



Utilities Advisory Board Regular Meeting

Agenda

October 22, 2024 @ 12:00 PM

City Hall Commission Chambers
401 S. Park Avenue

welcome

Agendas and all backup material supporting each agenda item are accessible via the city's website at cityofwinterpark.org/meetings/ and include virtual meeting instructions.

assistance & appeals

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"If a person decides to appeal any decision made by the Board with respect to any matter considered at this hearing, a record of the proceedings is needed to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based." (F.S. 286.0105).

please note

Times are projected and subject to change.

-
- 1. Call to Order**
 - 2. Consent Agenda**
 - a. Approve the minutes of September 24, 2024 1 Minute
 - 3. Public Comments (for items not on the agenda): Three minutes allowed for each speaker**
 - 4. Action Items**
 - 5. Non-Action Items**
 - a. Strategic Planning Material - Mark McCain 60 minutes
 - 6. Staff Updates**
 - a. Electric Utility - Jamie England 5 minutes
 - b. Water & Wastewater Utility – David Zusi 5 minutes
 - c. Performance Measurement – Wes Hamil 5 minutes
 - d. Educational Campaign – Clarissa Howard 0 minutes
 - e. Requested Items from Last Meeting
 - 7. Board Comments**
 - 8. Upcoming Agenda Items**
 - a. Decorative Lighting - Mourad Belfakih - Maybe December
 - 9. Adjournment**



Utilities Advisory Board

agenda item 2.a

item type

Consent Agenda

meeting date

October 22, 2024

prepared by**approved by****subject**

Approve the minutes of September 24, 2024

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

1. UAB-mins-2024-09-24 DRAFT LMV and WH



Utilities Advisory Board Regular Meeting Minutes

September 24, 2024 at 12:00 PM

City Hall Commission Chambers
401 S. Park Avenue

Present

Alison Yurko, Mary Dipboye, Michael Poole, Paul Conway, Kathryn Sutton (virtual)

Absent

Paul W. Smith Jr., Leon Huffman

Staff Present

Director of Water and Wastewater Utilities David Zusi, Electric Utility Operations Manager Miguel Cruz, Director of Finance Wes Hamil, Electric Utility Engineer Manager Mourad Belfakih, Integrated Resources Program Manager Lisa Vedder, Director of Communications Clarissa Howard

1. Call to Order

Michael Poole called the meeting to order at 12:03 p.m.

2. Consent Agenda

- a. Approve the minutes of August 27, 2024

Motion made by Paul Conway to approve the minutes, seconded by Mary Dipboye . Motion carried unanimously with a 4-0 vote.

3. Public Comments (for items not on the agenda): Three minutes allowed for each speaker

Warren Weeden, Brookshire neighborhood, confirmed the city of Winter Park renewable energy plan has the expectation to reach 80% renewable energy by 2035. Mr. Weeden questioned the following:

- How much solar energy is being produced by the City of Winter Park and if there is a proposal to get more rooftop solar by ensuring net metering stays as an effective enticement
- If the citizens are able to participate in the action plan as it is being worked on
- The EV charging rate. He read that it was \$1.00 for 20 minutes which amounts to a \$0.50 per kilowatt-hour (kWh) charge for one car plugged into a station. If two cars are plugged into a station then it will amount to \$1.00 per kWh. Mr. Weeden offered that with this pricing structure, the city will discourage people from utilizing the service. Mr. Weeden mentioned that he is currently plugged into the charging station and receiving around 3 kilowatts per hour. If he were paying \$1.00 for 20 min, that would amount to \$1.00 per kWh at the end of the session.

Ms. Vedder explained that staff proposed a \$0.35 per kWh fee based on the cost of service analysis, however the UAB chose the rate of \$1.00 per 20 minutes. Mr. Poole explained the renewable energy plan does not have any benchmark goals yet, nor are there any additional plans at this time to encourage solar energy use. Mr. Poole noted that the current meeting will include a discussion on solar net energy metering rates and further explained that the overall electric utility strategic plan is being developed and the sustainability action plan encompassing electric, solar, water & wastewater, and sustainability is still in process. Ms. Vedder added that rough numbers around the solar currently being produced by rooftop customers will be discussed during the Solar & Net Metering presentation.

4. Action Items

5. Non-Action Items

a. Solar & Net Metering - Lisa Vedder

Ms. Vedder presented on solar distributed generation also known as customer owned generation, but typically called rooftop solar, and the City's net energy metering (NEM) policy. On November 28, 2012, the City Commission approved the recommendation of the UAB to implement a NEM rate mechanism for customer owned solar. In January 2024, the City adopted a resolution to become 100% renewable energy by 2050. It was clarified by Mr. Poole that the UAB makes recommendations and the Commission adopts policies and procedures.

Ms Vedder presented several graphics and discussed the following points:

- Definition of Net Metering
- Solar Production vs Load
- California's duck curve
- Meaning of arrays and the number of arrays installed between 2012 & 2023
- Summary of the billing data for NEM customers between August 2022 and September of 2024

An in-depth discussion followed on the net metering billing, the Leidos COS study and the challenge around fixed cost recovery—under NEM at full retail rates as implemented by Winter Park. The Leidos Study rates were based on the residential customer class carrying \$16 million of fixed costs.

- NEM Impact on Revenue and Revenue vs COS Impact

Discussion resulted on customers who produce excess electricity and the billing treatment.

- Options on rate design were presented, resulting in a lengthy discussion on rate design and cost of service, fixed charge and marginal costs
- A summary of NEM approaches by the 32 municipalities in the Florida Municipal Power Agency (FMPA)

- Challenges - WP net metering policy is 12 years old, reform is met with pushback, lobbyist and proactive groups who don't want reduction in full retail, or increased fixed charges. A handout reflecting OUC's experience was given to Board members.

Allison Yurko left at 1:20pm

Discussion continued on net metering rates, revenue impacts, and financial risk. The renewable energy and solar plan will require the input of staff, the Commission, the sustainability action committee, and UAB to come up with a master plan that addresses the issues mentioned in the net metering solar rate discussion.

- b. Recommendations on painting boxes - Mourad Belfakih

Mr. Belfakih advised the painting of the electric boxes is not in the electric budget. Mr. Poole advised the issue is not a UAB issue.

6. Staff Updates

- a. Electric Utility - Mourad Belfakih

Mr. Belfakih displayed the Monthly Electric Utility Update (July). Ms. Howard advised a survey is being conducted on the decorative lighting. To date, 87% of respondents are in favor of the new decorative lighting. There is no inventory with the light poles, they go back to the warehouse and if there was a surplus of any light fixture it will be auctioned off at a state auction.

- b. Water & Wastewater Utility – David Zusi

Mr. Zusi provided an update on the strategic plan process and informed the interviews of the stakeholders were completed. October 16th is the full UAB workshop from 8-11 am. A number of changes from the feedback of the interviews are being acted on including some citywide policy changes.

The lead and copper general letters have been sent out. The website is up. More specific letters will be generated later in October.

- c. Performance Measurement – Wes Hamil

Mr. Hamil displayed the Utility Monthly Performance Measurements. Question was asked if AI programs are being placed on personal owned servers within the city due to the increased usage. Mr. Hamil explained that usage can be determined by residential or commercial but not whether the use is from AI.

The results of the brainstorming survey from Mark McCain with Hometown Connections will be presented at the October 22nd meeting. The pre-workshop survey will be presented in December and Staff will develop a recommended short list of strategies to present at the January meeting.

- d. Educational Campaign – Clarissa Howard

Ms. Howard displayed the bill insert with the lead and copper letter updates and the press releases of the decorative street lights, the EV Car Show & Fair and the EV charging to charge. Ms. Howard mentioned the informative 32789.com online news site that promotes the Winter Park press releases. Sand bags are available for Hurricane Helene. Special needs assistance is through Orange County services.

7. Board Comments

Mr. Belfakih will bring the decorative lighting plan to the board in December.

8. Upcoming Agenda Items

Mr. Poole suggested Board action on Staff recommendations concerning NEM.

9. Adjournment

The meeting adjourned at 2:03 p.m.

Approved by the board on
/s/ Bahiyyah Layton, Board Coordinator



Utilities Advisory Board

agenda item 5.a

item type

Non-Action Items

meeting date

October 22, 2024

prepared by**approved by****subject**

Strategic Planning Material - Mark McCain

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

1. McCain_Brainstorm List of Potential Goals and Strategies 10-22-24
2. 20241016 Winter Park EU Potential Goals and Strategies



Winter Park: Brainstorm List of Potential Goals and Strategies

Mark McCain

Executive Consultant/Strategic Planning

Oct. 22, 2024

Phases of Our Strategic Planning Process

Four Phases; Currently in Brainstorm Phase



Mission	A statement of the overall purpose of an organization. It describes what the organization does, for whom it does it, and what are the benefit.
Goals	Broad, long-term aims that define accomplishment of the Mission. Goals can be external or internal.
Strategies	Broad activities required to achieve a Goal.
Action Plans	Specific steps to be taken, by whom and by when, to implement a Strategy.

Reviewing the Definition of Terms

Today, Focused on Goals and Strategies

Two-Part Brainstorming Process

Individual Brainstorming First, Group Collaboration Second



INDIVIDUAL

- ◆ Individual brainstorming to generate ideas without the influence of others
- ◆ But if you only do individual brainstorming, it lacks diverse perspectives

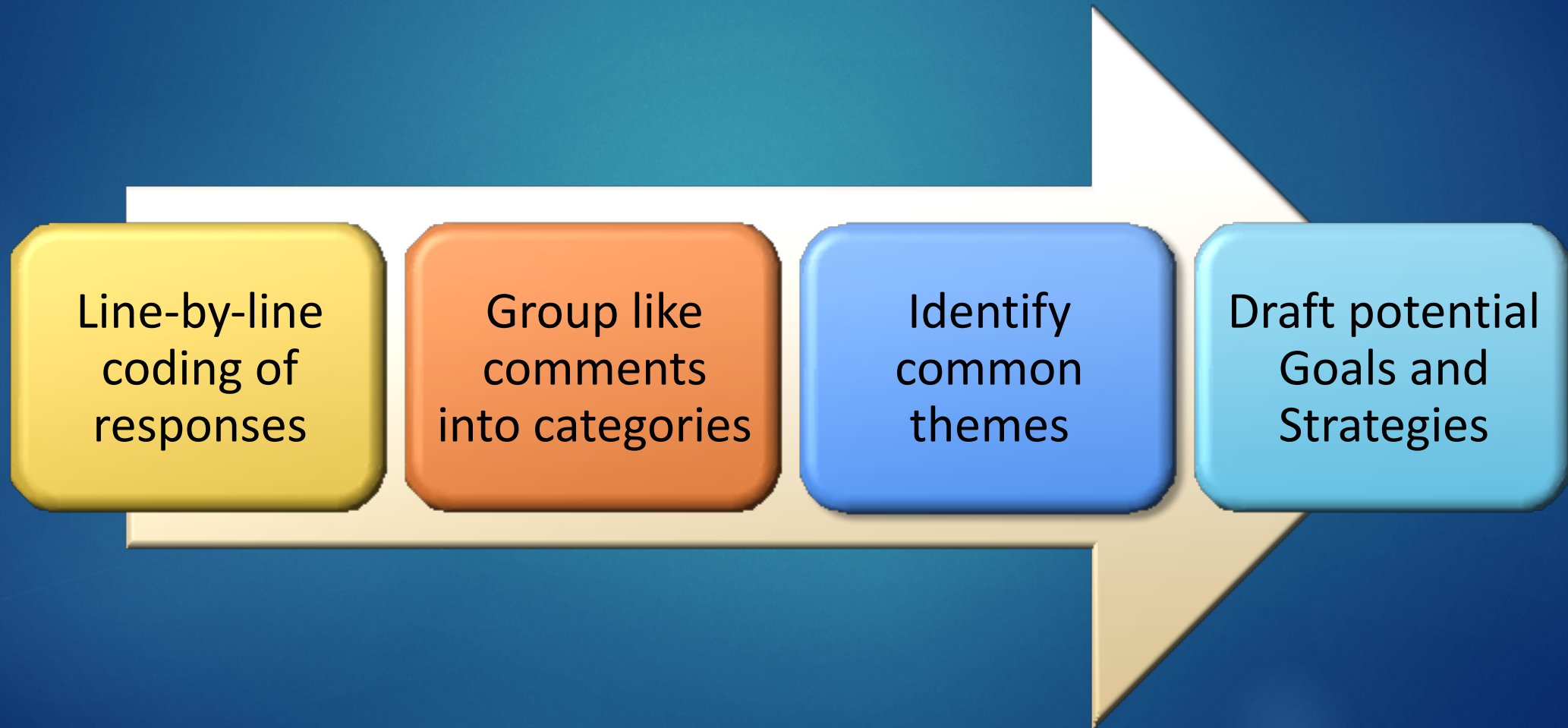


COLLABORATION

- ◆ Group review and discussion to clarify, fine-tune, expand or condense ideas
- ◆ Combination of individual brainstorming followed by collaboration works best

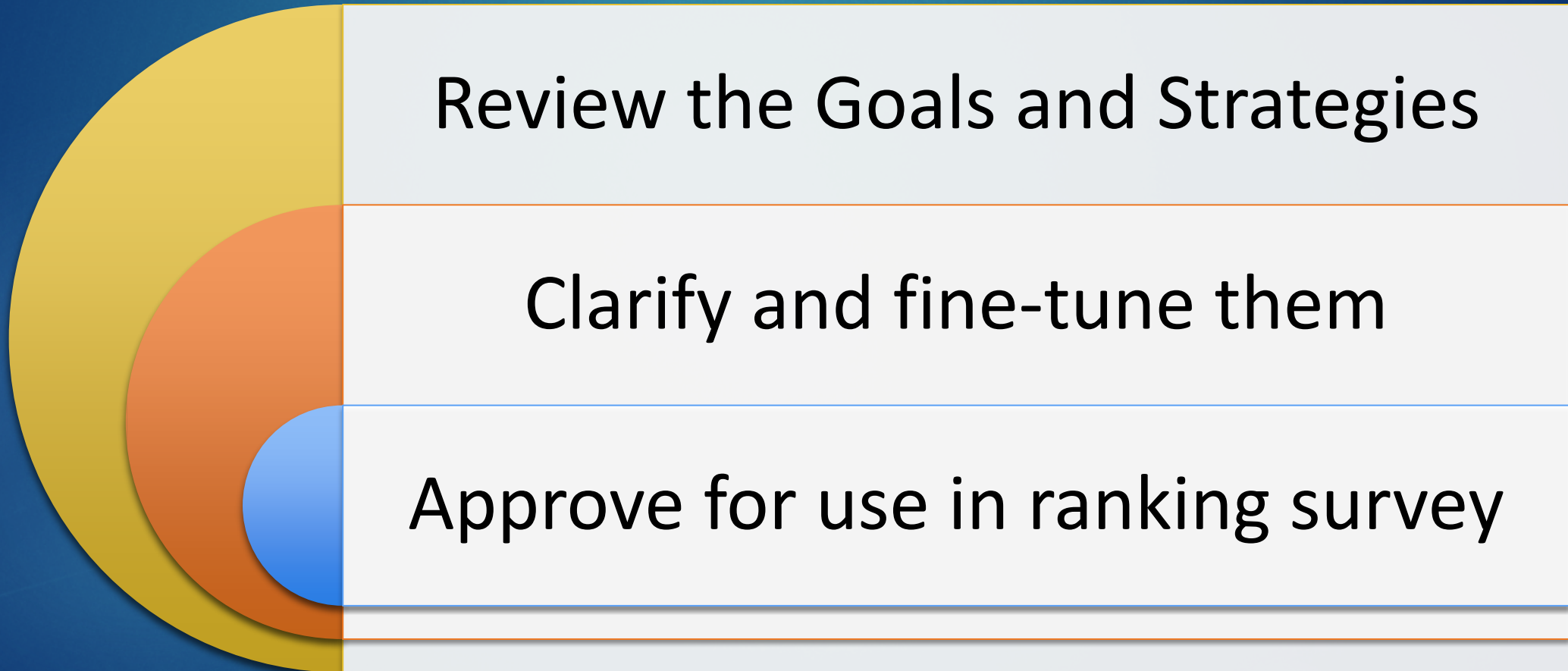
Turning Your Responses into Goal, Strategies

Method Used for Qualitative Content Analysis



Today: Finalize Potential Goals & Strategies

Approve Them for Use in the Ranking Survey



WINTER PARK ELECTRIC UTILITY
Strategic Planning Workshop 2024

Potential Goals and Strategies

Oct. 15, 2024

Electric Utility's Mission Statements

- **Mission:** We will provide electric service with top-tier customer service, superior reliability in a fiscally prudent manner while operating with a low physical and aesthetic impact on the environment along with competitive rates.

Potential Goals and Strategies

Definitions

- **Goals:** Broad, long-term aims that define accomplishment of the Mission. Goals can be external or internal. (see lettered items in the tables below)
- **Strategies:** Broad activities required to achieve a Goal. (see numbered items in the tables below)

Potential Goals and Strategies

Goals are lettered items below, and Strategies are numbered items.

A	
Reliability: Improve system-wide reliability through continued undergrounding of facilities and proactive investments in the system's infrastructure, enhancing performance.	
1.	Undergrounding: Continue to prioritize the undergrounding of distribution power lines to improve system resilience.
2.	OMS: Initiate the procurement of an Outage Management System (OMS) implementing smart technologies to detect and resolve potential reliability issues quickly.
3.	Maintenance: Develop a proactive maintenance program to address critical infrastructure issues before they result in equipment failures.
4.	Cybersecurity: Collaborate with industry associations or experts to audit the utility's cyber and physical security and develop enhancement plans.

B	
Power Supply: Secure reliable bulk power agreements that provide competitive rates and align with the utility's renewable targets.	
5.	Cost-Effective Power: Negotiate favorable long-term bulk power agreements securing reliable power at a reasonable cost in advance of contract expiration.
6.	Resource Flexibility: Maintain flexibility in energy resource by avoiding power supply contracts that might lock the utility into unfavorable conditions.
7.	Supplier Diversity: Diversify power suppliers to reduce dependency on a single source.

C Renewables: Support the city’s long-term renewable targets by implementing the renewable initiative roadmap in a fiscally prudent manner.	
8.	Program Development: Gather data to assess and design programs for time-of-use rates, distributed energy resources, and energy efficiency.
9.	Utility-Scale Solar: Complete a study of city assets to prioritize which facilities could be included in future plans to add solar and storage, and then look for opportunities to pool the city’s requirements with other utilities in renewable and storage projects.
10.	Residential/Commercial Solar: Explore avenues where city guarantees can help customers finance rooftop solar and storage additions, as well as track savings and contributions to the city’s renewable goal.
11.	Update the Plan: Perform periodic updates of the renewable plan, including resource technology maturity assessments of new and existing technologies, to adapt the utility’s renewable plan to evolving technology capabilities and costs.
12.	Electric Vehicles: Complete a study to quantify the expected impacts of electric vehicle adoption in Winter Park.

D Customer Service: Deliver top-tier customer service by enhancing communication channels and improving customer access to real-time information.	
13.	Call Center: Pursue continuous improvement in the call-center experience, and evaluate the after-hours and outage service to see what improvements can be made to the customer experience.
14.	Outage Communication: Enable proactive communication that informs/acknowledges customers of outages, estimated restoration times, and possibly grid maintenance schedules.
15.	Website/Portal: Enhance the communication value of the existing website, and develop a web-based portal or mobile application where customers can monitor energy usage, billing, and outage updates in real-time.
16.	Customer Engagement: Investigate customer engagement solutions to improve the communication process by reaching customers at touch points with relevant information to engage, educate and support energy efficiency programs.
17.	Satisfaction Survey: Conduct regular customer surveys to track service satisfaction levels and identify areas for improvement.
18.	Contractor Services: Improve customer satisfaction with contractor work by creating a process to share information and handle matters related to damage or repair.

E Finance: Maintain financial health and competitive rates through strategic resource management and operational efficiency.	
19.	Financial Plan: Create a sustainable financial model that includes rate planning, debt management, and capital investment strategies to avoid rate volatility.
20.	Operational Costs: Invest in technologies and processes that streamline operations, save costs, and improve overall efficiency.
21.	Strategic Investments: Evaluate net income forecasts to consider options for allocating revenues for strategic investments.
22.	Supply Chain: Strengthen supply chain resiliency for meters, transformers, and other critical utility equipment that is in short supply.

F Workforce: Foster a skilled, empowered workforce with training and development programs plus competitive compensation.	
23.	Recruiting: Provide adequate staff with the necessary expertise to support utility initiatives for improved efficiency.
24.	Training and Development: Prepare the workforce with ongoing training and development, particularly in supporting the transition to underground systems and advanced grid technologies.
25.	Compensation: Design policies that attract and retain talent by offering competitive pay and benefits packages that reflect industry standards.
26.	Safety: Enhance safety training and protocols to ensure the workforce remains committed to maintaining high safety standards.



Utilities Advisory Board

agenda item 6.a

item type

Staff Updates

meeting date

October 22, 2024

prepared by

Jamie England, Director of Electric Utility

approved by**subject**

Electric Utility - Jamie England

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

1. Aug24 Electric Utility

Monthly Electric Utility Update (Aug)

Miles of Undergrounding performed

- Project J: 2.72 miles (82% complete)
- Project L: 9.57 miles (94% complete)
- Project R: 4.31 miles (100% complete)
- Residential Service Conversions (RSC) Last month: 38
- **Residential Service Conversions (RSC) This month: 24**
- RSC YTD: 664
- RSC LTD (beginning FY23): 1102

TOTAL for FY 2024 – 4.67 miles

- Total Citywide Project Miles- 127.5
- Total Miles Completed Last Month – 100.13
- **Total Miles Completed – 100.24**
- Percentage Completed Last Month - 78.5%
- **Percentage Completed This Month- 78.6%**
- Total miles remaining- 27.24

OH/UG Budget update

2024 Undergrounding budget = 7.78M

Notes of Interest

- Developing a policy/tariff update for the City that will identify dark sky decorative lighting for the City and outline the brightness levels for residential, business and DOT streets.
 - Dark Sky fixtures have been identified and will be assessed by COWP team.
 - 8 fixtures were placed on Lake Knowles
 - 4 around Lake Wilbar.
- Developing a plan for EV charging stations to have a fee for usage that will be designed to curb poor usage behavior on these charging station locations.
- Home Town Connections has established a plan, for executing the strategic plan for the Electric Utility, that has been reviewed and approved by the UAB.
- Project “R”, which was advanced by Commission to facilitate the 7 Oaks Park creation, will be 100% complete first half of April.
- Transformers have been placed in the field and UG mileage is beginning to reflect all the work that has been completed.

Issues/Concerns

- Project “J” is underway. This project will be time consuming and costly as the area is very dense and has little open area for our undergrounding.

2024 Goals

- Zero personal injuries within work group
- Zero controllable vehicle accidents within work group
- Mileage goal undetermined due to supply issues

- Green indicates goal has been met
- Red indicates goal will not be met
- Orange indicates still underway



Utilities Advisory Board

agenda item 6.b

item type

Staff Updates

meeting date

October 22, 2024

prepared by**approved by****subject**

Water & Wastewater Utility – David Zusi

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

None



Utilities Advisory Board

agenda item 6.c

item type

Staff Updates

meeting date

October 22, 2024

prepared by

Wes Hamil, Director of Finance

approved by**subject**

Performance Measurement – Wes Hamil

motion | recommendation

No action is necessary

background

The attached performance measurements are presented to keep the board informed of the status and trends of important data points for the Water and Wastewater and Electric Utilities. Separate charts for city solar facilities showing monthly production trends were appended to the performance measurement report.

alternatives | other considerations**fiscal impact**

None

attachments

1. Utility Monthly Performance Measurements- Black and White

Utility Monthly Performance Measurements

These measures are used as management tools to evaluate performance in key areas and draw attention to those that may require further investigation. This report organizes the performance measurements by service type.

Electric Utility

Service Type	Measure	Goal	June	July	August	On Target
Efficiency	Rate Comparison to Duke	<100%	68.16%	68.16%	68.16%	Met Goal
	Rate Comparison to Municipal State Avg	<105%	87.52%	89.16%	90.16%	Met Goal
Financial	Rolling 12 month kWh	425 (FY24)	440,084,110	439,942,624	442,368,438	Met Goal
Operational	Heart of Florida United Way Emergency Utility Assistance Program: Assistance provided to customers		\$1,170	\$5,289	\$3,779	
	Heart of Florida United Way Emergency Utility Assistance Program: Available balance		\$16,659	\$11,370	\$7,591	
	Heart of Florida United Way Emergency Utility Assistance Program: Number of customers approved for assistance		4	11	11	
	Underground System Complete (%)		78.4%	78.5%	78.6%	
Reliability	SAIDI (in minutes)	< 60 minutes	2.41	3.20	3.10	
	Outage Occurrences		22	16	20	

Both

Service Type	Measure	Goal	June	July	August	On Target
Customer Service	Total calls to customer service queue:		6,500	6,686	7,295	
	Customer hangup without selecting a queue		1,207	1,121	1,366	
	Turn on/off service		989	1,069	882	
	Billing info		1,321	1,409	1,369	
	Pay utility bill		863	866	918	
	Paymentus information		51	53	38	
	Report power outage		449	587	616	
	System error and flow disconnect		107	92	131	
	Demolition		11	24	35	
	Commercial garbage		29	42	65	
	Transfer to water and wastewater		56	86	107	
	Spectrum service		83	97	169	
	Permits		1,245	1,137	1,514	
	Engineering inspections		89	103	85	
	Average wait time for customers selecting a queue		2m19s	1m56s	2m1s	
	Abandoned call % for customers selecting a queue		8%	6%	7%	
	Number of disconnects for non-pay		56	0	0	

Financial

Service Type	Measure	Goal	June	July	August	On Target
Financial	Accounts receivable/billed revenue – FYTD	<8%	6.84%	5.97%	6.24%	Met Goal
	Average cost of purchased power per kWh – FYTD – Fuel		\$0.0259	\$0.0257	\$0.0253	
	Average cost of purchased power per kWh – FYTD – Non-Fuel	<\$0.03	\$0.0212	\$0.0208	\$0.0206	Met Goal
	Average revenue per kWh-FYTD-Fuel		\$0.0253	\$0.0252	\$0.0251	
	Average revenue per kWh-FYTD-Non-Fuel		\$0.0817	\$0.0817	\$0.0816	
	Bad debt expense/billed revenue – FYTD	<0.25%	0.34%	0.28%	0.22%	Met Goal
	Debt service coverage ratios - W&S - FYTD	>1.5	3.03	3.05	3.00	Met Goal
	Debt service coverage ratios - Electric - FYTD	>2.75	3.44	3.56	3.62	Met Goal
	Percentage of utility accounts receivable over 60 days past due		3.72%	5.11%	6.50%	
	Utility accounts receivable over 60 days past due – all accounts		\$268,432	\$325,224	\$432,110	
	Utility accounts receivable over 60 days past due – inactive accounts only		\$6,304 (566 accts)	\$19,673 (687 accts)	\$42,635 (797 accts)	
	Fuel cost stabilization fund (minimum balance trigger point for adjustment is \$1,050,000 and maximum balance trigger point is \$1,750,000)	\$1,400,000 target balance	\$1,582,934	\$1,433,806	\$1,465,334	Met Goal

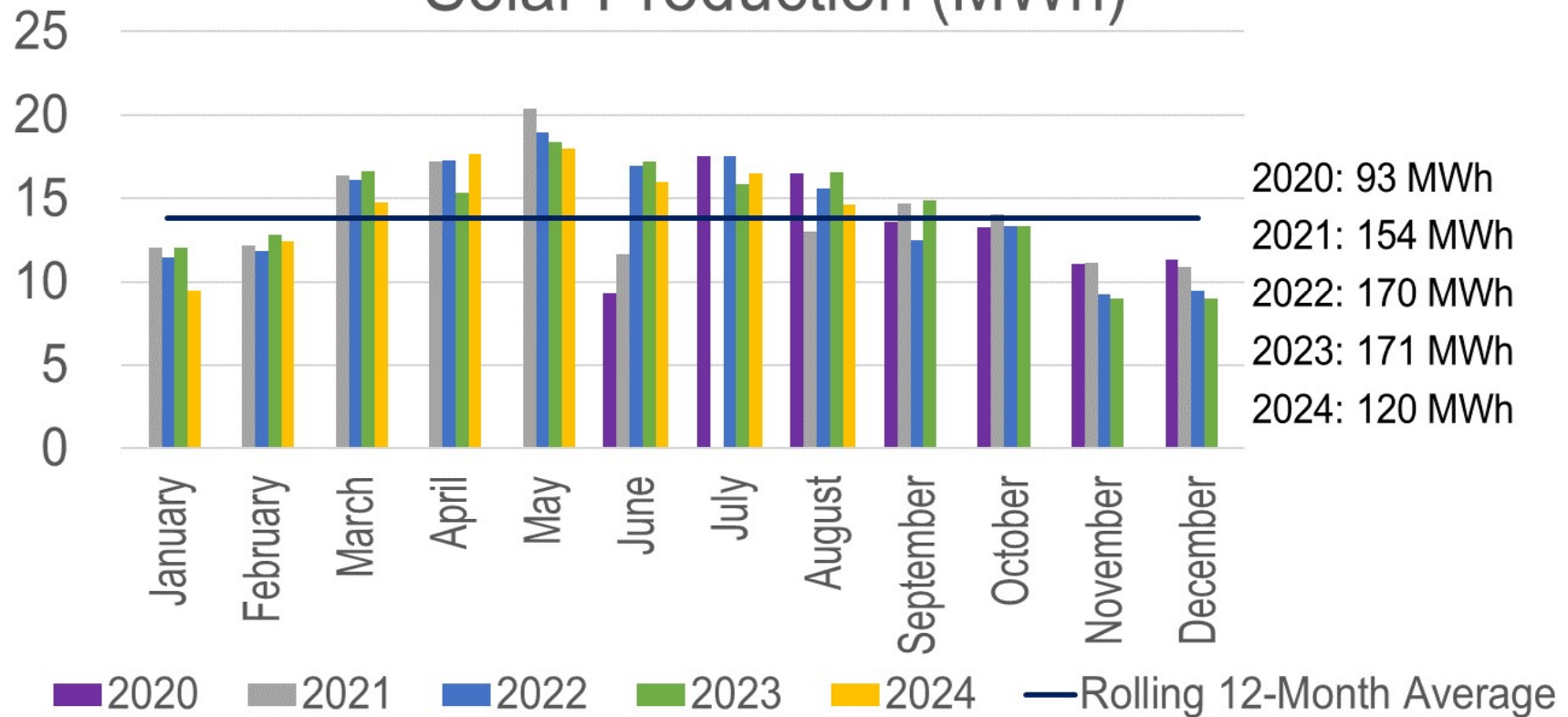
Water Sewer Utility

Service Type	Measure	Goal	June	July	August	On Target
Environment	Count of Rebates Processed		5	2	10	
Operational	Average % Water meters reporting	>98.5%	95.00%	94.86%	94.43%	Near Goal
	Count of Wastewater Incidents	0	0	0	N/A	
	Wastewater Incident Overflow in 1,000s Gallons	0	0	0	N/A	
	Water pumped compared to CUP allocation	<12.4 mgd	11.9	11.6	N/A	Met Goal

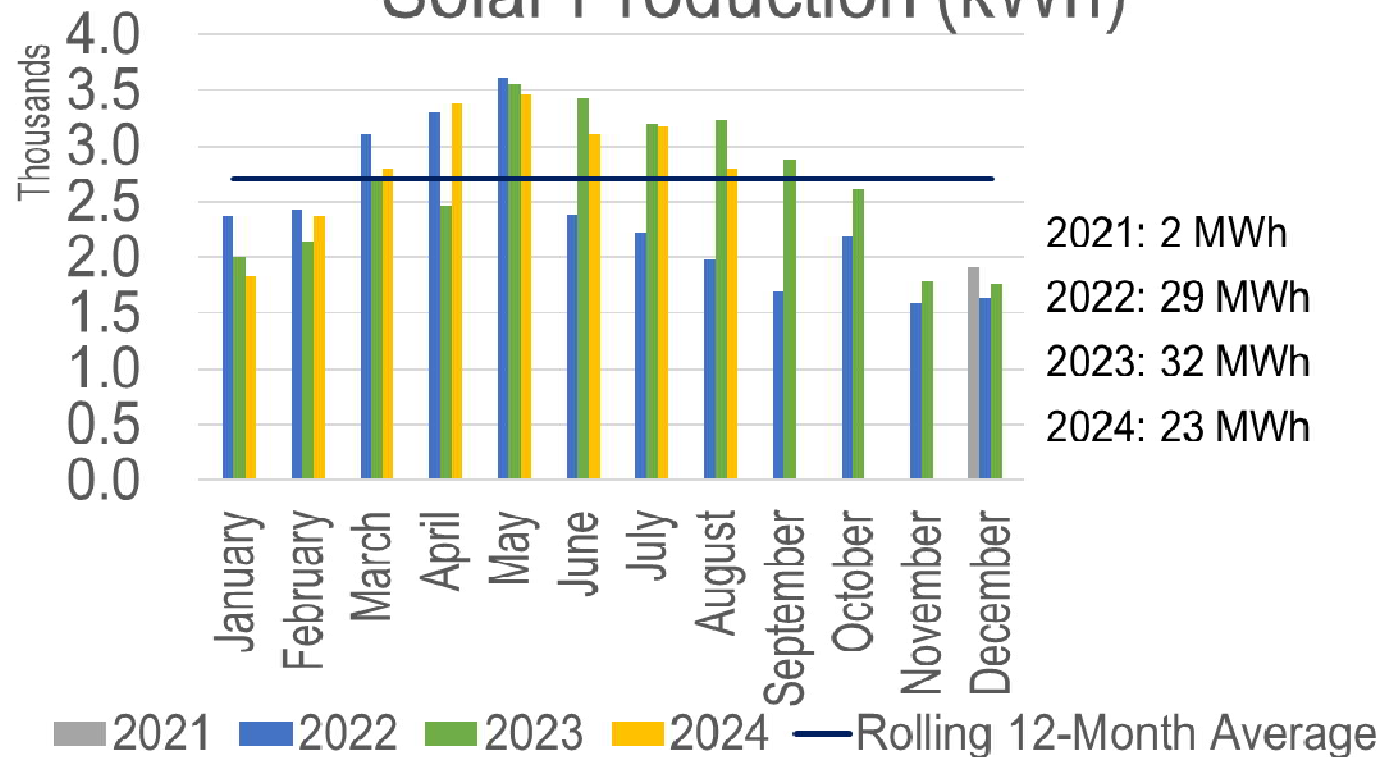
*FMPA and FMEA data often lag 1or2 months.

Index Key- the monthly data text is colored green when the change from the previous month is an improvement, and red when it is not. The On Target column is highlighted comparing the most recent monthly data to the Goal: Red if below, Yellow if Near, Green if Above.

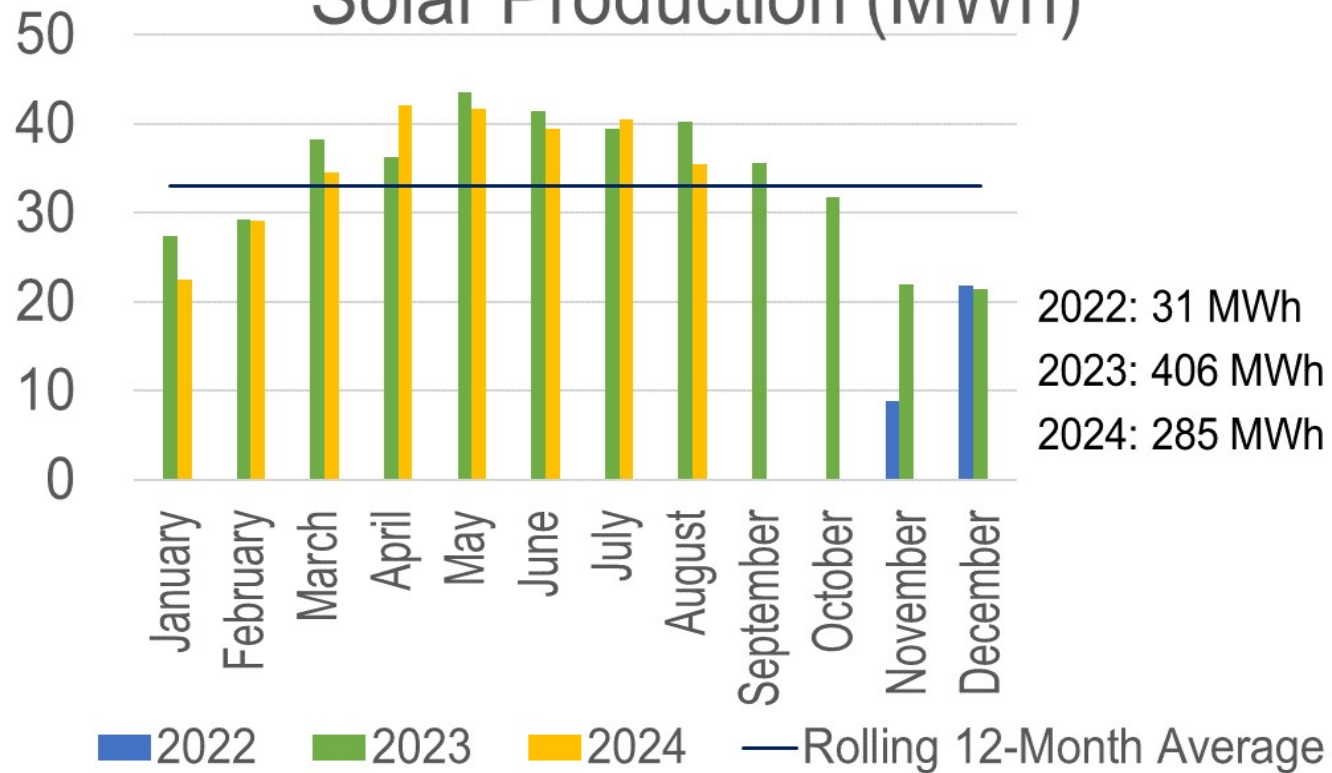
Aloma Water Treatment Facility Solar Production (MWh)



WP Library & Event Center Solar Production (kWh)



WP Electric Warehouse Solar Production (MWh)





Utilities Advisory Board

agenda item 6.d

item type

Staff Updates

meeting date

October 22, 2024

prepared by**approved by****subject**

Educational Campaign – Clarissa Howard

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

1. 8.5x11utility-2024-november bill insert

info & updates

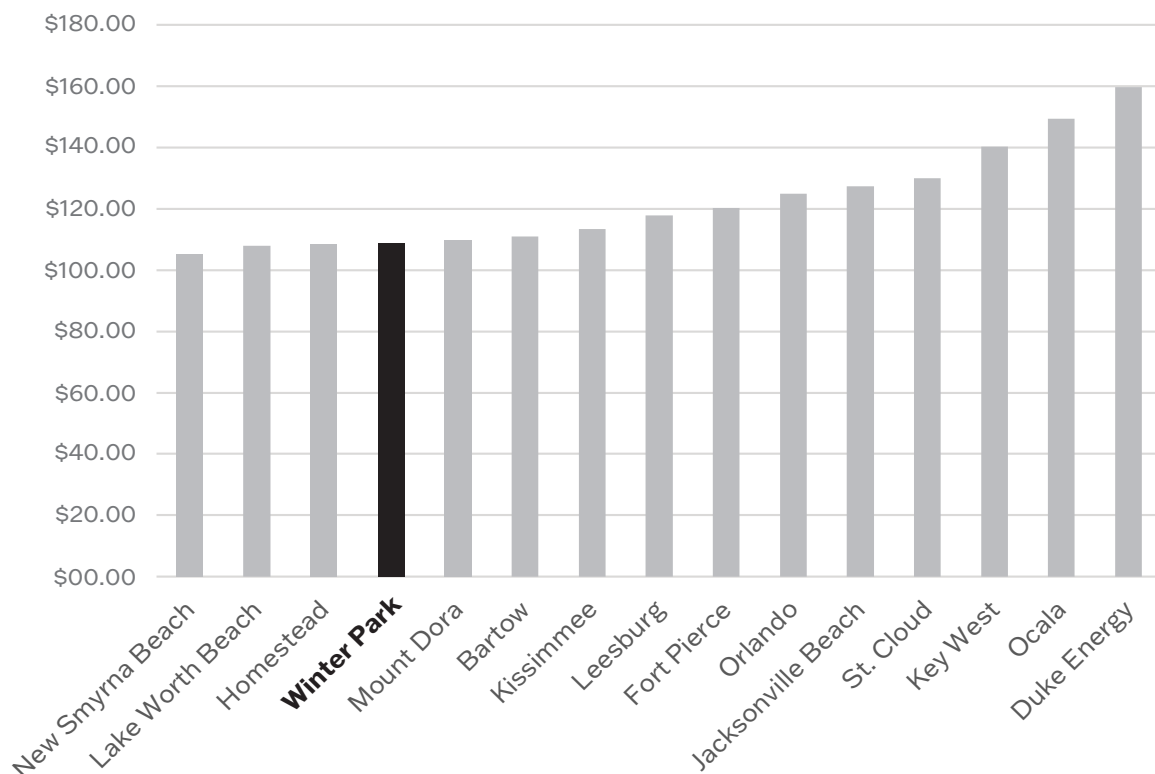
November utility bill insert



Winter Park continues to have some of the lowest electric rates for Florida municipalities

1,000 kWh Residential Bill Comparison for August 2024

Florida Municipal Utilities with Customer Counts between 5,000 and 100,000 with the addition of neighboring utilities OUC & Duke Energy® Florida



for updates on upcoming things to enjoy, please access
cityofwinterpark.org/events



wpfd classes

The Winter Park Fire-Rescue Department is committed to keeping its community informed and safe by providing multiple class options. Attendees will learn valuable skills to prepare them to help in an emergency situation whether at home, school, work or out in their community. We look forward to teaching everyone these life-saving skills.



registration



« scan the code or access
wpfd.org/classes
for class dates & details

location

Station 61 fire-rescue headquarters
343 W. Canton Ave. | Winter Park

questions & info

✉ rmattingly@cityofwinterpark.org
☎ 407-599-3317



Thursday, December 5

what Christmas in the Park
when 6:15 p.m.
where Central Park, downtown Winter Park
info 407.645.5311

Friday, December 6

what Winter on the Avenue featuring the Annual Tree Lighting
when 5 p.m.
where Central Park, downtown Winter Park
info 407.644.8281

Saturday, December 7

what Winter Park "Ye Olde Hometown" Christmas Parade
when 9 a.m.
where Park Avenue, downtown Winter Park
info 407.644.8281

Sunday, December 8

what Holiday Pops Concert
when 5 p.m.
where Central Park Main Stage, downtown Winter Park
info 407.770.0071

Saturday, December 14

what Merry TUBACHRISTMAS
when 9 a.m. registration; 10 a.m. practice; 1 p.m. concert
where Central Park Main Stage, downtown Winter Park
info 407.599.3463

what Wreaths Across America
when noon
where Palm Cemetery
 1005 N. New York Ave.
 Pineywood Cemetery
 1810 S. Lakemont Ave.
info 407.599.3252

Saturday, December 28

what Pop-Tarts® Bowl Parade of Bands
when 9 a.m.
where Park Avenue & Central Park
info 407.599.3463

cityofwinterpark.org/holiday-events

Helpful irrigation reminders 11.04.24 thru 03.09.25

- Irrigation between 10 a.m. and 4 p.m. is PROHIBITED.
- Water no more than one hour per zone, or ¾" per zone per day.
- ODD numbered addresses OR properties with NO addresses MAY water Saturday between the hours of 4 p.m. and 10 a.m.
- EVEN numbered addresses MAY water on Sunday between the hours of 4 p.m. and 10 a.m.
- Non-residential properties MAY water on Tuesday between the hours of 4 p.m. and 10 a.m.
- Properties with new lawns or landscaping are EXEMPT from the restriction for the first 30 DAYS.

Conversations brewing at CoffeeTalk

Mark your calendars to join your city leaders for a cup of conversation and coffee.

brewing schedule	:	DEC 05	Commissioner Marty Sullivan
		JAN 09 2025	Mayor Sheila DeCiccio
Thursdays 8:30-9:30 a.m.	:		

Commission Chambers @ 401 S. Park Ave.

Virtual link access will be available approximately one week prior to each gathering at cityofwinterpark.org/meetings.

Waste Pro® Holiday Collection Schedule

Household garbage, recycling & yard trash **will not be collected:**

- Thanksgiving Day
- Christmas Day
- New Year's Day

Normal services will resume on your next regularly scheduled collection day.

please
note

City Hall CLOSED

1/2 day tuesday &
all day wednesday

DEC 24 & 25

in observance of Christmas





Utilities Advisory Board

agenda item 6.e

item type

Staff Updates

meeting date

October 22, 2024

prepared by

Lisa Vedder

approved by**subject**

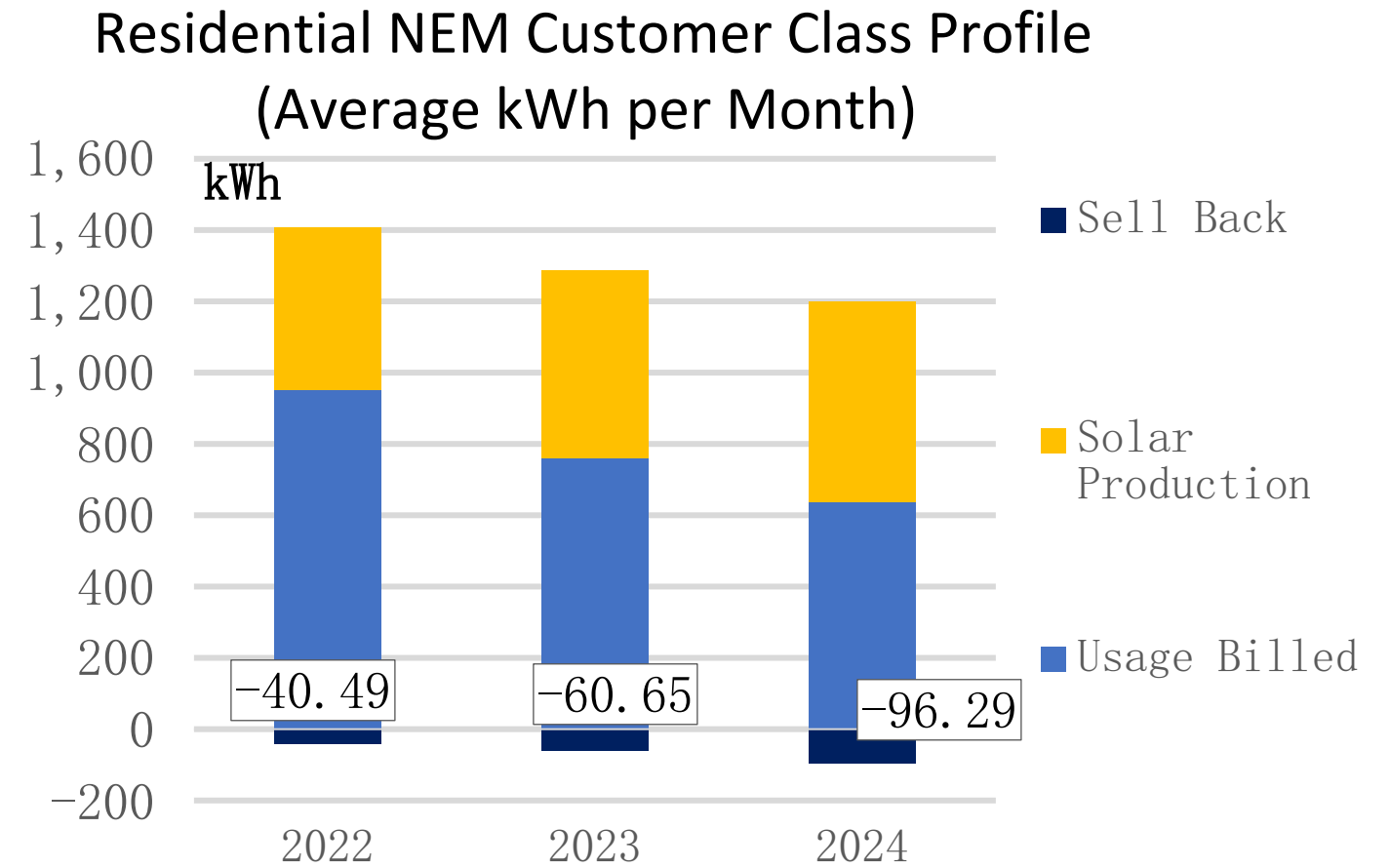
Requested Items from Last Meeting

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

1. UAB NEM DG ANALYSIS 10222024
2. QUANTA DG TARGETS
3. Net Metering Policy

2022																											
ACTUAL	USAGE	SOLAR		TIER 1	TIER 2	TIER 1	TIER 2		CUSTOMER	TIER 1	TIER 2	FUEL	FUEL	COS FIXED					AVERAGE	AVERAGE NO	AVERAGE	AVERAGE	AVERAGE				
USAGE	BILLED	PRODUCTION		NO DG	NO DG	NEM	NEM		CHARGE	ENERGY	ENERGY	ADJUSTMENT	ADJUSTMENT	CHARGE	COS				PER	PER	PER	PER	PER				
(KWH)	(KWH)	(KWH)		(KWH)	(KWH)	(KWH)	(KWH)		(\$/MONTH/C	(\$/KWH)	(\$/KWH)	(\$/KWH)	(\$/KWH)	(\$/MONTH/C	(\$/KWH)				CUSTOMER	CUSTOMER	CUSTOMER	CUSTOMER	CUSTOMER				
(KWH)	(KWH)	(KWH)		(KWH)	(KWH)	(KWH)	(KWH)		USTOMER)			T1	T2	CUSTOMER)					(\$)	(\$)	(\$)	(\$)	(\$)	KWH ON BILL	NEGATIVE	AVERAGE	
AUGUST	211,152	145,209	65,943	129	117,473	93,679	83,895	61,314	\$ 16.98	\$ 0.07697	\$ 0.08697	\$ 0.07697	\$ 0.08697	\$ 112.63	\$ 0.08178	\$ 25,770.17	\$ 36,568.74	\$ 31,797.28	\$ 199.77	\$ 283.48	\$ 246.49	1,637	1,126	511	(7,588)	17	(446)
SEPTEMBER	196,585	136,791	59,794	131	120,056	76,529	86,786	50,005	\$ 16.98	\$ 0.06624	\$ 0.08840	\$ 0.06787	\$ 0.07787	\$ 112.63	\$ 0.07273	\$ 22,177.58	\$ 31,049.57	\$ 29,052.16	\$ 169.29	\$ 237.02	\$ 221.77	1,501	1,044	456	(5,402)	14	(386)
OCTOBER	191,566	128,146	63,420	131	119,471	72,095	85,179	42,967	\$ 16.98	\$ 0.06624	\$ 0.08840	\$ 0.06787	\$ 0.07787	\$ 112.63	\$ 0.07273	\$ 20,791.86	\$ 30,233.87	\$ 28,687.13	\$ 158.72	\$ 230.79	\$ 218.99	1,462	978	484	(3,940)	13	(303)
NOVEMBER	162,395	99,167	63,228	138	114,469	47,926	68,313	30,854	\$ 16.98	\$ 0.06624	\$ 0.08840	\$ 0.04774	\$ 0.05774	\$ 112.63	\$ 0.05114	\$ 14,638.56	\$ 22,394.32	\$ 23,847.82	\$ 106.08	\$ 162.28	\$ 172.81	1,177	719	458	(7,696)	23	(335)
DECEMBER	171,806	121,932	49,874	137	116,903	54,903	85,454	36,478	\$ 16.98	\$ 0.06624	\$ 0.08840	\$ 0.03967	\$ 0.04967	\$ 112.63	\$ 0.04294	\$ 16,413.21	\$ 22,287.91	\$ 22,807.66	\$ 119.80	\$ 162.69	\$ 166.48	1,254	890	364	(3,112)	14	(222)
TOTAL	933,504	631,245	302,259		588,372	345,132	409,627	221,618								\$ 99,791.38	\$ 142,534.41	\$ 136,192.04							(27,738)	81	
AVERAGE MONTHLY	186,701	126,249	60,452	137	117,674	69,026	81,925	44,324								\$ 19,958.28	\$ 28,506.88	\$ 27,238.41	\$ 150.73	\$ 215.25	\$ 205.31	1,406	951	455	(5,548)		(338)
2023																											
JANUARY	201,563	159,298	42,265	132	120,904	80,659	100,323	58,975	\$ 16.98	\$ 0.06624	\$ 0.08840	\$ 0.03967	\$ 0.04967	\$ 112.63	\$ 0.04294	\$ 21,009.25	\$ 26,182.89	\$ 23,522.28	\$ 159.16	\$ 198.36	\$ 178.20	1,527	1,207	320	(1,413)	4	(353)
FEBRUARY	140,746	67,333	73,413	137	108,312	32,434	51,057	16,276	\$ 16.98	\$ 0.06624	\$ 0.08840	\$ 0.03967	\$ 0.04967	\$ 112.63	\$ 0.04294	\$ 9,980.93	\$ 18,275.75	\$ 21,473.94	\$ 72.85	\$ 133.40	\$ 156.74	1,027	491	536	(12,175)	32	(380)
MARCH	157,255	64,651	92,604	152	115,738	41,517	46,252	18,399	\$ 16.98	\$ 0.06624	\$ 0.08840	\$ 0.03082	\$ 0.04082	\$ 112.63	\$ 0.03500	\$ 9,447.70	\$ 19,179.32	\$ 22,623.69	\$ 62.16	\$ 126.18	\$ 148.84	1,035	425	609	(19,301)	40	(483)
APRIL	171,343	62,511	108,832	160	126,143	45,200	41,112	21,399	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.02333	\$ 0.03333	\$ 112.63	\$ 0.02766	\$ 8,941.59	\$ 19,346.28	\$ 22,760.15	\$ 55.88	\$ 120.91	\$ 142.25	1,071	391	680	(23,646)	47	(503)
MAY	168,201	66,242	101,959	160	127,917	40,284	45,840	20,402	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.01835	\$ 0.02835	\$ 112.63	\$ 0.02281	\$ 8,910.10	\$ 18,072.26	\$ 21,857.46	\$ 55.69	\$ 112.95	\$ 136.61	1,051	414	637	(20,234)	46	(440)
JUNE	190,577	90,595	99,982	158	133,738	56,839	58,399	32,196	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.01835	\$ 0.02835	\$ 112.63	\$ 0.02281	\$ 11,291.10	\$ 20,441.11	\$ 22,142.60	\$ 71.46	\$ 129.37	\$ 140.14	1,206	573	633	(19,049)	40	(476)
JULY	230,786	137,356	93,430	177	145,482	85,304	86,730	50,626	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.01835	\$ 0.02835	\$ 112.63	\$ 0.02281	\$ 16,115.18	\$ 25,040.24	\$ 25,199.74	\$ 91.05	\$ 141.47	\$ 142.37	1,304	776	528	(10,537)	30	(351)
AUGUST	267,388	188,922	78,466	177	161,722	105,666	118,185	70,737	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.01835	\$ 0.02835	\$ 112.63	\$ 0.02281	\$ 21,072.35	\$ 28,754.64	\$ 26,034.63	\$ 119.05	\$ 162.46	\$ 147.09	1,511	1,067	443	(5,118)	15	(341)
SEPTEMBER	310,190	228,949	81,241	178	169,898	140,292	134,292	94,657	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.01835	\$ 0.02835	\$ 112.63	\$ 0.02281	\$ 25,204.46	\$ 33,463.01	\$ 27,123.57	\$ 141.60	\$ 187.99	\$ 152.38	1,743	1,286	456	(2,994)	12	(250)
OCTOBER	303,207	205,964	97,243	185	173,976	129,231	126,795	79,169	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.01835	\$ 0.02835	\$ 112.63	\$ 0.02281	\$ 22,903.91	\$ 32,642.44	\$ 27,752.70	\$ 123.80	\$ 176.45	\$ 150.01	1,639	1,113	526	(4,124)	15	(275)
NOVEMBER	227,385	120,306	107,079	187	159,752	67,633	81,984	38,322	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.02714	\$ 0.03714	\$ 112.63	\$ 0.03052	\$ 15,521.56	\$ 26,356.16	\$ 28,001.60	\$ 83.00	\$ 140.94	\$ 149.74	1,216	643	573	(14,088)	38	(371)
DECEMBER	206,390	135,768	70,622	188	155,596	50,794	104,007	31,761	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.02714	\$ 0.03714	\$ 112.63	\$ 0.03052	\$ 16,755.92	\$ 23,892.08	\$ 27,473.46	\$ 89.13	\$ 127.09	\$ 146.14	1,098	722	376	(4,144)	23	(180)
TOTAL	2,575,031	1,527,895	1,047,136		1,699,178	875,853	994,976	532,919								\$ 187,154.05	\$ 291,646.19	\$ 295,965.82							(136,823)	342	
AVERAGE MONTHLY	214,586	127,325	87,261	188	141,598	72,988	82,915	44,410								\$ 15,596.17	\$ 24,303.85	\$ 24,663.82	\$ 93.74	\$ 146.46	\$ 149.21	1,286	759	526	(11,402)		(367)
2024																											
JANUARY	201,448	140,492	60,956	187	149,965	51,483	107,937	32,555	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.02048	\$ 0.03048	\$ 112.63	\$ 0.02404	\$ 16,265.20	\$ 22,099.08	\$ 25,904.62	\$ 86.98	\$ 118.18	\$ 138.53	1,077	751	326	(2,870)	17	(169)
FEBRUARY	216,878	140,660	76,218	192	160,513	56,365	106,765	33,895	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.02048	\$ 0.03048	\$ 112.63	\$ 0.02404	\$ 16,407.60	\$ 23,663.64	\$ 26,838.71	\$ 85.46	\$ 123.25	\$ 139.78	1,130	733	397	(5,533)	21	(263)
MARCH	192,305	65,132	127,173	196	152,770	39,535	49,212	15,920	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.02048	\$ 0.03048	\$ 112.63	\$ 0.02404	\$ 9,423.18	\$ 21,083.91	\$ 26,698.49	\$ 48.08	\$ 107.57	\$ 136.22	981	332	649	(25,761)	70	(368)
APRIL	187,097	45,339	141,758	199	150,131	36,966	31,436	13,903	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.02048	\$ 0.03048	\$ 112.63	\$ 0.02404	\$ 7,712.60	\$ 20,605.80	\$ 26,911.18	\$ 38.76	\$ 103.55	\$ 135.23	940	228	712	(37,698)	79	(477)
MAY	211,483	47,724	163,759	204	160,145	51,338	29,540	18,184	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.02048	\$ 0.03048	\$ 112.63	\$ 0.02404	\$ 8,139.62	\$ 23,243.27	\$ 28,060.57	\$ 39.90	\$ 113.94	\$ 137.55	1,037	234	803	(46,379)	88	(527)
JUNE	295,028	165,710	129,318	199	178,920	116,108	100,161	65,549	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.02048	\$ 0.03048	\$ 112.63	\$ 0.02404	\$ 19,691.74	\$ 32,402.85	\$ 29,505.84	\$ 98.95	\$ 162.83	\$ 148.27	1,483	833	650	(18,321)	33	(555)
JULY	274,129	177,321	96,808	196	176,091	98,038	118,611	58,710	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.02048	\$ 0.03048	\$ 112.63	\$ 0.02404	\$ 20,416.15	\$ 29,979.32	\$ 28,665.54	\$ 104.16	\$ 152.96	\$ 146.25	1,399	905	494	(8,476)	28	(303)
AUGUST	308,330	214,197	94,133	199	184,907	123,423	134,074	80,123	\$ 16.98	\$ 0.06524	\$ 0.08740	\$ 0.02048	\$ 0.03048	\$ 112.63	\$ 0.02404	\$ 24,316.74	\$ 33,778.35	\$ 29,825.62	\$ 122.19	\$ 169.74	\$ 149.88	1,549	1,076	473	(8,259)	20	(413)
TOTAL	1,886,698	996,575	890,123		1,313,442	573,256	677,736	318,839								\$ 122,372.83	\$ 206,856.23	\$ 222,410.58							(153,297)	356	
AVERAGE MONTHLY	235,837	124,572	111,265	199	164,180	71,657	84,717	39,855								\$ 15,296.60	\$ 25,857.03	\$ 27,801.32	\$ 78.06	\$ 131.50	\$ 141.46	1,199	636	563	(19,162)		(384)

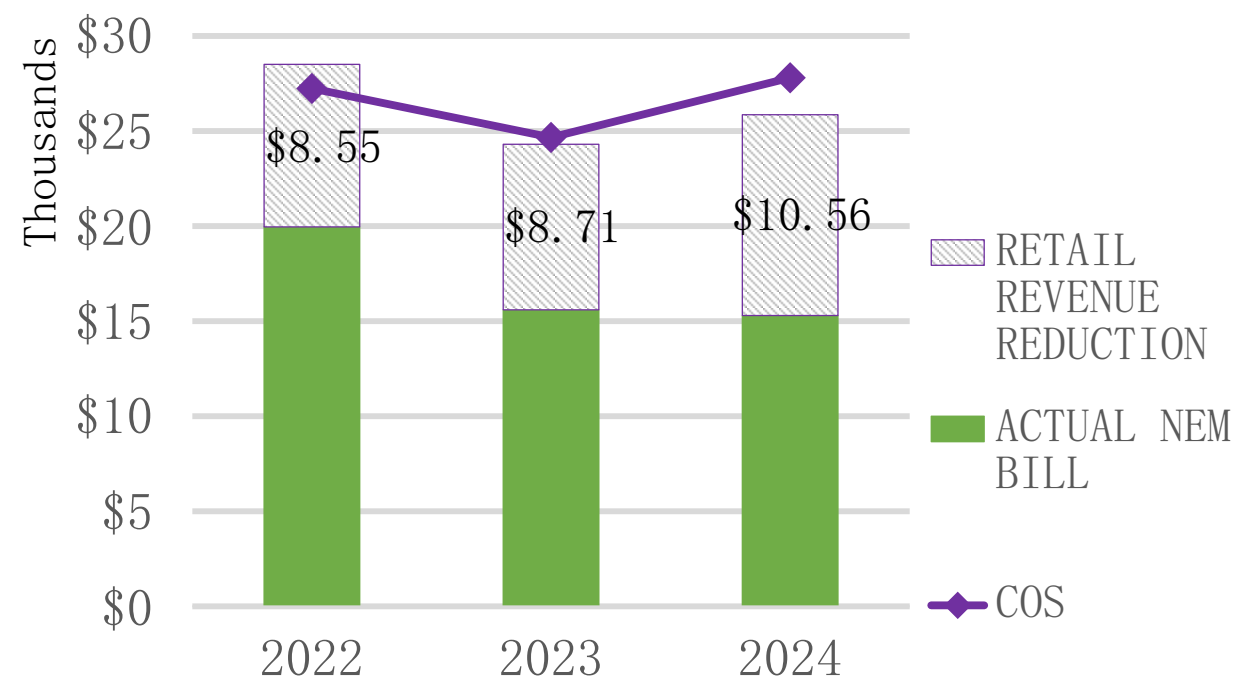
	Usage Actual	Usage Billed	Solar Productio n	Sell Back	Customers w/ Recorded Solar Production Events	
2022	1,406	951	455	(5,548)	137	-40.4934
2023	1,286	759	526	(11,402)	188	-60.6485
2024	1,199	636	563	(19,162)	199	-96.2921



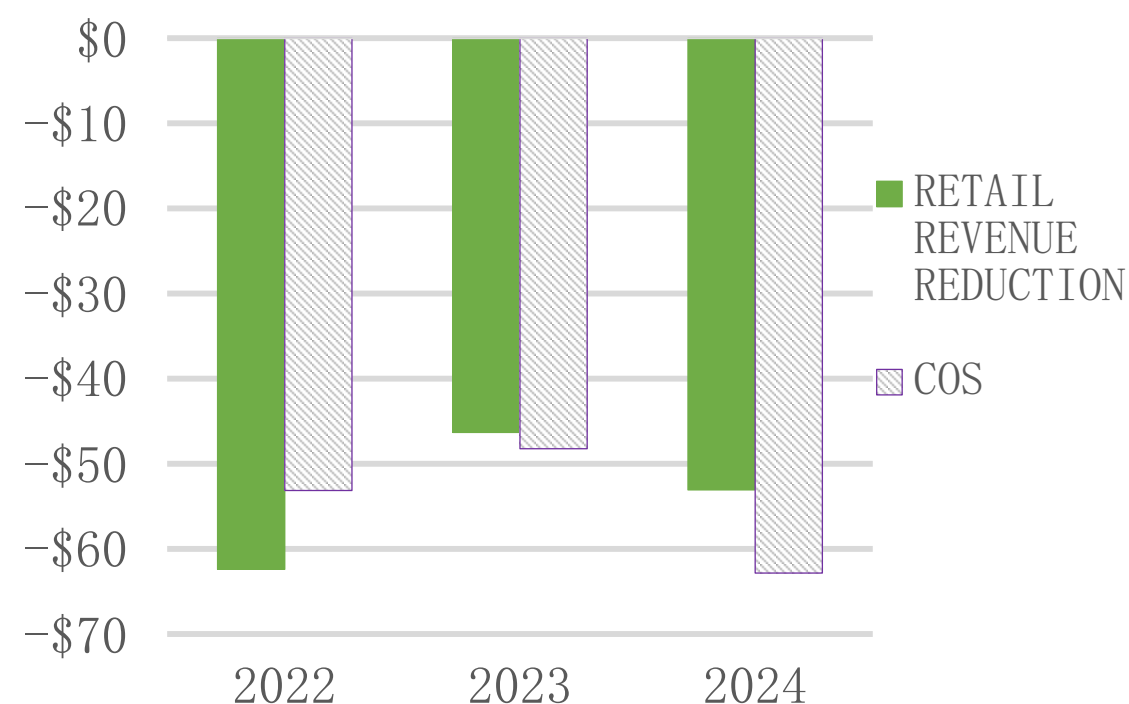
	ACTUAL NEM BILL	RETAIL REVENUE NO DG	COS	RETAIL REVENUE	COS SHORTFALL	Customers w/ Recorded Solar Production Events
2022	\$ 19,958.28	\$ 28,506.88	\$ 27,238.41	\$ 8,548.61	\$ 7,280.13	137
2023	\$ 15,596.17	\$ 24,303.85	\$ 24,663.82	\$ 8,707.68	\$ 9,067.65	188
2024	\$ 15,296.60	\$ 25,857.03	\$ 27,801.32	\$ 10,560.42	\$ 12,504.72	199

2022	\$ 145.68	\$ 208.08	\$ 198.82	\$ (62.40)	\$ (53.14)
2023	\$ 82.96	\$ 129.28	\$ 131.19	\$ (46.32)	\$ (48.23)
2024	\$ 76.87	\$ 129.93	\$ 139.71	\$ (53.07)	\$ (62.84)

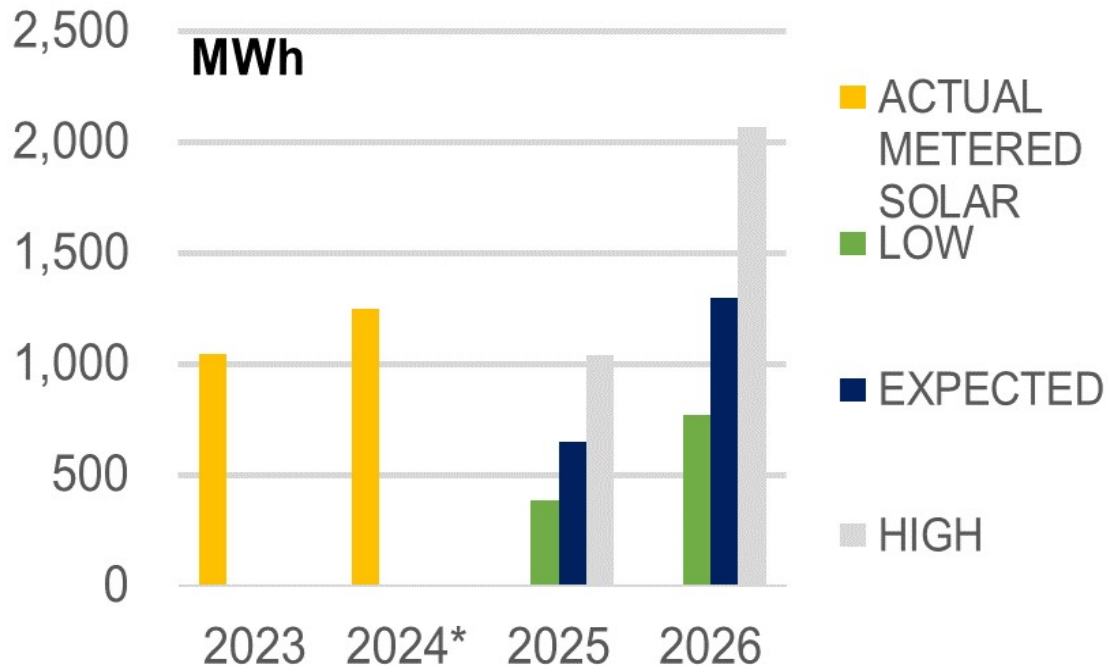
Impact of NEM on
Average Monthly Residential Revenue



Average Impact of Residential NEM
(\$/Residential NEM Customer/Month)



RESIDENTIAL SOLAR ACTUAL v IRP FORECAST



*Actual Data through September 2024 Annualized

Residential Distributed Solar

	EXPECTED (MWh)	HIGH (MWh)	LOW (MWh)
2025	650	1,037	387
2026	1,297	2,069	772
2027	2,591	4,132	1,542
2028	3,878	6,186	2,308
2029	5,809	9,266	3,457
2030	7,730	12,330	4,601
2031	10,291	16,417	6,126
2032	12,840	20,483	7,643
2033	15,376	24,528	9,152
2034	18,550	29,591	11,041
2035	21,707	34,628	12,920
2036	25,499	40,676	15,177
2037	29,922	47,732	17,810
2038	34,973	55,789	20,816
2039	39,349	62,769	23,421
2040	43,052	68,678	25,625
2041	46,087	73,519	27,432
2042	49,107	78,336	29,229
2043	51,462	82,093	30,631
2044	53,805	85,830	32,025
2045	55,486	88,512	33,026
2046	57,159	91,181	34,022
2047	58,823	93,836	35,012
2048	59,829	95,440	35,611
2049	60,830	97,037	36,207
2050	60,526	96,552	36,026



city commission agenda item

item type	Consent Agenda	meeting date	January 9, 2012
prepared by department division	Electric Department	approved by	☒ City Manager ☐ City Attorney ☐ N/A
board approval	☒ yes ☐ no ☐ N/A 9-0 final vote		

subject

Solar Incentives

motion | recommendation

Recommend the Commission approve the following components of a Winter Park Electric Solar PV incentive Program:

- 1) Net Metering Policy Attachment -1
- 2) Tier 1 interconnection agreement Attachment -2
- 3) Tier 2 interconnection agreement, Attachment – 3

background

At the November 14 City Commission meeting the City Commission approved entering into a master agreement with Progress Energy Florida (PEF) to provide energy auditor services for City of Winter Park electric customers. Customer energy audits is the foundational piece of a comprehensive energy conservation program. PEF was selected because it was the only willing Central Florida utility that was large enough to provide those services on a cost effective basis. PEF, via contract, already provides surge protection and home wire services to the City's electric customers.

Net Metering. At the November 28 City Commission meeting, the City Commission approved the various rebates for a City of Winter Park electric department conservation program. The rebates approved by the City Commission were identical to those offered by Progress Energy Florida with the exception that no rebates were proposed for the installation of customer-owned solar photovoltaic (PV) generation. Instead, the Utilities Advisory Board recommended that a net metering program be implemented as the mechanism to create appropriate incentives for customer-owned solar PV generating systems. Net metering is a mechanism that allows customers to be billed only for the kWh that they purchase net of the kWh that their solar system generates. Under a net metering policy, excess kWh that are shipped out into the electric system are mathematically held over for the benefit of the customer in subsequent months. This is a bit like having a virtual battery and is the most common approach used by electric utilities for addressing customer-owned solar. If there are kWh left over after a year, under a net metering program, the customer would be paid for those kWh. The UAB recommended that the rate used to derive that payment be based on the customer's retail rates. In making that determination, the UAB considered the following three criteria:

- 1) The rate should provide incentive for the customer installing solar PV generation,
- 2) The rate should not create an undue subsidy from non-solar customers and thereby measurably increase the retail rates of Winter Park Electric.

- 3) The rate should not be out of line when compared to the rates offered by other Central Florida utilities.

The UAB considered the range of rates from that of the City's wholesale cost of power at the low end to the retail rate at the high end. The UAB determined that paying Winter Park retail rates would reasonably meet all three criteria.

There are currently three solar PV generation systems installed by Winter Park Electric customers. A fourth system is currently under construction. The three existing systems consist of two 5 kW installations and one 7kW installation. The one under construction is rated at 15 kW. The four systems total 32 kW of installed capacity. Solar panels in Florida will generate electricity at about a 17% capacity factor. That means that on an annual basis the 5 kW systems will generate about 7,446 kWh per year. Another way of understanding a 17% capacity factor is the solar facility will generate electricity at its full output for 17% of the hours on an annual basis. For instance 17% of the hours is 1,489 hours per year or an average of about 4.1 hours per day. An average Winter Park Electric customer consumes about 1,400 kWh per month or 16,800 kWh per year. The smaller systems will generate less electricity in a year than the customer consumes. It is therefore unlikely that there will be a net sale of power to the Winter Park Electric system. Depending on the size and consumption of the residences associated with the two larger systems, sales, if any of excess kWh back to the City's electric system are expected to be small.

Table 1 below summarizes the solar incentive rates provided by Progress Energy Florida (PEF), Orlando Utilities Commission (OUC) and Gainesville Regional Utilities (GRU). GRU is included in the survey since it has a reputation of being a world leader in incentivizing customer-owned generation.

Survey of Net Metering Rates
Table 1

Utility	Net Metering Rate
OUC	Retail Rate + 5¢/kWh for all generated solar kWh
PEF	Retail Rate ≈ 12¢/kWh sold back into the system
GRU Feed-in Tariff	Tier 1 (<10kW) = 32¢/kWh
	Tier 2 (>10kW< 300 kWh roof mount) = 29¢/kWh
	Tier 3 (>300kW< 1,000 kW ground mount) = 24¢/kWh

As can be seen by the above table GRU offers a rate for solar kWh that is dramatically above its retail rates. As a result of its policies, GRU is facing rapidly increasing penetration of solar in its utility system and has lost its position as a low cost electricity provider. On a per capita basis GRU leads the country and Japan in solar generation. GRU offers a net metering approach, but also offers a "feed-in tariff" approach where it agrees to buy kWh from customer-owned renewable generation. GRU sets the rate at a level to provide the customer a 4% return on its investment over the expected 20 year life of the facility. GRU fixes the rate to yield that return and agrees to it for the entire 20 year period.

The following Table 2 provides the subsidy analysis for 50 kW of solar which is 43% more than exists and/or is presently under construction in Winter Park.

As can be seen, at a 50 kW level and a 17% capacity factor, absorbing 74,460 kWh of solar generation has an annual financial impact of \$3,351 which is financially De minimis to the City and far less than the accuracy of our annual load/revenue forecasts.

**Subsidy Analysis
Table 2**

Value of Solar in avoided Wholesale Cost	7.5 ¢/kWh
Estimated average FY 2012 residential retail rate	12¢/kWh
Subsidy (¢/kWh)	4.5¢/kWh
Annual output of 50 kW of solar (17% cap. Factor)	74,460 kWh
Total subsidy	\$3,351
Estimated FY 2012 Electric Sales Revenues (base + fuel)	\$48.14 Million
Total subsidy as a percent of annual Retail Sales	.007%
Annual impact on a 1,000 kWh customer	9.9¢

The UAB concluded that implementing a net metering policy with credits occurring at the full retail rate was an appropriate incentive and met all three of the criteria described above. In staff's opinion, the proposed net metering policy is reasonably competitive with those offered by other comparable electric utilities in Florida.

Interconnection Agreements. In addition to implementing a net metering policy, allowing customers to install and operate what amounts to a small power plant that is connected to the City of Winter Park's electric system, an interconnection agreement between the customer and the City is required. Generally speaking, an interconnection agreement lays out the responsibilities of both parties as relates to the installation and operation of a customer owned Renewable Generation System (RGS). Customer owned generation of the type envisioned by the net metering policy operates in "parallel" with the City of Winter Park's electric system. That means that kWh are simultaneously being provided by the City's purchases from its wholesale supplier and the customer's RGS. As the customer's electricity requirements change from second to second and the output of the RGS changes, the customer either consumes all of the electricity produced by the RGS plus kWh supplemented by the City or the customer consumes less than the RGS output and kWh flow back into the City's distribution system for the instantaneous use by other City customers. The net metering policy described above, credits these excess kWh to the customer's usage in subsequent months thereby giving the customer the full value of the excess kWh generated. This would be like the customer having a battery system in which the customer saves the kWh for future usage, e.g. at night or at other times when the customer's usage exceeds the output of the RGS.

Parallel operation creates safety issues that are addressed by the interconnection agreement. If operation of the City's electric system creates a situation either planned or unplanned whereby the distribution system is de-energized, the customer's RGS could energize the system creating safety concerns for electric system workers or citizens in the case of downed wires. In the beginning of the RGS industry, it was felt that physical disconnect switches should be required such that passing electric linemen could ascertain that the customer's RGS was physically disconnected. As the industry matured, however, technical standards such as the Institute of Electrical and Electronic Engineers (IEEE) standards 1547 and Underwriters Laboratory 1741 were introduced that required control equipment on solar and other RGS that prevent islanding. In other words anti-islanding protection shuts down a customer owned solar RGS if it detects that that the City's electric system has lost power. All RGS are required by the interconnection agreements to meet the National Electric Code (NEC), IEEE 1547 and UL 1741. After the adoption of the anti-islanding standards, physical disconnect switches were no longer seen as essential to achieve safe operation of customer-owned RGS.

Staff is proposing two interconnection agreements, Tier 1 for customer-owned RGS with an output capacity of 10 kW or less and Tier 2 for customer-owned RGS with an output capacity of more than 10kW, but less than 100 kW. To put a cost perspective on these systems, solar can be installed today at a price of about \$4.00 per watt. A 1,000 watt system or 1 kW system will cost about \$4,000. A 5 kW system would cost around \$20,000, a 15 kW system around \$60,000 and a 100, kW system would cost around \$400,000. Although shade, latitude, number of rain days, age of the solar panels, and cleanliness all affect the output of a solar system, a good round number is about 10 watts per square foot, or 1,000 watts (i.e. 1 kW) per 100 square feet. A 5 kW system would require about 500 square feet of panels and a 15 kW system would require about 1,500 square feet.

The proposed interconnection agreements are comparable to the interconnection agreements required by other utilities and generally mirror the requirements that the Florida Public Service Commission (FPSC) and the investor owned utilities developed and agreed to. The major features of the Tier 1 and Tier 2 Interconnection Agreements are summarized in Table 3 below.

Interconnection Agreement – Summary of Major Provisions
Table 3

Provision	Tier 1	Tier 2
Liability Insurance with City as Additional Insured	\$100,000 recommended	\$1.0 million required
Manual Disconnect Switch	Not Required	Required Customer furnished
Application Fee	None	\$240
Must meet NEC, IEEE 1547, & UL 1741	Yes	Yes
Net metering provided at City's expense	Yes	Yes
Separate metering for RGS output may be provided at City's expense	Yes	Yes

As can be seen, the interconnection agreements for the smaller system < 10kW recommend, but do not require liability insurance, do not require a manual disconnect switch, and do not require an application fee. The FPSC and the IOUs determined to avoid placing too many obstacles on the smaller systems and therefore adopted interconnection requirements that tended to reduce the costs of the smaller systems when compared to the larger Tier 2 systems.

With regard to metering, the new AMR meters recently installed by the City on its electric customers already have net metering capability and so new net meters will not be required. Staff is recommending the City have the right to install separate meters on the output of the customer-owned RGS in order to measure the amount of power generated by the RGS vs. the amount being net consumed by the customer. This will give staff the ability to quantify the output of the RGS, the customer's requirements, and the amount of supplementary power provided by the City.

- 1) All Florida utilities are required under FPSC rules to develop net metering policies. The City does not therefore have, as an alternative the right to not implement a net metering policy.
- 2) The City can implement other interconnection standards such as requiring physical disconnect switches and minimum liability coverage on the smaller systems
- 3) The City can offer a net metering credit that provides value to the customer at rates lower or higher than those included in the proposed net metering policy.

fiscal impact

At the level of retail rates and likely penetration rates of solar RGS, the fiscal impact on the City is not expected to be material. Staff notes, however, that adjustments can quickly be made to any aspect of the proposed program if the impact warrants a change.

long-term impact

The adoption of net metering policies and RGS interconnection standards will encourage the installation of customer-owned solar PV Renewable Generation Systems. The installation of customer owned solar PV provides two advantages:

- 1) kWh generated by solar displace kWh that would have otherwise been generated by fossil fuels which reduces the carbon footprint caused by the City's electric customers; and
- 2) Encourages the maturation of the solar industry, which will result in decreasing the cost of solar, thereby making it more cost effective in the future.

strategic objective

Quality Environment and Exceptional Customer Service

Attachments:

ATTACHMENT – 1

NET METERING POLICY

PART VIII

BILLING (Continued)

8.08 Net Metering for Customer-Owned Renewable Generation

For customers with renewable generation equipment that have executed an interconnection agreement with the City monthly billing will be prepared in the following manner:

- (1) At no additional cost to the customer, metering equipment will be installed by the City capable of measuring the difference between the electricity supplied to the customer from the City and the electricity generated by the customer and delivered to the City's electric grid. Additionally, at the discretion of the City and at no additional cost to the Customer, the City may install metering equipment to measure the output of the customer-owned renewable generation.
- (2) Meter readings will be taken monthly on the same cycle as required under the otherwise applicable rate schedule in accordance with normal billing practices of the City.
- (3) The City will charge the customer for energy used by the customer in excess of the generation supplied by customer owned renewable generation for the entire billing cycle in accordance with the otherwise applicable rate schedule.
- (4) During any billing cycle, excess customer-owned renewable generation delivered to the City's electric grid will be credited to the customer's energy consumption for the next month's billing cycle.
- (5) Regardless of whether excess energy is delivered to the City's electric grid, the customer will be required to pay the greater of:
 - i. the minimum charge as stated in their otherwise applicable rate schedule, or
 - ii. the applicable monthly customer charge plus the applicable demand charge, if any, for the monthly maximum 30-minute demand measured on the company's usage meter during the billing period in accordance with the otherwise applicable rate schedule
- (6) Energy credits produced pursuant to section 4 above will accumulate and be used to offset the customer's energy usage in subsequent months for a period of not more than twelve months. After the end of each calendar year the City will credit the customer (on the February bill) for any unused energy credits at an average annual rate based on the customer's applicable rate tariff then in effect for the previous calendar year.
- (7) Excess energy consumption will be applied only to the electric service provided at the location of the renewable generation system and will not be applied to other locations or services at the same location that the customer may take from the City.
- (8) When a customer leaves the Company's system, unused credits for excess kWh generated will be credited to the customer at an average annual rate based on the customer's applicable rate tariff then in effect.

ATTACHMENT – 2

NET METERING – TIER 1

STANDARD INTERCONNECTION AGREEMENT

Tier 1

Standard Interconnection Agreement

Customer-Owned Renewable Generation System

This Agreement is made and entered into this ____ day of _____, 20____ by and between _____, (hereinafter called "Customer"), located at _____ in _____, Florida, and the City of Winter Park, Florida (hereinafter called the "City"), a Florida municipal corporation. Customer and the City shall collectively be called the "Parties". The physical location or premise where the interconnection is taking place:

_____.

WITNESSETH

WHEREAS, a Tier 1 customer-owned renewable generation system ("RGS") is an electric generating system located at customer's premises that uses one or more of the following fuels or energy sources: hydrogen, biomass, solar energy, geothermal energy, wind energy, ocean energy, waste heat, or hydroelectric power as defined in Section 377.803, Florida Statutes, rated at no more than 10 kilowatts (10 kW) alternating current (AC) power output and is primarily intended to offset part or all of the Customer's current electric requirements; and

WHEREAS, the City operates an electric utility serving customers within the City limits; and

WHEREAS, Customer has made a written application to the City, a copy being attached hereto, to interconnect its RGS with the City's electrical supply grid at the location identified above; and

WHEREAS, in order to promote the development of small customer-owned renewable generation, the City offers net metering service by which customers may interconnect their customer-owned renewable generation system with the City's electric system and to allow the City's customers to offset their electric consumption with customer-owned renewable generation, and agrees to credit Customer for excess customer-owned generation; and

WHEREAS, the City desires to provide interconnection of customer-owned renewable generation systems under conditions which will insure the safety of the City's customers and employees, and the reliability and integrity of its distribution system;

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements herein set forth, the parties hereto covenant and agree as follows:

1. This agreement is strictly limited to cover a Tier 1 RGS as defined above. It is the customer's responsibility to notify the City of any change to the gross power rating of the RGS by submitting a new application for interconnection specifying the modifications at least 30 days prior to making the modifications. The term "gross power rating" (GPR) means the total manufacturer's AC nameplate generating capacity of an on-site customer-owned renewable generation system that will be interconnected to and operate in parallel with the City distribution facilities. For inverter-based systems, the GPR shall be calculated by multiplying the total installed DC nameplate generating capacity by 0.85 in order to account for losses during the conversion from DC to AC. An Increase in GPR above the 10 kW limit

would necessitate entering into a new agreement at Tier 2 which may impose additional requirements on the Customer. In no case does the Tier 1 or Tier 2 interconnection agreement cover increases in GPR above 100 kilowatts (kW).

2. The RGS GPR must not exceed 90% of the City's distribution service rating at the Customer's location. If the GPR does exceed the 90% limit, the Customer shall be responsible to pay the cost of upgrades to the distribution facilities required to accommodate the GPR capacity and ensure the 90% threshold is not breached.

3. The Customer is not required to pay an application fee for the review and processing of the application.

4. The Customer shall fully comply with the City's Rules and Procedures for Electric Service as those documents may be amended or revised by the City from time to time.

5. The Customer certifies that its installation, its operation and its maintenance shall be in compliance with the following standards:

a. IEEE-1547 (2003) Standard for Interconnecting Distributed Resources with Electric Power System;

b. IEEE-1547.1 (2005) Standard Conformance Test Procedures for Equipment Interconnection Distributed Resources with Electric Power Systems;

c. UL-1741 (2005) Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources;

d. The National Electric Code, state and/or local building codes, mechanical codes and/or electrical codes;

e. The manufacturer's installation, operation and maintenance instructions.

6. The Customer is not precluded from contracting for the lease, operation or maintenance of the RGS with a third party. Such lease may not provide terms or conditions that provide for any payments under the agreement to any way indicate or reflect the purchase of energy produced by the RGS. Customer shall not enter into any lease agreement that results in the retail purchase of electricity; or the retail sale of electricity from the customer-owned renewable generation. Notwithstanding this restriction, in the event that Customer is determined to have engaged in the retail purchase of electricity from a party other than the City, then Customer shall be in breach of this Agreement and may be subject to the jurisdiction of the Florida Public Service Commission and to fines/penalties.

7. The Customer shall provide a copy of the manufacturer's installation, operation and maintenance instructions to the City. If the RGS is leased to the Customer by a third party, or if the operation or maintenance of the RGS is to be performed by a third party, the lease and/or maintenance agreements and any pertinent documents related to these agreements shall be provided to the City.

8. Prior to commencing parallel operation with the City's electric system, Customer shall have the RGS inspected and approved by the appropriate code authorities having jurisdiction. Customer shall provide a copy of this inspection and approval to the City's Electric Department.

9. The Customer agrees to permit the City, if it should so choose, to inspect the RGS and its component equipment and the documents necessary to ensure compliance with this Agreement both before and after the RGS goes into service and to witness the initial testing

of the RGS equipment and protective apparatus. The City will provide Customer with as much notice as reasonably possible, either in writing, email, facsimile or by phone as to when the City may conduct inspections and or document review. Upon reasonable notice, or at any time without notice in the event of an emergency or hazardous condition, Customer agrees to provide the City access to the Customer's premises for any purpose in connection with the performance of the obligations required by this Agreement or, if necessary, to meet the City's legal obligation to provide service to its customers. At least ten (10) business days prior to initially placing the customer-owned renewable generation system in service, Customer shall provide written notification to the City advising the City of the date and time at which Customer intends to place the system in service, and the City shall have the right to have personnel present on the in-service date in order to ensure compliance with the requirements of this Agreement.

10. Customer certifies that the RGS equipment includes a utility-interactive inverter or interconnection system equipment that ceases to interconnect with the City system upon a loss of the City power. The inverter shall be considered certified for interconnected operation if it has been submitted by a manufacturer to a nationally recognized testing laboratory (NRTL) to comply with UL 1741. The NRTL must be approved by the Occupational Safety & Health Administration (OSHA).

11. If Customer adds another RGS which (i) utilizes the same utility-interactive inverter for both systems; or (ii) utilizes a separate utility-interactive inverter for each system, then Customer shall provide the City with sixty (60) days advance written notice of the addition.

12. The Customer shall not energize the City system when the City's system is deenergized. The Customer shall cease to energize the City system during a faulted condition on the City system and/or upon any notice from the City that the deenergizing of Customer's RGS equipment is necessary. The Customer shall cease to energize the City system prior to automatic or non-automatic reclosing of the City's protective devices. There shall be no intentional islanding, as described in IEEE 1547, between the Customer's and the City's systems.

13. The Customer is solely responsible for the protection of its generation equipment, inverters, protection devices, and other system components from damage from the normal and abnormal operations that occur on the City's electric system in delivering and restoring system power. Customer agrees that any damage to any of its property, including, without limitation, all components and related accessories of its RGS system, due to the normal or abnormal operation of the City's electric system, is at Customer's sole risk and expense. Customer is also responsible for ensuring that the customer-owned renewable generation equipment is inspected, maintained, and tested regularly in accordance with the manufacturer's instructions to ensure that it is operating correctly and safely.

14. In the event the City elects to install a manual disconnect switch, it shall be at the City's expense. The City-installed manual disconnect switch will be of the visible load break type to provide a separation point between the AC power output of the customer-owned renewable generation system and any Customer wiring connected to the City's electric system, such that back feed from the customer-owned renewable generation system to the City's electric system cannot occur when the switch is in the open position. The manual disconnect switch shall be mounted separate from the meter socket on an exterior surface adjacent to the meter. The Customer shall insure that such disconnect switch shall be readily accessible to the City and capable of being locked in the open position with a City padlock. When locked and tagged in the open position by the City, this switch will be under the control of the City.

15. Subject to an approved inspection, including installation of acceptable manual disconnect switch (if installed), this Agreement shall be executed by the City within thirty

(30) calendar days of receipt of a completed application. Customer must execute this Agreement and return it to the City at least thirty (30) calendar days prior to beginning parallel operations with the City's electric system, and within one (1) year after the City executes this Agreement.

16. Once the City has received Customer's written documentation that the requirements of this Agreement have been met, all agreements and documentation have been received and the correct operation of the manual switch, if any, has been demonstrated to a City representative, the City will, within fifteen (15) business days, send written notice that parallel operation of the RGS may commence.

17. The City recommends the Customer maintain general liability insurance for personal injury and property damage in the amount of not less than one hundred thousand dollars (\$100,000.00) and name the City as an additional insured on Customer's general liability insurance policy.

18. The City will furnish, install, own and maintain metering equipment capable of measuring any excess kilowatt-hours (KWHs) of energy produced by Customer's renewable generation system and delivered to the City's electric grid. The value of such excess generation shall be reflected on Customer's bill in accordance with the City's applicable net metering tariff for customer-owned renewable generation. Customer agrees to provide safe and reasonable access to the premises for installation, maintenance and reading of the metering and related equipment. The Customer shall not be responsible for the cost of the installation and maintenance of the metering equipment necessary to measure the energy delivered by the Customer to the City. Additionally, the City, at its own expense may elect to install, own, and maintain metering equipment that measures directly the output of energy produced by the Customer's renewable generation system.

19. The Customer shall be solely responsible for all legal and financial obligations arising from the design, construction, installation, operation, maintenance and ownership of the RGS.

20. The Customer must obtain all permits, inspections and approvals required by the City of Winter Park with respect to the generating system and must use a licensed, bonded and insured contractor to design and install the generating system. The Customer agrees to provide the City's Electric Department with a copy of the building Department's inspection and certification of installation. The certification shall reflect that the local code official has inspected and certified that the installation was permitted, has been approved, and has met all electrical and mechanical qualifications.

21. In no event shall any statement, representation, or lack thereof, either express or implied, by the City, relieve the Customer of exclusive responsibility for the Customer's system. Specifically, any City inspection of the RGS shall not be construed as confirming or endorsing the system design or its operating or maintenance procedures nor as a warranty or guarantee as to the safety, reliability, or durability of the RGS. The City's inspection, acceptance, or its failure to inspect shall not be deemed an endorsement of any RGS equipment or procedure. Further, as set forth in Sections 13, 17, 19, 22 and 24 of this Agreement, Customer shall remain solely responsible for any and all losses, claims, damages and/or expenses related in any way to the operation or mis-operation of its RGS equipment.

22. Notwithstanding any other provision of this Interconnection Agreement, the City, at its sole and absolute discretion, may isolate the Customer's system from the distribution grid by whatever means necessary, without prior notice to the Customer. To the extent practical, however, prior notice shall be given. The system will be reconnected as soon as practical once the conditions causing the disconnection cease to exist. The City shall have no

obligation to compensate the Customer for any loss of energy during any and all periods when Customer's RGS is operating at reduced capacity or is disconnected from the City's electrical distribution system pursuant to this Interconnection Agreement. Typical conditions which may require the disconnection of the Customer's system include, but are not limited to, the following:

- a. The City's electrical distribution system emergencies, forced outages, uncontrollable forces or compliance with prudent electric utility practice.
- b. When necessary to investigate, inspect, construct, install, maintain, repair, replace or remove any City equipment, any part of the City's electrical distribution system or Customer's generating system.
- c. Hazardous conditions existing on the City's utility system due to the operation of the Customer's generation or protective equipment as determined by the City.
- d. Adverse electrical effects (such as power quality problems) on the electrical equipment of the City's other electric consumers caused by the Customer's generation as determined by the City.
- e. When Customer is in breach of any of its obligations under this Interconnection Agreement or any other applicable policies and procedures of the City.
- f. When the Customer fails to make any payments due to the City by the due date.

23. Upon termination of services pursuant to this Agreement, the City shall open and padlock the manual disconnect switch (if installed) and remove any additional metering equipment related to this Agreement. At the Customer's expense, within thirty (30) working days following the termination, the Customer shall permanently isolate the RGS and any associated equipment from the City's electric supply system, notify the City that the isolation is complete, and coordinate with the City for return of the City's lock (if manual disconnect switch is installed).

24. To the fullest extent permitted by law, and in return for adequate, separate consideration, Customer shall indemnify, defend and hold harmless the City, any and all of their members of its governing bodies, and its officers, agents, and employees for, from and against any and all claims, demands, suits, costs of defense, attorneys' fees, witness fees of any type, losses, damages, expenses, and liabilities, whether direct, indirect or consequential, related to, arising from, or in any way connected with:

- a. Customer's design, construction, installation, inspection, maintenance, testing or operation of Customer's generating system or equipment used in connection with this Interconnection Agreement, irrespective of any fault on the part of the City.
- b. The interconnection of Customer's generating system with, and delivery of energy from the generating system to, the City's electrical distribution system, irrespective of any fault on the part of the City.
- c. The performance or nonperformance of Customer's obligations under this Interconnection Agreement or the obligations of any and all of the members of Customer's governing bodies and its officers, agents, contractors (and any subcontractor or material supplier thereof) and employees.

Customer's obligations under this Section shall survive the termination of this Interconnection Agreement.

25. Customer shall not have the right to assign its benefits or obligations under this Agreement without the City's prior written consent and such consent shall not be unreasonably withheld. If there is a change in ownership of the RGS, Customer shall provide written notice to the City at least thirty (30) days prior to the change in ownership. The new owner will be required to assume, in writing, the Customer's rights and duties under this Agreement, or execute a new Standard Interconnection Agreement. The new owner shall not be permitted to net meter or begin parallel operations until the new owner assumes this Agreement or executes a new Agreement.

26. This Agreement supersedes all previous agreements and representations either written or verbal heretofore made between the City and Customer with respect to matters herein contained. This Agreement, when duly executed, constitutes the only Agreement between parties hereto relative to the matters herein described. This Agreement shall continue in effect from year to year until either party gives sixty (60) days notice of its intent to terminate this Agreement.

27. This Agreement shall be governed by and construed and enforced in accordance with the laws, rules and regulations of the State of Florida and the City of Winter Park Electric Department's tariff filed with the Florida Public Service Commission, as it may be modified, changed, or amended from time to time, including any amendments modification or changes to the City's Net Metering Service Rate schedule, the schedule applicable to this Agreement. The Customer and the City agree that any action, suit, or proceeding arising out of or relating to this Interconnection Agreement shall be initiated and prosecuted in the state court of competent jurisdiction located in Orange County, Florida, and the City and the Customer irrevocably submit to the jurisdiction and venue of such court. To the fullest extent permitted by law, each Party hereby irrevocably waives any and all rights to a trial by jury and covenants and agrees that it will not request a trial by jury with respect to any legal proceeding arising out of or relating to this Interconnection Agreement.

None of the provisions of this Interconnection Agreement shall be considered waived by either Party except when such waiver is given in writing. No waiver by either Party of any one or more defaults in the performance of the provisions of this Interconnection Agreement shall operate or be construed as a waiver of any other existing or future default or defaults. If any one or more of the provisions of this Interconnection Agreement or the applicability of any provision to a specific situation is held invalid or unenforceable, the provision shall be modified to the minimum extent necessary to make it or its application valid and enforceable, and the validity and enforceability of all other provisions of this Interconnection Agreement and all other applications of such provisions shall not be affected by any such invalidity or unenforceability. This Interconnection Agreement does not govern the terms and conditions for the delivery of power and energy to non-generating retail customers of the City's electrical distribution system.

28. This Agreement incorporates by reference the terms of the tariff filed with the Florida Public Service Commission by the City, including the City's Net Metering Service Rate Schedule, and associated technical terms and abbreviations, general rules and regulations and standard electric service requirements (as may be applicable) are incorporated by reference, as amended from time to time. To the extent of any conflict between this Agreement and such tariff, the tariff shall control.

29. The City and Customer recognize that the Florida Statutes and/or the Florida Public Service Commission Rules, including those directly addressing the subject of this Agreement, may be amended from time to time. In the event that such statutes and/or rules are amended that affect the terms and conditions of this Agreement, the City and Customer agree to supersede and replace this Agreement with a new Interconnection Agreement which complies with the amended statutes/rules.

30. Customer acknowledges that its provision of electricity to the City hereunder is on a first-offered first-accepted basis and is subject to diminution and/or rejection in the event the total amount of electricity delivered to the City pursuant to the City's Net Metering Service Rate Schedule, (as filed with the Florida Public Service Commission), from all participating City customers, exceeds 2,560 KW of customer generated renewable energy.

31. This Agreement is solely for the benefit of the City and Customer and no right nor any cause of action shall accrue upon or by reason, to or for the benefit of any third party not a formal party to this Agreement. Nothing in this Agreement, expressed or implied, is intended or shall be construed to confer upon any person or corporation other than the City or Customer, any right, remedy, or claim under or by reason of this Agreement or any of the provisions or conditions of this Agreement; and, all provisions, representations, covenants, and conditions contained in this Agreement shall inure to the sole benefit of and be binding upon the City and Customer and their respective representatives, successors, and assigns. Further, no term or condition contained in this Agreement shall be construed in any way as a waiver by the City of the sovereign immunity applicable to the City as established by Florida Statutes, 768.28.

32. Renewable Energy Credits. Customer shall retain the rights to any renewable energy credits produced by the customer-owned renewable generation; and any additional meters necessary for measuring the total renewable energy generated by the customer owned renewable generation for the purpose of receiving renewable energy credits shall be installed at Customer's expense, unless otherwise determined during negotiations for the sale of Customer's renewable energy credits to City.

IN WITNESS WHEREOF, Customer and the City have executed this Agreement the day and year first above written.

City:

Customer:

By: _____

By: _____

(Print Name)

Title: _____

Date: _____

(Signature)

Date: _____

City Account Number:

CITY OF Winter Park APPLICATION FOR INTERCONNECTION OF
CUSTOMER-OWNED RENEWABLE GENERATION SYSTEMS

Circle One:

TIER 1 - 10 kW or Less

TIER 2 - Greater than 10 kW and Less Than or Equal to 100 kW

City of Winter Park customers who install customer-owned renewable generation systems (RGS) and desire to interconnect those facilities and operate in parallel with City of Winter Park's electrical system are required to complete this application. When the completed application and fees are returned to the City of Winter Park, the process of completing the appropriate Interconnection Agreement can begin. This application and copies of the Interconnection Agreements may be obtained in person at 401 Park Avenue South Winter Park, FL 32789.

1. Customer Information:

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone Number: _____ Alternate Phone Number: _____

Email Address: _____ Fax Number: _____

Customer Account Number: _____

2. RGS Facility Information:

Facility Location:

RGS Manufacturer:

Manufacturer's Address:

Reference or Model Number:

Serial Number: _____

3. Facility Rating Information:

Gross Power Rating: _____ (“Gross power rating” means the total manufacturer’s AC nameplate generating capacity of an on-site customer-owned renewable generation system that will be interconnected to and operate in parallel with the utility’s distribution facilities. For inverter-based systems, the AC nameplate generating capacity shall be calculated by multiplying the total installed DC nameplate generating capacity by 0.85 in order to account for losses during the conversion from DC to AC.)

Fuel or Energy Source: _____

Anticipated In-Service Date: _____

4. Application Fee:

There is no application fee for Tier 1 installations. The non-refundable application fee is \$240 for Tier 2 installations and must be submitted with this application.

5. Required Documentation:

Prior to completion of the Interconnection Agreement, the following information must be provided to the City of Winter Park by the Customer:

A. Documentation demonstrating that the installation complies with:

1. IEEE 1547 (2003) Standard for Interconnecting Distributed Resources with Electric Power Systems.
2. IEEE 1547.1 (2005) Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems.
3. UL 1741 (2005) Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources.
4. National Electrical Safety Code, National Electric Code 2008 or latest version, Florida Building Code, and local codes and regulations.

B. Documentation that the customer-owned renewable generation has been inspected and approved by local code officials and utility officials prior to its operation in parallel with the City of Winter Park’s electric system to ensure compliance with applicable local codes and utility regulations.

C. Proof of general liability insurance in the amount of shown below naming the City of Winter Park as an additional insured:

Tier 1 – Not required (recommended amount is \$100,000).
Tier 2 - \$1,000,000.00

Customer

By: _____ Date: _____

(Print Name)

(Signature)

ATTACHMENT – 3

NET METERING – TIER 2

STANDARD INTERCONNECTION AGREEMENT

Tier 2

Standard Interconnection Agreement

Customer-Owned Renewable Generation System

This Agreement is made and entered into this ____ day of _____, 20____ by and between _____, (hereinafter called "Customer"), located at _____ in _____, Florida, and the City of Winter Park, Florida (hereafter called the "City"), a Florida municipal corporation. Customer and the City shall collectively be called the "Parties". The physical location/premise where the interconnection is taking place:

_____.

WITNESSETH

WHEREAS, a Tier 2 customer-owned renewable generation system (RGS) is an electric generating system located at customer's premises that uses one or of more of the following fuels or energy sources: hydrogen, biomass, solar energy, geothermal energy, wind energy, ocean energy, waste heat, or hydroelectric power as defined in Section 377.803, Florida Statutes, rated at more than 10 kilowatts (10 kW) but not greater than 100 kilowatts (100 kW) alternating current (AC) power output and is primarily intended to offset part or all of the customer's current electric requirements; and

Whereas, the City operates an electric utility serving customers within the City limits; and

WHEREAS, Customer has made a written application to the City, a copy being attached hereto, to interconnect its RGS with the City's electrical supply grid at the location identified above; and

WHEREAS, in order to promote the development of small customer-owned renewable generation, the City offers net metering service by which customers may interconnect their customer-owned renewable generation system with the City's electric system and to allow the City's customers to offset their electric consumption with customer-owned renewable generation, and agrees to credit Customer for excess customer-owned generation; and

WHEREAS, the City desires to provide interconnection of customer-owned renewable generation systems under conditions which will insure the safety of the City's customers and employees, and the reliability and integrity of its distribution system;

NOW, THEREFORE, for and in consideration of the mutual covenants and agreements herein set forth, the parties hereto covenant and agree as follows:

1. This agreement is strictly limited to cover a Tier 2 RGS as defined above. It is the Customer's responsibility to notify the City of any change to the gross power rating of the RGS by submitting a new application for interconnection specifying the modifications at least 30 days prior to making the modifications. The term "gross power rating" (GPR) means the total manufacturer's AC nameplate generating capacity of an on-site customer-owned renewable generation system that will be interconnected to and operate in parallel with the City distribution facilities. For inverter-based systems, the GPR shall be calculated by multiplying the total installed DC nameplate generating capacity by 0.85 in order to account for losses during the conversion from DC to AC. In no case does the Tier 2 interconnection

agreement cover increases in GPR above 100 kilowatts (kW).

2. The RGS GPR must not exceed 90% of the City's distribution service rating at the Customer's location. If the GPR does exceed the 90% limit, the Customer shall be responsible to pay the cost of upgrades to the distribution facilities required to accommodate the GPR capacity and ensure the 90% threshold is not breached.

3. The Customer shall be required to pay a non-refundable application fee as noted in the Net Metering Rate Schedule for the review and processing of the application.

4. The Customer shall fully comply with the City's Rules and Procedures for Electric Service as those documents may be amended or revised by the City from time to time.

5. The Customer certifies that its installation, its operation and its maintenance shall be in compliance with the following standards:

a. IEEE-1547 (2003) Standard for Interconnecting Distributed Resources with Electric Power System;

b. IEEE-1547.1 (2005) Standard Conformance Test Procedures for Equipment Interconnection Distributed Resources with Electric Power Systems;

c. UL-1741 (2005) Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources;

d. The National Electric Code, state and/or local building codes, mechanical codes and/or electrical codes;

e. The manufacturer's installation, operation and maintenance instructions.

6. The Customer is not precluded from contracting for the lease, operation or maintenance of the RGS with a third party. Such lease may not provide terms or conditions that provide for any payments under the agreement to any way indicate or reflect the purchase of energy produced by the RGS. Customer shall not enter into any lease agreement that results in the retail purchase of electricity; or the retail sale of electricity from the customer-owned renewable generation. Notwithstanding this restriction, in the event that Customer is determined to have engaged in the retail purchase of electricity from a party other than the City, then Customer shall be in breach of this Agreement and may be subject to the jurisdiction of the Florida Public Service Commission and to fines/penalties.

7. The Customer shall provide a copy of the manufacturer's installation, operation and maintenance instructions to the City. If the RGS is leased to the Customer by a third party, or if the operation or maintenance of the RGS is to be performed by a third party, the lease and/or maintenance agreements and any pertinent documents related to these agreements shall be provided to the City.

8. Prior to commencing parallel operation with the City's electric system, Customer shall have the RGS inspected and approved by the appropriate code authorities having jurisdiction. Customer shall provide a copy of this inspection and approval to the City's Electric Department.

9. The Customer agrees to permit the City, if it should so choose, to inspect the RGS and its component equipment and the documents necessary to ensure compliance with this Agreement both before and after the RGS goes into service and to witness the initial testing

of the RGS equipment and protective apparatus. The City will provide Customer with as much notice as reasonably possible, either in writing, email, facsimile or by phone as to when the City may conduct inspections and or document review. Upon reasonable notice, or at any time without notice in the event of an emergency or hazardous condition, Customer agrees to provide the City access to the Customer's premises for any purpose in connection with the performance of the obligations required by this Agreement or, if necessary, to meet the City's legal obligation to provide service to its customers. At least ten (10) business days prior to initially placing the customer-owned renewable generation system in service, Customer shall provide written notification to the City advising the City of the date and time at which Customer intends to place the system in service, and the City shall have the right to have personnel present on the in-service date in order to ensure compliance with the requirements of this Agreement.

10. Customer certifies that the RGS equipment includes a utility-interactive inverter or interconnection system equipment that ceases to interconnect with the City system upon a loss of the City power. The inverter shall be considered certified for interconnected operation if it has been submitted by a manufacturer to a nationally recognized testing laboratory (NRTL) to comply with UL 1741. The NRTL must be approved by the Occupational Safety & Health Administration (OSHA).

11. If Customer adds another RGS which (i) utilizes the same utility-interactive inverter for both systems; or (ii) utilizes a separate utility-interactive inverter for each system, then Customer shall provide the City with sixty (60) days advance written notice of the addition.

12. The Customer shall not energize the City system when the City's system is deenergized. The Customer shall cease to energize the City system during a faulted condition on the City system and/or upon any notice from the City that the deenergizing of Customer's RGS equipment is necessary. The Customer shall cease to energize the City system prior to automatic or non-automatic reclosing of the City's protective devices. There shall be no intentional islanding, as described in IEEE 1547, between the Customer's and the City's systems.

13. The Customer is solely responsible for the protection of its generation equipment, inverters, protection devices, and other system components from damage from the normal and abnormal operations that occur on the City's electric system in delivering and restoring system power. Customer agrees that any damage to any of its property, including, without limitation, all components and related accessories of its RGS system, due to the normal or abnormal operation of the City's electric system, is at Customer's sole risk and expense. Customer is also responsible for ensuring that the customer-owned renewable generation equipment is inspected, maintained, and tested regularly in accordance with the manufacturer's instructions to ensure that it is operating correctly and safely.

14. The Customer must install, at Customer's expense, a manual disconnect switch of the visible load break type to provide a separation point between the AC power output of the customer-owned renewable generation system and any Customer wiring connected to the City's electric system, such that back feed from the customer-owned renewable generation system to the City's electric system cannot occur when the switch is in the open position. The manual disconnect switch shall be mounted separate from the meter socket on an exterior surface adjacent to the meter. The switch shall be readily accessible to the City and capable of being locked in the open position with a City padlock. When locked and tagged in the open position by the City, this switch will be under the control of the City.

15. Subject to an approved inspection, including installation of acceptable manual disconnect switch, this Agreement shall be executed by the City within thirty (30) calendar

days of receipt of a completed application. Customer must execute this Agreement and return it to the City at least thirty (30) calendar days prior to beginning parallel operations with the City's electric system, and within one (1) year after the City executes this Agreement.

16. Once the City has received Customer's written documentation that the requirements of this Agreement have been met, all agreements and documentation have been received and the correct operation of the manual switch has been demonstrated to a City representative, the City will, within fifteen (15) business days, send written notice that parallel operation of the RGS may commence.

17. Customer shall maintain general liability insurance for personal injury and property damage in the amount of not less than one million dollars (\$1,000,000.00). Customer shall name the City as an additional insured on Customer's general liability insurance policy.

18. The City will furnish, install, own and maintain metering equipment capable of measuring any excess kilowatt-hours (KWHs) of energy produced by Customer's renewable generation system and delivered to the City's electric grid. The value of such excess generation shall be reflected on Customer's bill in accordance with the City's applicable net metering tariff for customer-owned renewable generation. Customer agrees to provide safe and reasonable access to the premises for installation, maintenance and reading of the metering and related equipment. The Customer shall not be responsible for the cost of the installation and maintenance of the metering equipment necessary to measure the energy delivered by the Customer to the City. Additionally, the City, at its own expense may elect to install, own, and maintain metering equipment that measures directly the output of energy produced by the Customer's renewable generation system.

19. The Customer shall be solely responsible for all legal and financial obligations arising from the design, construction, installation, operation, maintenance and ownership of the RGS.

20. The Customer must obtain all permits, inspections and approvals required by the City of Winter Park with respect to the generating system and must use a licensed, bonded and insured contractor to design and install the generating system. The Customer agrees to provide the City's Electric Department with a copy of the Building Department's inspection and certification of installation. The certification shall reflect that the local code official has inspected and certified that the installation was permitted, has been approved, and has met all electrical and mechanical qualifications.

21. In no event shall any statement, representation, or lack thereof, either express or implied, by the City, relieve the Customer of exclusive responsibility for the Customer's system. Specifically, any City inspection of the RGS shall not be construed as confirming or endorsing the system design or its operating or maintenance procedures nor as a warranty or guarantee as to the safety, reliability, or durability of the RGS. The City's inspection, acceptance, or its failure to inspect shall not be deemed an endorsement of any RGS equipment or procedure. Further, as set forth in Sections 13, 17, 19, 22 and 24 of this Agreement, Customer shall remain solely responsible for any and all losses, claims, damages and/or expenses related in any way to the operation or misoperation of its RGS equipment.

22. Notwithstanding any other provision of this Interconnection Agreement, the City, at its sole and absolute discretion, may isolate the Customer's system from the distribution grid by whatever means necessary, without prior notice to the Customer. To the extent practical, however, prior notice shall be given. The system will be reconnected as soon as practical once the conditions causing the disconnection cease to exist. The City shall have no

obligation to compensate the Customer for any loss of energy during any and all periods when Customer's RGS is operating at reduced capacity or is disconnected from the City's electrical distribution system pursuant to this Interconnection Agreement. Typical conditions which may require the disconnection of the Customer's system include, but are not limited to, the following:

- a. The City electrical distribution system emergencies, forced outages, uncontrollable forces or compliance with prudent electric utility practice.
- b. When necessary to investigate, inspect, construct, install, maintain, repair, replace or remove any City equipment, any part of the City's electrical distribution system or Customer's generating system.
- c. Hazardous conditions existing on the City's utility system due to the operation of the Customer's generation or protective equipment as determined by the City.
- d. Adverse electrical effects (such as power quality problems) on the electrical equipment of the City's other electric consumers caused by the Customer's generation as determined by the City.
- e. When Customer is in breach of any of its obligations under this Interconnection Agreement or any other applicable policies and procedures of the City.
- f. When the Customer fails to make any payments due to the City by the due date thereof.

23. Upon termination of services pursuant to this Agreement, the City shall open and padlock the manual disconnect switch and remove any additional metering equipment related to this Agreement. At the Customer's expense, within thirty (30) working days following the termination, the Customer shall permanently isolate the RGS and any associated equipment from the City's electric supply system, notify the City that the isolation is complete, and coordinate with the City for return of the City's lock.

24. To the fullest extent permitted by law, and in return for adequate, separate consideration, Customer shall indemnify, defend and hold harmless the City, any and all of their members of its governing bodies, and its officers, agents, and employees for, from and against any and all claims, demands, suits, costs of defense, attorneys' fees, witness fees of any type, losses, damages, expenses, and liabilities, whether direct, indirect or consequential, related to, arising from, or in any way connected with:

- a. Customer's design, construction, installation, inspection, maintenance, testing or operation of Customer's generating system or equipment used in connection with this Interconnection Agreement, irrespective of any fault on the part of the City.
- b. The interconnection of Customer's generating system with, and delivery of energy from the generating system to, the City's electrical distribution system, irrespective of any fault on the part of the City.
- c. The performance or nonperformance of Customer's obligations under this Interconnection Agreement or the obligations of any and all of the members of Customer's governing bodies and its officers, agents, contractors (and any subcontractor or material supplier thereof) and employees.

Customer's obligations under this Section shall survive the termination of this Interconnection Agreement.

25. Customer shall not have the right to assign its benefits or obligations under this Agreement without the City's prior written consent and such consent shall not be unreasonably withheld. If there is a change in ownership of the RGS, Customer shall provide written notice to the City at least thirty (30) days prior to the change in ownership. The new owner will be required to assume, in writing, the Customer's rights and duties under this Agreement, or execute a new Standard Interconnection Agreement. The new owner shall not be permitted to net meter or begin parallel operations until the new owner assumes this Agreement or executes a new Agreement.

26. This Agreement supersedes all previous agreements and representations either written or verbal heretofore made between the City and Customer with respect to matters herein contained. This Agreement, when duly executed, constitutes the only Agreement between parties hereto relative to the matters herein described. This Agreement shall continue in effect from year to year until either party gives sixty (60) days notice of its intent to terminate this Agreement.

27. This Agreement shall be governed by and construed and enforced in accordance with the laws, rules and regulations of the State of Florida and the City of Winter Park Electric Department's tariff filed with the Florida Public Service Commission, as it may be modified, changed, or amended from time to time, including any amendments/modification or changes to the City's Net Metering Service Rate Schedule, the schedule applicable to this Agreement. The Customer and the City agree that any action, suit, or proceeding arising out of or relating to this Interconnection Agreement shall be initiated and prosecuted in the state court of competent jurisdiction located in Orange County, Florida, and the City and the Customer irrevocably submit to the jurisdiction and venue of such court. To the fullest extent permitted by law, each Party hereby irrevocably waives any and all rights to a trial by jury and covenants and agrees that it will not request a trial by jury with respect to any legal proceeding arising out of or relating to this Interconnection Agreement.

None of the provisions of this Interconnection Agreement shall be considered waived by either Party except when such waiver is given in writing. No waiver by either Party of any one or more defaults in the performance of the provisions of this interconnection Agreement shall operate or be construed as a waiver of any other existing or future default or defaults. If any one or more of the provisions of this Interconnection Agreement or the applicability of any provision to a specific situation is held invalid or unenforceable, the provision shall be modified to the minimum extent necessary to make it or its application valid and enforceable, and the validity and enforceability of all other provisions of this Interconnection Agreement and all other applications of such provisions shall not be affected by any such invalidity or unenforceability. This Interconnection Agreement does not govern the terms and conditions for the delivery of power and energy to non-generating retail customers of the City's electrical distribution system.

28. This Agreement incorporates by reference the terms of the tariff filed with the Florida Public Service Commission by the City, including the City's Net Metering Service Rate Schedule, and associated technical terms and abbreviations, general rules and regulations and standard electric service requirements (as may be applicable) are incorporated by reference, as amended from time to time. To the extent of any conflict between this Agreement and such tariff, the tariff shall control.

29. The City and Customer recognize that the Florida Statutes and/or the Florida Public Service Commission Rules, including those directly addressing the subject of this Agreement, may be amended from time to time. In the event that such statutes and/or rules are amended that affect the terms and conditions of this Agreement, the City and Customer agree to supersede and replace this Agreement with a new Interconnection Agreement which complies with the amended statutes/rules.

30. Customer acknowledges that its provision of electricity to the City hereunder is on a first-offered first-accepted basis and subject to diminution and/or rejection in the event the total amount of electricity delivered to the City pursuant to the City's Net Metering Service Rate Schedule, (as filed with the Florida Public Service Commission), from all participating City customers, exceeds 2,560 KW of customer generated renewable energy.

31. This Agreement is solely for the benefit of the City and Customer and no right or any cause of action shall accrue upon or by reason, to or for the benefit of any third party not a formal party to this Agreement. Nothing in this Agreement, expressed or implied, is intended or shall be construed to confer upon any person or corporation other than the City or Customer, any right, remedy, or claim under or by reason of this Agreement or any of the provisions or conditions of this Agreement; and, all provisions, representations, covenants, and conditions contained in this Agreement shall inure to the sole benefit of and be binding upon the City and Customer and their respective representatives, successors, and assigns. Further, no term or condition contained in this Agreement shall be construed in any way as a waiver by the City of the sovereign immunity applicable to the City as established by Florida Statutes, 768.28.

32. Renewable Energy Credits. Customer shall retain the rights to any renewable energy credits produced by the customer-owned renewable generation; and any additional meters necessary for measuring the total renewable energy generated by the customer owned renewable generation for the purpose of receiving renewable energy credits shall be installed at Customer's expense, unless otherwise determined during negotiations for the sale of Customer's renewable energy credits to City.

IN WITNESS WHEREOF, Customer and the City have executed this Agreement the day and year first above written.

City:

Customer:

By: _____

By: _____

(Print Name)

Title: _____

Date: _____

(Signature)

Date: _____

City Account Number:

CITY OF Winter Park APPLICATION FOR INTERCONNECTION OF
CUSTOMER-OWNED RENEWABLE GENERATION SYSTEMS

Circle One:

TIER 1 - 10 kW or Less

TIER 2 - Greater than 10 kW and Less Than or Equal to 100 kW

City of Winter Park customers who install customer-owned renewable generation systems (RGS) and desire to interconnect those facilities and operate in parallel with City of Winter Park's electrical system are required to complete this application. When the completed application and fees are returned to the City of Winter Park, the process of completing the appropriate Interconnection Agreement can begin. This application and copies of the Interconnection Agreements may be obtained in person at 401 Park Avenue South Winter Park, FL 32789.

1. Customer Information:

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone Number: _____ Alternate Phone Number: _____

Email Address: _____ Fax Number: _____

Customer Account Number: _____

2. RGS Facility Information:

Facility Location:

RGS Manufacturer:

Manufacturer's Address:

Reference or Model Number:

Serial Number: _____

3. Facility Rating Information:

Gross Power Rating: _____ (“Gross power rating” means the total manufacturer’s AC nameplate generating capacity of an on-site customer-owned renewable generation system that will be interconnected to and operate in parallel with the utility’s distribution facilities. For inverter-based systems, the AC nameplate generating capacity shall be calculated by multiplying the total installed DC nameplate generating capacity by 0.85 in order to account for losses during the conversion from DC to AC.)

Fuel or Energy Source: _____

Anticipated In-Service Date: _____

4. Application Fee:

There is no application fee for Tier 1 installations. The non-refundable application fee is \$240 for Tier 2 installations and must be submitted with this application.

5. Required Documentation:

Prior to completion of the Interconnection Agreement, the following information must be provided to the City of Winter Park by the Customer:

A. Documentation demonstrating that the installation complies with:

1. IEEE 1547 (2003) Standard for Interconnecting Distributed Resources with Electric Power Systems.
2. IEEE 1547.1 (2005) Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems.
3. UL 1741 (2005) Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources.
4. National Electrical Safety Code, National Electric Code 2008 or latest version, Florida Building Code, and local codes and regulations.

B. Documentation that the customer-owned renewable generation has been inspected and approved by local code officials and utility officials prior to its operation in parallel with the City of Winter Park’s electric system to ensure compliance with applicable local codes and utility regulations.

C. Proof of general liability insurance in the amount of shown below naming the City of Winter Park as an additional insured:

Tier 1 – Not required (recommended amount is \$100,000).
Tier 2 - \$1,000,000.00

Customer

By: _____ Date: _____

(Print Name)

(Signature)



Utilities Advisory Board

agenda item 8.a

item type

Upcoming Agenda Items

meeting date

October 22, 2024

prepared by**approved by****subject**

Decorative Lighting - Mourad Belfakih - Maybe December

motion | recommendation**background****alternatives | other considerations****fiscal impact****attachments**

None