

CIRCUIT ENERGY SOLUTIONS



City Of Clearwater Fleet Maintenance

Circuit Energy Solutions

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2 PROJECT SUMMARY

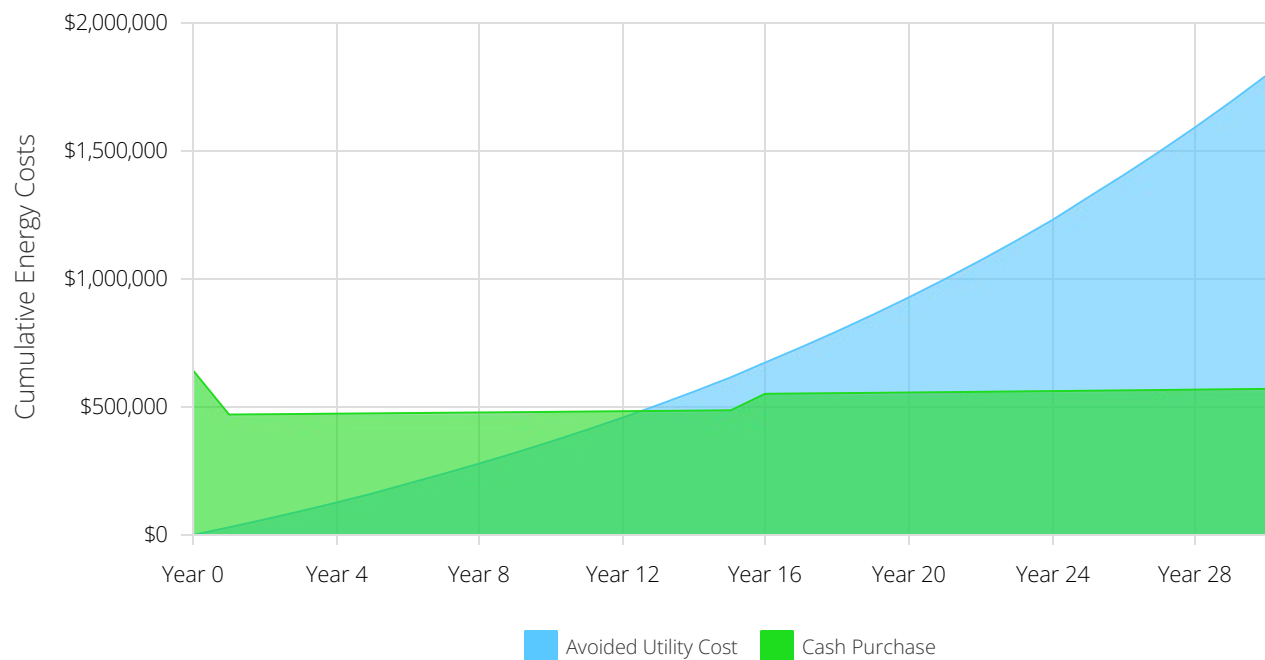
Payment Options	Cash Purchase
IRR - Term	8.3%
LCOE PV Generation	\$0.052 /kWh
Net Present Value	\$262,294
Payback Period	12.5 Years
Total Payments	\$642,903
Total Incentives	\$173,584
Net Payments	\$469,319
Electric Bill Savings - Term	\$1,796,783
Upfront Payment	\$642,903

COMBINED SOLAR PV RATING

Power Rating: 220,225 W-DC

Power Rating: 191,829 W-AC-CEC

CUMULATIVE ENERGY COSTS BY PAYMENT OPTION



3.1.1 PV SYSTEM DETAILS

GENERAL INFORMATION

Facility: Clearwater Fleet Maintenance
 Address: 1900 Grand Ave Clearwater FL 33765

SOLAR PV SYSTEM RATING

Power Rating: 220,225 W-DC
 Power Rating: 191,829 W-AC-CEC

SOLAR PV EQUIPMENT DESCRIPTION

Solar Panels: (383) Hanwha Q Cells Q.PEAK DUO XL-G11.2 575
 Inverters: (3) Solis Solis-60K-US-F-LSW

ENERGY CONSUMPTION MIX

Annual Energy Use: 510,314 kWh

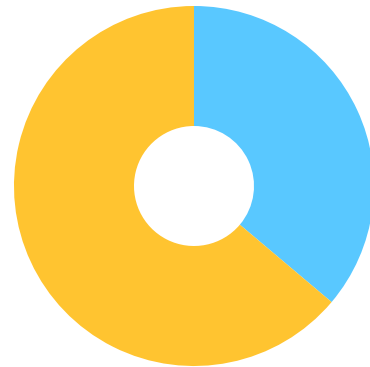
SOLAR PV EQUIPMENT TYPICAL LIFESPAN

Solar Panels: Greater than 30 Years
 Inverters: 15 Years

Solar PV System Cost and Incentives

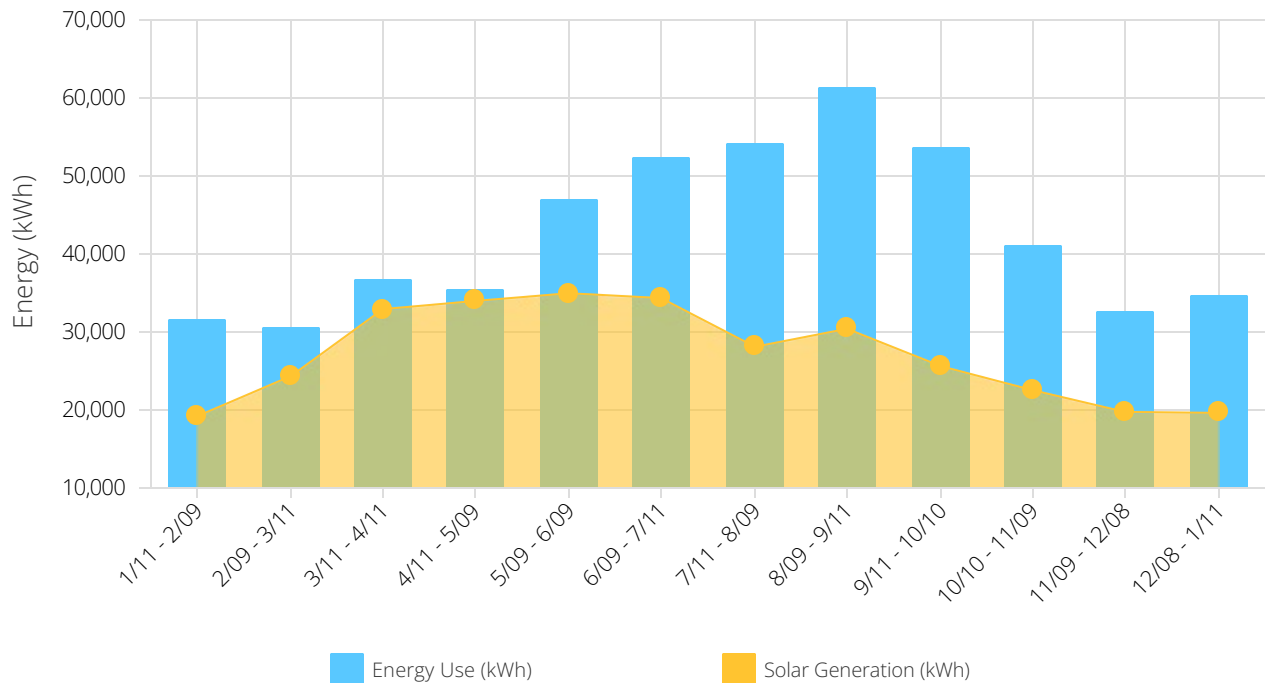
Solar PV System Cost \$642,903
 Federal ITC **-\$173,584**

Net Solar PV System Cost \$469,319



Utility 184,489 kWh (36.15%)
 Solar PV 325,825 kWh (63.85%)

MONTHLY ENERGY USE VS SOLAR GENERATION



3.1.2 REBATES & INCENTIVES

This section summarizes all incentives available for this project. The actual rebate and incentive amounts for this project are shown in each example.

Investment Tax Credit (ITC) - 30% (with Adders)

The Inflation Reduction Act (IRA) of 2022 establishes and extends the federal Investment Tax Credit (ITC) for solar photovoltaic (PV) systems at a rate of 30% of the total PV system cost. The 30% ITC was extended for 10 years, through 2032. Unlike tax deductions, this tax credit can be used to directly offset your tax liability dollar for dollar. The IRA extended the carryback period to 3 years, and the carryforward period to 22 years, in cases where the tax credit exceeds a customer's tax liability in the 'placed-in-service' year. For PV projects greater than 1 MW AC in size, the IRA established prevailing wage and apprenticeship requirements in order to qualify for the full 30% "increased rate", rather than a "base rate" which would only qualify for a 6% ITC. Projects with an output of less than 1 megawatt qualify for the "increased rate" irrespective of if prevailing wage or apprenticeship requirements are met. In addition to the 30% ITC, the IRA establishes three different types of ITC "Adders", which provide additional tax credits of up to 10% each, for projects that meet specified requirements. (1) Energy Community, projects sited in an "energy community", which includes brownfield sites, census tracts where a coal mine closed after 1999 or a coal-fired power plant was retired after 2009, or areas where 25% of local tax revenues are related to the extraction, processing or storage of coal, oil, or natural gas at any time beginning in 2010. (2) Low-income, projects located in a qualified "low-income community", which is defined as a census tract with a poverty rate of at least 20%, as well as a census tract where the median family income (MFI) is 80% or less of statewide MFI, or on "Indian land", which is defined as land located within the boundaries of an Indian reservation or lands held by a tribe. (3) Domestic Content, for projects that meet specified domestic content requirements which will be set by Treasury, including 100% steel/iron for manufactured products with a 40% requirement through 2024 followed by 45% in 2025, 50% in 2026, and 55% in 2027 and beyond. Manufactured content is further explained: the products which are components of a qualified facility upon completion will be deemed to have been produced in the United States if the adjusted percentage of the total costs of all such manufactured products of the facility are attributable to manufactured products which are mined, produced, or manufactured in the United States.

Total Incentive Value: \$173,584



3.1.3 UTILITY RATES

The table below shows the rates associated with your current utility rate schedule (GSD-1). Your estimated electric bills after solar are shown on the following page.

Customer Charges				Energy Charges				Demand Charges			
Season	Charge Type	Rate Type	GSD-1	Season	Charge Type	Rate Type	GSD-1	Season	Charge Type	Rate Type	GSD-1
S1	Flat Rate	per billing period	\$16.51	S1	Flat Rate	Import	\$0.08861	S1	Flat Rate	Import	\$11.80



3.1.4 CURRENT ELECTRIC BILL

The table below shows your annual electricity costs based on the most current utility rates and your previous 12 months of electrical usage.

RATE SCHEDULE: DUKE-FL - GSD-1

Time Periods	Energy Use (kWh)	Max Demand (kW)	Charges			
Bill Ranges & Seasons	Total	NC / Max	Other	Energy	Demand	Total
1/11/2024 - 2/9/2024 S1	31,666	150	\$17	\$2,806	\$1,770	\$4,592
2/9/2024 - 3/11/2024 S1	30,450	150	\$17	\$2,698	\$1,770	\$4,485
3/11/2023 - 4/11/2023 S1	36,547	150	\$17	\$3,238	\$1,770	\$5,025
4/11/2023 - 5/9/2023 S1	35,311	150	\$17	\$3,129	\$1,770	\$4,915
5/9/2023 - 6/9/2023 S1	46,797	150	\$17	\$4,147	\$1,770	\$5,933
6/9/2023 - 7/11/2023 S1	52,214	150	\$17	\$4,627	\$1,770	\$6,413
7/11/2023 - 8/9/2023 S1	54,075	150	\$17	\$4,792	\$1,770	\$6,578
8/9/2023 - 9/11/2023 S1	61,232	150	\$17	\$5,426	\$1,770	\$7,212
9/11/2023 - 10/10/2023 S1	53,572	150	\$17	\$4,747	\$1,770	\$6,534
10/10/2023 - 11/9/2023 S1	41,140	150	\$17	\$3,645	\$1,770	\$5,432
11/9/2023 - 12/8/2023 S1	32,655	150	\$17	\$2,894	\$1,770	\$4,680
12/8/2023 - 1/11/2024 S1	34,655	150	\$17	\$3,071	\$1,770	\$4,857
Total	510,314	-	\$198	\$45,219	\$21,240	\$66,657



3.1.5 NEW ELECTRIC BILL

RATE SCHEDULE: DUKE-FL - GSD-1

Time Periods	Energy Use (kWh)	Max Demand (kW)	Charges			
Bill Ranges & Seasons	Total	NC / Max	Other	Energy	Demand	Total
1/11/2024 - 2/9/2024 S1	12,472	147	\$17	\$1,105	\$1,738	\$2,859
2/9/2024 - 3/11/2024 S1	6,094	146	\$17	\$540	\$1,726	\$2,282
3/11/2023 - 4/11/2023 S1	3,613	142	\$17	\$320	\$1,679	\$2,015
4/11/2023 - 5/9/2023 S1	1,336	138	\$17	\$118	\$1,628	\$1,763
5/9/2023 - 6/9/2023 S1	11,828	143	\$17	\$1,048	\$1,682	\$2,746
6/9/2023 - 7/11/2023 S1	17,864	144	\$17	\$1,583	\$1,699	\$3,299
7/11/2023 - 8/9/2023 S1	25,968	144	\$17	\$2,301	\$1,699	\$4,017
8/9/2023 - 9/11/2023 S1	30,822	144	\$17	\$2,731	\$1,702	\$4,450
9/11/2023 - 10/10/2023 S1	27,958	143	\$17	\$2,477	\$1,684	\$4,178
10/10/2023 - 11/9/2023 S1	18,608	143	\$17	\$1,649	\$1,682	\$3,347
11/9/2023 - 12/8/2023 S1	12,898	145	\$17	\$1,143	\$1,714	\$2,873
12/8/2023 - 1/11/2024 S1	15,028	149	\$17	\$1,332	\$1,755	\$3,103
Total	184,489	-	\$198	\$16,348	\$20,387	\$36,933

ANNUAL ELECTRICITY SAVINGS: \$29,724



4.1 Cash Purchase

Assumptions and Key Financial Metrics

IRR - Term	8.3%	Net Present Value	\$262,294	Payback Period	12.5 Years
ROI	190.7%	PV Degradation Rate	0.50%	Discount Rate	5.0%
Energy Cost Escalation Rate	5.0%	Federal Income Tax Rate	0.0%	State Income Tax Rate	0.0%
Total Project Costs	\$642,903				

Years	Project Costs	O&M / Equipment Replacement	Electric Bill Savings	Federal Tax Effect	Total Cash Flow	Cumulative Cash Flow
Upfront	-\$642,903	-	-	-	-\$642,903	-\$642,903
1	-	-\$1,101	\$29,724	\$173,584	\$202,207	-\$440,696
2	-	-\$1,112	\$31,054	-	\$29,942	-\$410,754
3	-	-\$1,123	\$32,443	-	\$31,320	-\$379,435
4	-	-\$1,134	\$33,893	-	\$32,759	-\$346,676
5	-	-\$1,146	\$35,407	-	\$34,261	-\$312,415
6	-	-\$1,157	\$36,988	-	\$35,830	-\$276,585
7	-	-\$1,169	\$38,638	-	\$37,469	-\$239,116
8	-	-\$1,181	\$40,361	-	\$39,180	-\$199,936
9	-	-\$1,192	\$42,159	-	\$40,967	-\$158,969
10	-	-\$1,204	\$44,037	-	\$42,832	-\$116,137
11	-	-\$1,216	\$45,996	-	\$44,780	-\$71,357
12	-	-\$1,228	\$48,042	-	\$46,813	-\$24,543
13	-	-\$1,241	\$50,177	-	\$48,936	\$24,393
14	-	-\$1,253	\$52,406	-	\$51,152	\$75,546
15	-	-\$1,266	\$54,732	-	\$53,466	\$129,012
16	-	-\$64,278	\$57,159	-	-\$7,119	\$121,892
17	-	-\$1,291	\$59,693	-	\$58,402	\$180,294
18	-	-\$1,304	\$62,337	-	\$61,033	\$241,327
19	-	-\$1,317	\$65,096	-	\$63,779	\$305,106
20	-	-\$1,330	\$67,975	-	\$66,645	\$371,751
21	-	-\$1,344	\$70,980	-	\$69,636	\$441,387
22	-	-\$1,357	\$74,115	-	\$72,758	\$514,145
23	-	-\$1,371	\$77,386	-	\$76,015	\$590,160
24	-	-\$1,384	\$80,798	-	\$79,414	\$669,574
25	-	-\$1,398	\$84,359	-	\$82,961	\$752,535
26	-	-\$1,412	\$88,074	-	\$86,662	\$839,196
27	-	-\$1,426	\$91,949	-	\$90,523	\$929,719
28	-	-\$1,441	\$95,992	-	\$94,551	\$1,024,270
29	-	-\$1,455	\$100,209	-	\$98,754	\$1,123,024
30	-	-\$1,469	\$104,607	-	\$103,138	\$1,226,161
Totals:	-\$642,903	-\$101,303	\$1,796,783	\$173,584	\$1,226,161	-



5 ENVIRONMENTAL BENEFITS

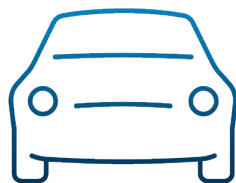


OVER THE NEXT 20 YEARS, YOUR SYSTEM WILL DO MORE THAN JUST SAVE YOU MONEY. ACCORDING TO THE EPA'S GREENHOUSE GAS EQUIVALENCIES CALCULATOR ([SOURCE](#)), YOUR SOLAR PV SYSTEM WILL HAVE THE IMPACT OF REDUCING:



5,105

tons of CO₂ Offset



11,606,430

Miles Driven By Cars



76,569

Trees Planted