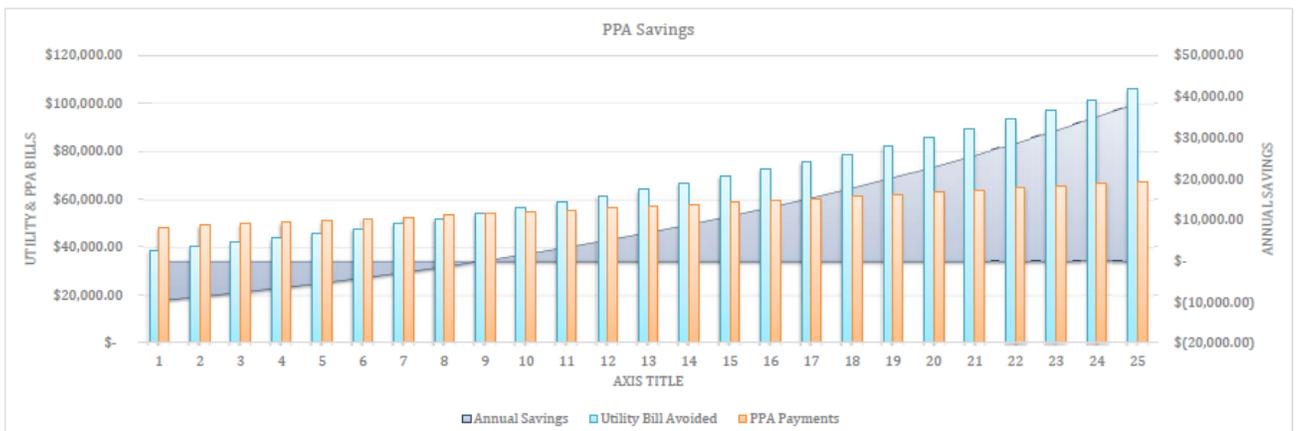
City of East Grand Rapids - Grand Rapids, MI

Proposal Date	12/22/2022	Proposed System Size (aprox)	280.1 kW (DC)
Proposed System In-Service Date	9/1/2023	Proposed System Annual Yield (aprox)	330800 kWh
Proposed System Type	Ground Mount	Proposed System Annual Degradation (aprox)	0.5%

PPA Terms & Assumptions	
Term Length	25 Years
Initial PPA Rate	\$ 0.1460
Annual PPA Rate Escalator	1.9%
Current Utility Rate	\$ 0.1170
Annual Utility Rate Escalator (est)	4.8%

Financial Performance	
Total Savings Over 25 Yrs	\$ 240,989.92
Average Annual Savings Over 25 Yrs	\$ 9,639.60
Levelized Cost of Energy - PPA	\$ 0.1838
Levelized Cost of Energy - Utility	\$ 0.2147

Year	System Production (kWh)	Utility Energy Price	PPA Energy Price	Utility Bill Avoided	PPA Payments	Annual Savings
1	330,800	\$ 0.1170	\$ 0.1460	\$ 38,703.60	\$ 48,296.80	\$ (9,593.20)
2	329,146	\$ 0.1226	\$ 0.1488	\$ 40,358.57	\$ 48,968.37	\$ (8,609.80)
3	327,500	\$ 0.1285	\$ 0.1516	\$ 42,084.30	\$ 49,649.27	\$ (7,564.97)
4	325,863	\$ 0.1347	\$ 0.1545	\$ 43,883.82	\$ 50,339.65	\$ (6,455.82)
5	324,233	\$ 0.1411	\$ 0.1574	\$ 45,760.30	\$ 51,039.62	\$ (5,279.32)
6	322,612	\$ 0.1479	\$ 0.1604	\$ 47,717.01	\$ 51,749.32	\$ (4,032.32)
7	320,999	\$ 0.1550	\$ 0.1635	\$ 49,757.38	\$ 52,468.90	\$ (2,711.51)
8	319,394	\$ 0.1624	\$ 0.1666	\$ 51,885.01	\$ 53,198.48	\$ (1,313.47)
9	317,797	\$ 0.1702	\$ 0.1697	\$ 54,103.61	\$ 53,938.20	\$ 165.41
10	316,208	\$ 0.1784	\$ 0.1729	\$ 56,417.08	\$ 54,688.21	\$ 1,728.87
11	314,627	\$ 0.1870	\$ 0.1762	\$ 58,829.48	\$ 55,448.65	\$ 3,380.82
12	313,054	\$ 0.1960	\$ 0.1796	\$ 61,345.03	\$ 56,219.67	\$ 5,125.36
13	311,489	\$ 0.2054	\$ 0.1830	\$ 63,968.14	\$ 57,001.40	\$ 6,966.74
14	309,931	\$ 0.2152	\$ 0.1865	\$ 66,703.42	\$ 57,794.01	\$ 8,909.41
15	308,382	\$ 0.2256	\$ 0.1900	\$ 69,555.66	\$ 58,597.63	\$ 10,958.02
16	306,840	\$ 0.2364	\$ 0.1936	\$ 72,529.86	\$ 59,412.43	\$ 13,117.42
17	305,306	\$ 0.2477	\$ 0.1973	\$ 75,631.23	\$ 60,238.56	\$ 15,392.67
18	303,779	\$ 0.2596	\$ 0.2011	\$ 78,865.22	\$ 61,076.18	\$ 17,789.05
19	302,260	\$ 0.2721	\$ 0.2049	\$ 82,237.50	\$ 61,925.44	\$ 20,312.06
20	300,749	\$ 0.2851	\$ 0.2088	\$ 85,753.98	\$ 62,786.52	\$ 22,967.46
21	299,245	\$ 0.2988	\$ 0.2127	\$ 89,420.82	\$ 63,659.56	\$ 25,761.25
22	297,749	\$ 0.3132	\$ 0.2168	\$ 93,244.45	\$ 64,544.75	\$ 28,699.70
23	296,260	\$ 0.3282	\$ 0.2209	\$ 97,231.58	\$ 65,442.24	\$ 31,789.34
24	294,779	\$ 0.3440	\$ 0.2251	\$ 101,389.21	\$ 66,352.22	\$ 35,036.99
25	293,305	\$ 0.3605	\$ 0.2294	\$ 105,724.61	\$ 67,274.85	\$ 38,449.76



Per the Environmental Protection Agency carbon calculator, the proposed solar array systems production would be a reduction of approximately 234 metric tons of carbon dioxide and the annual equivalent reductions as noted below.

This is equivalent to greenhouse gas emissions from:

50.4 gasoline-powered passenger vehicles driven for one year  

581,029 miles driven by an average gasoline-powered passenger vehicle  

This is equivalent to CO₂ emissions from:

26,339 gallons of gasoline consumed  

258,986 pounds of coal burned  

29.5 homes' energy use for one year  

1.3 railcars' worth of coal burned  

9,559 propane cylinders used for home barbeques  

0.0006 natural gas-fired power plants in one year  

22,994 gallons of diesel consumed ?



3.1 tanker trucks' worth of gasoline ?



45.5 homes' electricity use for one year ?



542 barrels of oil consumed ?



0.0001 coal-fired power plants in one year ?



28,473,846 number of smartphones charged ?



This is equivalent to greenhouse gas emissions avoided by:

81 tons of waste recycled instead of landfilled ?



11.6 garbage trucks of waste recycled instead of landfilled ?



The PPA has been reviewed by legal counsel and determined to be in order.

If the PPA is approved, it would be another meaningful step towards the city's carbon neutrality goal, recognizing that continued reductions, efficiencies, and alternatives will be pursued along with future carbon reduction programs that are not available today.

REVIEWED & APPROVED FOR SUBMISSION:

Shea Charles
City Manager