April 1, 2024

Adam Teitzman
Florida Public Service Commission
Office of Commission Clerk
2540 Shumard Oak Blvd
Tallahassee, Florida 32399-0850

Subject: 2024 Orlando Utilities Commission Ten-Year Site Plan

Dear Mr. Teitzman,

Enclosed please find an electronic copy of the 2024 Orlando Utilities Commission (OUC) Ten-Year Site Plan (TYSP). The 2024 OUC TYSP was prepared by nFront Consulting LLC (nFront) and is being submitted by nFront on behalf of OUC.

If you have any questions about this TYSP, please do not hesitate to contact me.

Respectfully submitted,

/s/ 

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Orlando Utilities Commission

2024 Ten-Year Site Plan

Prepared by:
nFront Consulting LLC
April 2024

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1.0 EXECUTIVE SUMMARY

This report documents the 2024 Orlando Utilities Commission ("OUC") Ten-Year Site Plan pursuant to Section 186.801 Florida Statutes and Section 25-22.070 of Florida Administrative Code. OUC's Ten-Year Site Plan provides information required by this rule and consists of the following additional sections:

- Utility System Description (Section 2.0)
- Strategic Issues (Section 3.0)
- Forecast of Peak Demand and Energy Consumption (Section 4.0)
- Demand-Side Management (Section 5.0)
- Forecast of Facilities Requirements (Section 6.0)
- Supply-Side Alternatives (Section 7.0)
- Economic Evaluation Criteria and Methodology (Section 8.0)
- Analysis and Results (Section 9.0)
- Environmental and Land Use Information (Section 10.0)
- Conclusions (Section 11.0)
- Ten-Year Site Plan Schedules (Section 12.0)

In December 2020 OUC finalized an Electric Integrated Resource Plan ("EIRP"), which provides a roadmap to enable OUC to achieve its goal of Net Zero Carbon by 2050, as well as interim goals of 50% carbon emissions reductions by 2030 and 75% carbon emissions reductions by 2040 as compared to 2005 levels. The first major steps outlined to achieve these carbon reduction targets were to convert one coal fired generating unit (Stanton Energy Center Unit 1) to cleaner-burning natural gas no later than 2025, convert the other coal unit (Stanton Energy Center Unit 2) to cleaner-burning natural gas no later than 2027, and install 1,524 MWac of solar and 350 MW of energy storage by 2030.

In September 2021, OUC purchased the Osceola Generating Station ("OGS"), which better enables large-scale solar farms by mitigating the intermittency of solar power, the utility's most viable source of renewable energy. The purchase of OGS also allows OUC to place its oldest coal-fired power plant, Stanton Unit 1 located in East Orange County at the utility's Stanton Energy Center ("SEC"), in cold shutdown no later than 2025 in lieu of converting this unit to cleaner burning natural gas. The OGS purchase further provides OUC an extra layer of resiliency with emergency backup fuel to help prevent power disruption events as seen in Texas in early 2022 and elsewhere in the United States since then.

The purchase of OGS from Genova, a Texas-based private ownership group, will not change OUC's commitment in its Electric Integrated Resource Plan (EIRP) to move away from all coal-fired generation.

OGS is comprised of three separate turbines, known in the industry as "peakers," which can turn on and off quickly as opposed to the larger, Stanton Unit 1 turbine that requires more fuel and takes many hours to turn on. OGS can power up in just minutes. The acquisition of OGS and the retirement of Stanton Unit 1 changes OUC's generation portfolio, making it more flexible in managing intermittent resources, and most importantly, as OUC's primary goal, reducing CO_2 emissions.

OUC remains committed to meeting the EIRP's objectives, which include increasing solar energy and other renewable resources for electric generation, and reducing carbon dioxide emissions by 50% by 2030 and 75% in 2040 as compared to 2005 levels before reaching Net Zero emissions by 2050.

OUC is aggressively increasing its reliance on solar energy, with plans to boost capacity to more than 270 MW by 2025. Meanwhile, OUC is exploring energy storage solutions and the use of other clean energy assets in addition to investing in electrification programs that would result in further carbon dioxide reductions and cleaner air for our community.

OUC continues to assume responsibility for supplying all of the City of St. Cloud ("St. Cloud") loads through calendar year 2042. Load forecasts for OUC and St. Cloud have been integrated into one forecast, and details of the aggregated load forecast are provided in Section 4.0, including base-case growth, high-growth, and low-growth scenarios.

OUC has contracts to provide power to the City of Lake Worth Beach ("Lake Worth") through calendar year 2025, the City of Winter Park ("Winter Park") through calendar year 2026, the City of Mount Dora ("Mt. Dora") through 2030, the City of Chattahoochee ("Chattahoochee") through 2027, and Lakeland Electric ("Lakeland") through 2024. The power OUC is currently planning to provide to Lake Worth, Winter Park, Mt. Dora, Chattahoochee, and Lakeland is summarized in Section 2.0.

OUC is a member of the Florida Municipal Power Pool (FMPP), which consists of OUC, Lakeland, and the Florida Municipal Power Agency ("FMPA") All-Requirements Project. Power for OUC is supplied by units owned entirely by OUC, as well as units in which OUC maintains joint ownership and power purchases. OUC's available capacity as of January 1, 2024, including capacity from units owned by OUC, St. Cloud's entitlement to Stanton Energy Center Unit 2, and OUC's current power purchases (including natural gas, landfill gas, and solar resources), provides total net summer capacity of approximately 1,976 megawatts (MW) and total net winter capacity of approximately 1,958 MW[1].

As discussed throughout this Ten-Year Site Plan, consideration of OUC's current generating resources (including existing and planned power purchase agreements) and OUC's current base-case load forecast indicate that OUC is projected to have adequate capacity to satisfy forecast reserve margin requirements through 2033.

[1] Net seasonal capacity ratings as of January 1, 2024. Includes capacity owned by OUC and St. Cloud, as well as OUC's contractual power purchases. Capacity from the Osceola Generating Station units 1 and 3 is not included as the units are currently not able to provide power to OUC.

2.0 UTILITY SYSTEM DESCRIPTION

At the turn of the 20th century, John M. Cheney, an Orlando, Florida judge, organized the Orlando Water and Light Company and supplied electricity on a part-time basis with a 100-kilowatt (kW) generator. Twenty-four-hour service began in 1903. The population of the City of Orlando (City) had grown to roughly 10,000 by 1922, and Cheney, realizing the need for wider services than his company was capable of supplying, urged his friends to work and vote for a $975,000 bond issue to enable the citizens of Orlando to purchase and municipally operate his privately-owned utility. The bond issue passed by a margin of almost three to one, as did a subsequent issue for additional improvements. The citizens of Orlando acquired Cheney's company and its 2,795 electricity and 5,000 water customers for a total initial investment of $1.5 million.

In 1923, OUC was created by the state legislature as an independent statutory commission with its own Board as a part of the government of the City. OUC was granted full authority to operate electric and water municipal utilities. The business was a paying venture from the start. By 1924, the number of customers had more than doubled. When Orlando citizens took over operation of their utility, the City's population was less than 10,000; by 1925, it had grown to 23,000.

OUC has full authority over the management and control of the electric and waterworks plants in the City, those it has built or acquired and has been approved by the Florida legislature to offer these services in Osceola County, as well as Orange County. OUC's charter has been amended a number of times since 1923 and it now allows it to undertake, among other things, the acquisition, construction, operation, and maintenance of electric generation, transmission, and distribution systems, chilled water systems, as well as water production, transmission, and distribution systems, to meet the requirements of its customers. In addition, OUC offers a variety of energy and compliance services through interlocal agreements with other municipal utilities.

In 1997, OUC entered into an Interlocal Agreement with the City of St. Cloud in which OUC assumed operational control of St Cloud's electric systems and the responsibility for supplying all of St. Cloud's loads for the 25-year term of the agreement, which added an additional 150 square miles of service area. OUC also assumed management of St. Cloud's existing generating units and power purchase contracts. This agreement has been extended through 2042.

2.1 Existing Generation System

Presently, OUC has ownership interests in four electric generating plants, which are described further in this section. Table 2-1 summarizes OUC's generating facilities as of January 1, 2024, which include:

- Stanton Energy Center Units 1 and 2, Stanton A, and Stanton B.
- Indian River Plant Combustion Turbine Units A, B, C, and D[2].
- Osceola Generating Station Units 1, 2, and 3.
- Florida Power & Light Company (FPL) St. Lucie Unit 2 Nuclear Generating Facility.

[2] As discussed throughout this report, OUC has purchased the steam units at the Indian River site; however, the units are currently in Extended Cold Shutdown and, therefore, are not included in calculations of OUC's available capacity.

Table 2-1 Summary of OUC Generation Facilities

(As of January 1, 2024)

PLANT NAME	UNIT NO.	LOCATION (COUNTY)	UNIT TYPE	FUEL		FUEL TRANSPORT		COMMERCIAL IN-SERVICE MONTH/YEAR	EXPECTED RETIREMENT MONTH/YEAR	NET CAPABILITY	
				Pri	Alt	Pri	Alt			Summer MW	Winter MW
Indian River	A	Brevard	GT	NG	FO2	PL	TK	06/89	Unknown	16(1)	18(1)
Indian River	B	Brevard	GT	NG	FO2	PL	TK	07/89	Unknown	16(1)	18(1)
Indian River	C	Brevard	GT	NG	FO2	PL	TK	08/92	Unknown	83(2)	88(2)
Indian River	D	Brevard	GT	NG	FO2	PL	TK	10/92	Unknown	83(2)	88(2)
Stanton Energy Center	1	Orange	ST	BIT	NG	RR	PL	07/87	12/25(3)	311(4)	311(4)
Stanton Energy Center	2	Orange	ST	BIT	NG	RR	PL	06/96	Unknown	352(5)	352(5)
Stanton Energy Center	A	Orange	CC	NG	FO2	PL	TK	10/03	Unknown	184(6)	189(6)
Stanton Energy Center	B	Orange	CC	NG	FO2	PL	TK	02/10	Unknown	292	307
St. Lucie	2	St. Lucie	NP	UR	--	TK	--	06/83	Unknown	60(7)	62(7)
Osceola Generating Station	1	Osceola	GT	NG	FO	PL	TK	12/2001	Unknown	157(8)	157(8)
Osceola Generating Station	2	Osceola	GT	NG	FO	PL	TK	12/2001	Unknown	157(8)	157(8)
Osceola Generating Station	3	Osceola	GT	NG	FO	PL	TK	06/2002	Unknown	157(8)	157(8)

(1)Reflects an OUC ownership share of 48.8 percent.
(2)Reflects an OUC ownership share of 79.0 percent.
(3)As discussed throughout this 10-Year Site Plan, OUC currently anticipates placing Stanton Energy Center Unit 1 into cold shutdown by the end of 2025.
(4)Reflects an OUC ownership share of 68.6 percent.
(5)Reflects an OUC ownership share of 71.6 percent and St. Cloud entitlement of 3.4 percent.
(6)Reflects an OUC ownership share of 28.0 percent.
(7)OUC owns approximately 6.1 percent of St. Lucie Unit No. 2. Reliability exchange divides 50 percent power from Unit No. 1 and 50 percent power from Unit No. 2.
(8) Osceola Generating Station Unit 2 is currently able to provide power to OUC, while Unit 1 and Unit 3 are currently not able to provide power to OUC. Unit 1 and Unit 3 are anticipated to be able to provide power to OUC beginning in the summer of 2025.

The Stanton Energy Center is located 12 miles southeast of Orlando, Florida. The 3,280-acre site contains Units 1 and 2, as well as Units A and B, and the necessary supporting facilities. Stanton Unit 1 was placed in commercial operation on July 1, 1987, followed by Stanton Unit 2, which was placed in commercial operation on June 1, 1996. Both units are fueled primarily by pulverized coal and can generate up to approximately 70 MW each on natural gas, utilize natural gas igniters, and operate at emission levels that are within the Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (FDEP) requirement standards for sulfur dioxide (SO_2), nitrogen oxides (NO_x), and particulates (PM). Stanton Unit 1 is a 453 MW net coal-fired facility; OUC has a 68.6 percent ownership share of this unit, which provides approximately 311 MW of capacity to the OUC system. Stanton Unit 2 is a 463 MW net coal-fired generating facility; OUC maintains a 71.6 percent (approximately 336 MW) ownership share of this unit. OUC anticipates placing Stanton Unit 1 in cold shutdown no later than 2025 and converting Stanton Unit 2 to no longer operate on coal and instead operate only on natural gas after the 2027 timeframe; OUC is in the process of determining the final timing of these changes.

OUC entered into an agreement with Kissimmee Utility Authority (KUA), FMPA, and Southern Company-Florida LLC (SCF, an affiliate of Southern Power), which governs the ownership of Stanton A, a combined cycle unit at the Stanton Energy Center that began commercial operation on October 1, 2003. NextEra Energy purchased Southern Power's interest in Stanton A, and as such, discussion of Stanton A's ownership structure refers to NextEra Energy throughout this Ten-Year Site Plan, as appropriate. OUC, KUA, FMPA, and NextEra Energy are joint owners of Stanton A, with OUC maintaining a 28 percent ownership share (and purchases 52 percent), KUA and FMPA each maintaining 3.5 percent ownership shares, and NextEra Energy maintaining the remaining 65 percent of Stanton A's capacity. Stanton A is a 2 X 1 combined cycle utilizing General Electric combustion turbines. Stanton A is dual-fueled with natural gas as the primary fuel and No. 2 oil as the backup fuel.

Stanton B is a 1 X 1 combined cycle utilizing General Electric combustion turbines. Stanton B is dual-fueled with natural gas as the primary fuel and No. 2 oil as the backup fuel. OUC is the sole owner of Stanton B.

The Indian River Plant is located four miles south of Titusville on US Highway 1. The 160-acre Indian River Plant site contains three steam electric generating units (No. 1, 2, and 3) and four combustion turbine units (A, B, C, and D). The three steam turbine units were sold to Reliant Energy in 1999, with OUC subsequently repurchasing the units in 2012. Given their current condition (the units are currently in Extended Cold Shutdown), the Indian River steam units do not provide generating capacity for OUC, but do provide OUC with future options for new generating capacity. The combustion turbine units are primarily fueled by natural gas, with No. 2 fuel oil as an alternative. OUC has a partial ownership share of 48.8 percent (approximately 16 MW summer and 18 MW winter, per unit) in Indian River Units A and B, as well as a partial ownership share of 79 percent (approximately 83 MW summer and 88 MW winter, per unit) in Indian River Units C and D.

OUC has a 6.08951 percent ownership share in St. Lucie Unit 2 (a nuclear generating facility operated by FPL), providing approximately 60 MW of summer and 62 MW of winter generating capacity to OUC. A reliability exchange with St. Lucie Unit 1 results in half of the capacity being supplied by St. Lucie Unit 1 and half by St. Lucie Unit 2.

St. Cloud has an entitlement to capacity from Stanton Unit 2 associated with its purchase through FMPA (related to FMPA's participation in the Stanton II Project). FMPA's ownership stake in Stanton Unit 2 through the Stanton II Project is 23.2 percent, and St. Cloud's purchase from FMPA's Stanton Unit 2 ownership is 14.67 percent (providing approximately 15 MW).

The Osceola Generating Station is comprised of three separate turbines, with each unit providing 157 MW of summer and winter capacity. Osceola Unit 2 was made commercial in June 2022; Osceola Unit 1 and Osceola Unit 3 are expected to be capable of delivering power to OUC by the summer of 2025 following completion of necessary maintenance and transmission system improvements.

2.2 Purchase Power Resources[3]

OUC has a purchase power agreement (PPA) with NextEra Energy for 80 percent of NextEra Energy's ownership share of Stanton A through December 2031, as well as an additional PPA with NextEra Energy to purchase the remaining 20 percent of NextEra Energy's ownership share of Stanton A through December 2028.

2.3 Power Sales Contracts

OUC has the following contractual power sales:

- a contract to provide power to the City of Lake Worth Beach (Lake Worth) through 2025.
- a contract to provide power to the City of Winter Park (Winter Park) through 2026.
- a contract to provide power to the City of Mt. Dora (Mt. Dora) through 2030.
- a contract to provide power to the City of Chattahoochee (Chattahoochee) through 2027.
- a contract to provide power to Lakeland Electric (Lakeland) through 2024.

For purposes of this Ten-Year Site Plan, OUC has assumed the winter and summer capacities and annual energy presented in Table 2-2 will be provided to, Lake Worth, Winter Park, Lakeland, Mt. Dora, and Chattahoochee.

[3] OUC's renewable power purchases are discussed in Section 2.4 of this Ten-Year Site Plan.

Table 2-2 Projected Annual Summer and Winter Peak Capacity (MW) and Annual Net Energy for Load (GWh) to be Provided to, Lake Worth, Winter Park, Mt. Dora, Chattahoochee, and Lakeland

	SUMMER MW				
Calendar Year	Lake Worth	Winter Park	Mt. Dora	Chattahoochee	Lakeland
2024	50	17	25	9	175
2025	50	17	26	9	0
2026	0	17	26	9	0
2027	0	0	27	9	0
2028	0	0	27	0	0
2029	0	0	27	0	0
2030	0	0	28	0	0
2031	0	0	0	0	0
2032	0	0	0	0	0
2033	0	0	0	0	0
	WINTER MW				
Calendar Year	Lake Worth	Winter Park	Mt. Dora	Chattahoochee	Lakeland
2024	25	17	18	6	125
2025	25	17	19	6	0
2026	0	17	19	7	0
2027	0	0	19	7	0
2028	0	0	20	0	0
2029	0	0	20	0	0
2030	0	0	20	0	0
2031	0	0	0	0	0
2032	0	0	0	0	0
2033	0	0	0	0	0
	ANNUAL GWh				
Calendar Year	Lake Worth	Winter Park	Mt. Dora	Chattahoochee	Lakeland
2024	324	98	105	36	73
2025	352	98	106	36	0
2026	0	98	108	37	0
2027	0	0	110	37	0
2028	0	0	112	0	0
2029	0	0	114	0	0
2030	0	0	116	0	0
2031	0	0	0	0	0
2032	0	0	0	0	0
2033	0	0	0	0	0
All Summer and Winter MW are non-coincident. All rounded to nearest MW or GWh					

2.4 OUC's Renewable Energy and Sustainability Initiatives and Community Activities

OUC is actively incorporating renewable technologies into its diverse generation portfolio and taking other steps to reduce carbon dioxide (CO_2) emissions. In 2020, OUC established new clean energy goals to achieve a 50 percent reduction in CO_2 emissions by 2030[4], a 75 percent reduction in CO_2 emissions by 2040[5], and net-zero CO_2 emissions by 2050. These targets require investments in technologies such as solar photovoltaic (PV) and energy storage. Such technologies will allow OUC to meet customer electricity demand while reducing CO_2 emissions.

Renewable energy, energy efficiency, sustainability and community engagement are crucial to achieving OUC's clean energy goals. OUC's recent renewable energy and sustainability initiatives, as well as activities in the community and customer education programs, are discussed in the following subsections[6].

In 2019, Orlando was selected as a recipient of a $2.5 million grant from the American Cities Climate Challenge (ACCC), a Bloomberg Philanthropies initiative that aims to accelerate and deepen efforts to make the greatest positive impact on climate change. The City and OUC agreed to the following actions:

1. Meet municipal electricity demand with renewable resources
2. Expand solar projects in the community
3. Develop a green building incentive program
4. Pilot demonstration projects for building decarbonization
5. Driving Energy Efficiencies Performance (DEEP)
6. Electrify city fleets and buses
7. Expand public EV charging infrastructure
8. Transform the EV market
9. Develop local energy resource centers.

2.4.1 Solar

OUC is actively working to provide more opportunities for its customers to participate in solar projects and programs. These initiatives include Solar Net Metering, the solar aggregation program (referred to as the OUCollective Solar Program), Residential Battery Rebate, OUCommunity Solar, and the Solar Thermal Program.

- Customers who participate in the Solar PV Program or the OUCollective Solar Program receive the benefit of retail rate net metering, which provides the customers with a monthly credit on their utility bills for solar energy produced in excess of what the home or business used from the grid. Any excess electricity generated and delivered by the solar PV systems back to OUC's electric grid is credited at the customer's full retail electric rate.

[4] Compared to a 2005 CO_2 baseline.
[5] Compared to a 2005 CO_2 baseline.
[6] Please refer to Section 5.0 of this Ten-Year Site Plan for discussion of OUC's conservation and demand-side management programs.

- Customers who take part in the OUCollective Solar Program are able to reduce installation costs by leveraging economies-of-scale to drive down the costs for PV systems as well as for energy storage. Under the OUCollective Solar Program, customers have access to installations for a discounted fixed price and from a contractor that has been vetted by OUC. As of March 1, 2024, 110 customers, representing a total of 1,265 kW of capacity, interconnected as part of the program.
- In 2019, OUC introduced a pilot energy storage rebate program for residential solar PV customers. Under this program, eligible residential electric customers receive a one-time rebate of up to $2,000 (limit one per customer) for the first 50 customers. In order to qualify for the rebate, batteries must be paired with a solar PV system and meet certain size and insurance requirements. This program exceeded its goal, with over 90 batteries installed as of January 1, 2024 and OUC is currently evaluating its next phase.
- Residential and commercial customers enrolled in the OUCommunity Solar program can get access to sustainable, maintenance-free solar energy without the costs associated with installing panels on their homes or businesses. Those enrolled subscribe all or a portion of their energy consumption to be produced by OUC's solar farms. Effective September 13, 2022, new and increased subscriptions are paused for re-evaluation of the program.
- Residential customers participating in the Solar Thermal Program receive a rebate of $900 for installing a solar hot water system. Federal incentives, such as the investment tax credit, are available to eligible customers to help minimize costs of solar PV, energy storage and solar thermal systems.

In 2023, OUC executed two PPAs with NextEra for 149 MW of new utility-scale solar capacity from two new solar farms, Storey Bend and Harmony 2 that are planned to enter commercial operation in December 31, 2024. Both sites are located in Osceola County. The new solar capacity will produce enough to serve about 27,000 typical Florida homes.

The Florida Municipal Solar Project is one of the largest municipal-backed solar projects in the United States. Approximately 900,000 solar panels will be installed on three solar sites in Osceola and Orange counties. Total planned capacity is 223.5 MWac, which is enough energy to power 45,000 average Florida homes. Each solar site is designed to generate 74.5 MWac of energy. OUC is a stakeholder in two of the sites, the Taylor Creek and Harmony Solar Energy Centers, which began operating in the summer of 2020. Under power purchase agreements with NextEra, OUC receives 108.5MWac from the two facilities, enough energy for 21,600 typical Florida homes. These two solar sites started commercial operations on June 30, 2020.

As part of a pilot program, a 4-megawatt, 8-megawatt-hour battery energy storage system (BESS) was installed at OUC Substation 29 in east St. Cloud. Substation 29 is connected to transmission lines that support the solar array at the Harmony Solar Energy Center.

In order to better utilize solar energy and increase its reliability during cloudy weather, OUC has embarked in designing its own advanced algorithms and control schemes. This has taken form in the project known as, "Nanogrid," a living laboratory for testing the interoperability of multiple distributed energy resources and the ability to self-operate at OUC's Gardenia facility. Nanogrid currently is comprised of 59 kWac of floating solar, 80 kWh of vanadium redox flow batteries, DC fast charging, Level 2 EV charging, V2G EV charging, as well as an intelligent control system developed in partnership with UCF – with more

technology already in the planning stages. This level of control will enable solar to become more reliable during intermittent weather as well as help to drive down costs for energy storage. In 2022, OUC added 16 kW/64 kWh of flywheel energy storage.

OUC is also evaluating the efficiency of different solar PV technologies through real-world testing. In particular, OUC installed a 104 kWdc solar array on the rooftop of its Gardenia office building in 2022. This array will be comprised of bifacial solar modules, which are expected to provide increased output as compared to mono-facial modules. This test array will enable OUC to evaluate any efficiency gains of bifacial panels in a real-world environment, which will inform decisions around large-scale solar PV installations in the future.

To promote customer awareness and increase education, OUC also has showcased solar energy with high-visibility solar sculptures, including "solar trees" at Camping World Stadium and the Orange County Convention Center and, most recently, a soccer ball-shaped solar sculpture situated outside Exploria Stadium, home to the Orlando City Soccer Club. The soccer ball sculpture was designed by University of Central Florida (UCF) students through a multi-department competition. Additionally, OUC has deployed multiple solar mobile device charging stations at LYNX bus shelters to power up electronic devices while passengers are waiting.

In 2019, OUC began to deploy weather stations with advanced sensors and measurement equipment that would record data including solar irradiance, beam radiation, wind speed, and soil moisture. With over 20 weather stations installed across our service territory, OUC is developing the capability to enhance solar production forecasting specifically to address high solar intermittency caused by dynamic cloud formation and cover, a common occurrence in Florida's climate. In 2020, OUC began testing cloud-tracking technology at two solar farms. Created through a collaboration with University of Central Florida College of Engineering students, "CIMS" or the Cloud Impact Mapping System, keeps watch for clouds moving toward solar fields, forecasts how soon they'll arrive and, once they do, their impact on solar production. This technology shows promise in helping OUC anticipate drop-offs in solar output and filling in the gaps with other generation assets.

In August 2018, OUC completed the addition of a new solar test site at its Pershing Operations Center. This test site allows OUC to study and test a variety of solar panels and tilt angles. OUC also collects weather data from the site to compare with the solar production data. These studies will allow OUC to determine how to make future solar installations more efficient. The peak capacity for this test array is approximately 24 kWac depending on the number of solar panels being tested at any given time. All of the electricity produced by the array is supplied back to the grid.

In February 2017, OUC installed an innovative floating solar array on a water retention pond at its Gardenia Operations Center. The 31.5 kWdc pilot project, which has since been increased to 64 kWdc, is the first in Florida to send power directly to the grid. Comprised of dozens of PV panels mounted on floats, it produces enough energy to power five homes. This design appeals to developers who want to invest in solar but do not want to cut down trees or use valuable land resources. Also, OUC is evaluating performance gains in energy production as a result of the increased reflectance and cooling effect of the water. More than 9,000 potential sites within Orange and Osceola counties have been identified where floating solar may be a viable option. In December 2020, OUC, joined by the City and the Greater Orlando

Aviation Authority, dedicated a 124 kWdc floating solar array that was installed in a pond at Orlando International Airport. Shaped like the airport's "O" logo, the array is highly visible and produces enough power for 14 homes. OUC is expecting to complete installing a 2 MW floating array on a Florida Department of Transportation (FDOT) pond in 2024. Plans are also in place to develop a roadmap for a larger deployment of floating solar throughout OUC's territory.

In 2015, OUC signed a 20-year PPA for 8.9 MWac of solar energy from a second solar farm at the Stanton Energy Center. Brought online in 2017, the Kenneth P. Ksionek Community Solar Farm provides enough electricity to power 2,100 homes. At the time the Kenneth P. Ksionek Community Solar Farm was constructed, only one other utility in the nation had placed panels over a coal ash byproduct landfill at a power plant.

Examples of OUC's solar initiatives prior to 2015 include:

- In 2008, Orlando was designated a "Solar American City" by the U.S. Department of Energy (DOE). The ongoing partnership between OUC, the City and Orange County received $450,000 in funding and technical expertise to help develop solar projects in OUC's service area that can be replicated across the country.
- To further facilitate development of solar energy, OUC supported Orange County in its efforts to obtain a $2.5 million grant from the Florida Department of Environmental Protection to install a 1 MWac solar array on the Orange County Convention Center. The project "went live" in May 2009 and is currently producing clean, green power.
- In 2009, OUC and clean energy company Petra Solar teamed up to launch the first utility pole-mounted solar PV system in Florida. Ten of Petra Solar's SunWave™ intelligent PV solar systems have been installed on OUC utility poles along Curry Ford Road. Together the panels can generate up to 2 kWac. In addition, the systems enhance electric distribution grid reliability through a host of capabilities such as voltage and frequency monitoring and reactive power compensation.
- In 2010, OUC invested $100,000 in an educational partnership with the Orlando Science Center to build a 31 kWac PV array atop the Center's observatory. The system provides about 42,660 kilowatt-hours (kWh) of electricity per year, or enough power to serve about four homes.
- In 2011, OUC added solar to its fleet of natural gas, coal, and landfill gas generation already on-site at Stanton Energy Center. The Stanton Solar Farm, constructed in partnership with Duke Energy, produces about 5.1 MWac and was the first solar farm in Orange County. OUC purchases 100 percent of the output of this installation for 20 years.
- In 2013, OUC built the first Community Solar Farm in Central Florida. This innovative project allowed customers to "buy a piece of the sun" and receive the benefits of solar without having to install it on their own buildings. The 400 kWac system sold out in six days and had a total of 39 customers sign up. The American Public Power Association (APPA) awarded OUC the 2015 Energy Innovator award for its groundbreaking Community Solar Farm program.

2.4.2 Landfill Gas

Methane or landfill gas is created by the decomposition of wet organic waste under anaerobic, or oxygen-less, conditions in a landfill. This gas is considered a renewable energy source because the anaerobic digestion process continues as waste materials are constantly added to the landfill.

In partnership with Orange County, OUC captures methane gas emissions from county landfill cells and pipes it to the Stanton Energy Center where it is co-fired with coal. In addition to helping to reduce greenhouse gas emissions, this 8 MW project has the potential to displace more than three percent of the coal burned at the Stanton Energy Center. It will be capable of producing in excess of 100,000 megawatt-hours (MWh) of reduced-emissions power – offsetting about 44,000 tons of coal each year.

In December 2015, OUC began receiving energy from the CBI project (now LMS Energy) at the John Drury Landfill, located in Holopaw in Osceola County, for a minimum of 9 MW with an option to expand up to 25 MW of landfill gas energy. For the CBI project, OUC built a new 25 kV distribution line that is comprised of 15.5 miles of overhead and nearly five miles of underground line. The new feeder line will send clean, renewable energy from the landfill to an OUC electric substation in St. Cloud and is the longest distribution feeder on the grid. This feeder will play a large role in OUC's clean energy strategy.

OUC has also entered into long-term PPAs for landfill gas projects with WMI in Broward County (6 MW) and OPAL Fuels in Charlotte County and Collier County (4 MW).

2.4.3 Carbon Reduction

With more than 775 vehicles – ranging from plug-in hybrids to bucket trucks – OUC's fleet logs more than 2.7 million miles annually. OUC currently has seven hybrid bucket trucks. Bucket trucks are a promising application for hybrid technology since much of the vehicle's work is done when stationary. The hybrid diesel-electric system allows the main engine to be turned off while crews operate entirely off the battery, therefore reducing the production of greenhouse gases and reducing fuel consumption for idling. OUC reduces its carbon footprint by using alternative fuels, purchasing more electric vehicles and recycling automotive products to help the environment. As part of an overall plan to reduce emissions in its fleet, OUC uses "B20" – a blend of 80 percent petroleum diesel and 20 percent biodiesel – a clean-burning alternative fuel made from new or used vegetable oils and animal fats, including recycled cooking grease. Compared to petroleum diesel, biodiesel produces lower emissions, so it is better for the environment. B20 has been integrated seamlessly into the fueling system without any changes to vehicles or fuel storage and distribution equipment. OUC uses biodiesel at the Pershing Fleet Center and the Gardenia site. OUC has installed two 10,000-gallon fuel tanks that store E85 fuel at its Pershing and Gardenia sites.

OUC's Fleet Division has incorporated a number of eco-conscious policies, including the use of earth-friendly products and special care taken to dispose contaminated fuels according to environmental standards. Tires, batteries, and oil filters are recycled through vendors, while antifreeze and motor oil are handled on-site. OUC recycles about 20,000 gallons of used oil each year. OUC also has a vehicle idling policy that requires the engine to be turned off after five minutes. Diesel engines use about one gallon of fuel per hour when idling, so this policy saves about $4 per hour per vehicle.

Embracing fuel-efficient technology as a commitment to green initiatives, OUC has grown the commitment to include sixteen all-electric cars, two plug-in electric hybrids, and 26 hybrids in the fleet. Additionally, OUC has installed more than 300 public charging stations. Up to 22 high-speed chargers are under development at the new Robinson Mobility Recharge Hub in downtown Orlando. The charging facility will be the largest of its kind in Florida and will be able to power up all kinds of EVs. An OUC-led partnership that includes the City, Orange County and Power Electronics, the maker of EV charging equipment, received a $500,000 grant from the Florida Department of Environmental Protection to build the station. The

charging hub complements OUC's support for a law Gov. Ron DeSantis signed in 2020 calling for the creation of a statewide EV charging infrastructure. These efforts have helped push Orlando to one of the top 5 EV ready cities in the United States. OUC has provided an additional 40 level 2 charging stations to meet the needs of our growing fleet and employee needs. OUC also offers discounts to employees who choose to charge their vehicles at work, utilize the SunRail commuter train, and use the LYNX city bus system to get to and from work.

Funded in part by a $1.9 million "Low or No Emission Grant" from the Federal Transit Administration, Orlando's new e-bus pilot program puts innovation and clean energy exploration in motion. Partnering with LYNX and the City of Orlando, OUC invested in charging stations and batteries for the e-buses with the intention of gathering real world battery performance data. 14 LYNX battery-run electric buses are in service on LYNX's LYMMO Grapefruit, Lime and North Quarter lines. In addition to enhancing Orlando's charging infrastructure, the e-buses will help reduce emissions in some of our community's economically disadvantaged neighborhoods.

As part of OUC's commitment to alternative fuels and efficient transportation, three of the 32 EV charging stations at Reliable Plaza are offset by the sun. A 16-panel solar array provides a total of 2.8 kWac of power to charge the vehicles at stations in the garage. At night or on a cloudy day when the sun is not shining, the power is drawn from Reliable Plaza. When the sun is shining but no car is charging, the power is fed back into the building. OUC can access a special website to track real-time information and total system usage for its charging stations and the public charging in our territory. Users have a key fob for the charging station and supply their own power cord. Plug-in drivers can go to mychargepoint.net to locate available charging stations nationwide. Users register with ChargePoint to set up an account that links to their credit card. The power is billed through a third-party agreement with ChargePoint, which remits the electricity fees back to OUC each month.

In 2016, OUC enhanced its EV programs with the launch of a new Commercial EV Charging Station Program that encourages adoption of EVs by providing customers a turnkey option for charging stations at their facilities. The program offers two options: *Charge It*, where OUC owns and maintains the equipment with electric usage billed separately, and *Own It*, where OUC provides a turnkey solution and the commercial customer owns the equipment.

In 2018, OUC relaunched the Electrification program and established two key events that align with one of the program's initiatives to help increase electric vehicle adoption in Central Florida. The first event that OUC hosted was an EV Ride & Drive designed to introduce customers to electric vehicles and build awareness about electric vehicle technology. The event was held at Camping World Stadium June 15-16. Over two days, 140 guests completed 304 test drives. The following year, OUC hosted an EV Ride & Drive event in partnership with Valencia College and Enterprise Rent-a-Car on April 13, 2019. OUC's has hosted and sponsored subsequent EV Ride & Drives at various locations, including most recently at the SunTrax test track facility in Auburndale, which focused on transitioning to an EV fleet. Due to the pandemic, OUC cancelled the 2020 EV Ride & Drive and in its place created eight EV ride-along videos on OUC.com for customers to learn more about the benefits of electric vehicles and charging stations. The videos have received nearly 14,000 views.

The second event is the Florida Utility Electric Vehicle Roundtable. This a semi-annual event was created to discuss EV-friendly policies, corridor charging planning and joint initiatives with all municipal and investor-owned utilities from across Florida. The first in the series of roundtables hosted by OUC was held on September 17, 2018, with more than 70 attendees. To date, OUC has hosted three additional roundtables, and discussions have included the current and future state of EVs in Florida, the Volkswagen settlement and two joint initiatives for data acquisition and a technology pilot.

In October 2020, OUC, in partnership with the City and Electrification Coalition, launched the Electrified Dealers Program. It's focused on expanding consumer adoption of EVs in Central Florida. Through direct engagement with dealers and by offering rebates, OUC seeks to improve the EV purchasing experience and reduce barriers to EV ownership. In addition to offering a rebate on a plug-in electric vehicle purchase or lease and providing a cost-effective for businesses to install EV charging stations, OUC, in 2020, committed to investing $45 million in electrification programs aimed at putting more than 40,000 EVs on Central Florida's roads by 2030.

Additional examples of OUC's initiatives to reduce or capture carbon are as follows:

- OUC has participated in research projects with the Department of Energy to investigate Carbon Capture and Utilization via recycling carbon from flue gases.
- OUC is working on planting sections of the 3,280 acres at the Stanton Energy Center. The site uses less than 1,000 acres currently and by planting new trees, OUC intends to measure and track the recycling of CO_2 from the electric generating units to reduce its overall carbon footprint.
- OUC continues to improve on operations at the Stanton Energy Center, having an improved design on the Unit 2 HP/IP and LP steam turbine that provides additional output without increasing fuel consumption or emissions. OUC has installed the same improvement on the Unit 1 HP/IP steam turbine. Other recent improvements include updated control systems for both units, and adding natural gas co-firing capability to both units. This enables them to run at lower loads and increases operational flexibility. OUC also installed variable frequency drives on Unit 2 to improve efficiency while operating at low load levels.

2.4.4 Energy Efficiency and Sustainability

OUC's commitment to efficiency and sustainability is also demonstrated by Reliable Plaza, OUC's energy and water efficient center on West Anderson Street that opened in 2008 and replaced OUC's 40-year-old Administration Building. Reliable Plaza earned Gold Leadership in Energy and Environmental Design (LEED) certification in 2009, officially cementing the 10-story administration and customer service center as the "Greenest Building in Downtown Orlando." The nonprofit U.S. Green Building Council awarded the Gold level certification after completing a review of the building's design and construction. Reliable Plaza also holds a Florida Water Star certification, a voluntary program for new and existing construction that encourages water efficiency in appliances, plumbing fixtures, irrigation systems and landscapes. Reliable Plaza utilizes a number of environmentally friendly features designed to use 28 percent less energy and 40 percent less water than a similarly sized facility.

To further demonstrate OUC's commitment to sustainability, many projects are active or are planned across its facilities. These projects focus on improving building efficiency through automation and control technology on its HVAC and lighting equipment in addition to smart irrigation and Xeriscape landscape designs. The latest example is at the Gardenia and Pershing campuses where they have undergone

extensive LED lighting retrofits. Some buildings have received HVAC upgrades as well as new chiller investments.

In 2016, OUC built a living wall and rain harvest garden to showcase sustainable use of vertical space by replacing impervious surfaces while demonstrating water conservation examples along with Florida-friendly landscaping. The project underwent major improvements including irrigation changes that have improved water consumption. A new self-guided tour and marketing materials were developed with a focus on water education. Improvements in the garden structure increased the yield of harvests tenfold from 2019. Edible plants from the garden are distributed to employees to raise awareness about the importance of buying and growing produce locally.

New construction projects will keep sustainability and energy efficiency at the forefront. This is exemplified by the planned construction of OUC's St. Cloud Operations & Maintenance Facility Project, a 24-acre property that will support permanent fleet and logistic operations, as well as accommodate a future new substation based on projected load growth. The intended goal is to make this into a net-zero energy campus as well as meeting the standards for LEED certification. The facility is planned to open in 2024, and will also serve as an emergency response center for OUC operations.

OUC's Commercial Indoor Lighting Program helps customers convert old, inefficient lighting to high-efficiency technology. OUC, Orlando Health, and the Orlando Catholic Diocese have entered into master agreements to upgrade indoor lighting at most if not all of their facilities over the next 3-5 years. More than 25,000 fixtures are estimated to be replaced, which will reduce demand by approximately 1,100 kW with energy savings of more than 10 million kilowatt hours, or about $945,000 in cost savings annually. Since launching the program in 2002, more than 45 million kWh and 10.5 MW demand has been saved in places such as public schools, churches, theme parks and hospitals, resulting in annual energy cost savings of about $16 million.

In 2013, OUC launched a program to replace 100-watt High Pressure Sodium (HPS) streetlights with LED fixtures. The initiative was expanded in 2016 to include 250-watt and 400-watt HPS fixtures, and was completed in 2022 resulting in the replacement of more than 29,000 HPS streetlights with their LED equivalent. These lights save the City more than 14 gigawatt-hours of annual energy and, equally important, LED lighting improves safety by emitting whiter, cleaner light that provides better visibility for motorists, pedestrians and law enforcement.

In May 2021, a Request for Proposal was sent out to select a consultant that could complete a comprehensive analysis of customer facing conservation related energy efficiency programs and submit findings to retain, improve, or change offerings. This engagement primarily focused on residential and small commercial customer offerings. The expectation is that the work completed through this engagement will help expand OUC's portfolio of customer facing efficiency programs. The analysis completed and recommendations provided will consider OUC's customer base, service territory, and demographics. OUC is looking for programs and efficiency measures that result in: environmental benefits such as a reduction in Greenhouse Gas Emissions, a reduce load measured in kilowatt and kilowatt hours, and cost-effective benefits for the customers we serve. Final recommendations by consultant Research America were presented and discussed with OUC in the fall of 2023. The next step is to put together an internal feasibility plan of which recommendations can be achieved as part of the 2024 Efficiency Delivered Enhancement operational plan.

2.4.5 OUC's Green Team

With the philosophy that changing an organization's culture requires both corporate and individual accountability, OUC has established the Green Team – a dedicated group of employee volunteers who work to implement practical, sustainable operations in their respective work areas. In 2018, the Green Team went through a relaunch with the recruitment of new and passionate employees. Employees received training in sustainability and Eco practices. Furthermore, the Green Team has hosted e-waste collection events, has worked to vastly improve OUC's waste processes and has participated in national events such as Earth Hour.

The Green Team continues to identify ways to increase employee education and engagement and supports Corporate Sustainability projects to improve energy and water efficiency in OUC buildings, reduce waste, lower emissions from operations, and create a healthier, happier environment for employees and customers.

With the Gold LEED-certified Reliable Plaza setting the standard, other OUC facilities have followed suit, implementing a number of environmental efforts, including:

- Retrofitting and upgrading light bulbs and ballasts
- Installing light sensors
- Turning up thermostats
- Cutting back on landscape and exterior building lighting
- Purchasing Energy Star-rated appliances when replacements are needed
- Using environmentally friendly cleaning products
- Upgrading HVAC systems
- Installing rain sensors on irrigation systems
- Cutting grass less frequently at water plants, substations and areas not highly visible to the public

Going forward, OUC is planning a number of new green initiatives including establishing an Internal Operations Corporate Sustainability Plan. OUC currently has single stream recycling at all of its facilities and recycles industrial materials such as wood pallets, utility meters, wire reels and copper. It keeps metrics of its energy, water, and waste performance. It has developed internal policies such as electronic document storage, online document review, double-sided printing and specifies the use of recycled paper and office products whenever practical.

2.4.6 Sustainability Community Activities

In 2021, OUC conservation specialists and the Community Engagement team conducted presentations, provided face-to face consultations, scheduled audits, and disseminated information on conservation programs. Still in the midst of the pandemic in 2021, OUC participated in a mix of in-person and virtual community engagements. Below is a list of some of the events the OUC Sustainability Department participated in along with Community Engagement:

- Central Florida Earth Day
- St. Cloud Earth Day
- Orlando Youth Energy Academy

- HEAT Tradeshow
- Annual Peghorn Pig-Out (St. Cloud)
- 5th Annual Community Rainbow Run
- National Night Out
- City of Orlando District 1 Fall Festival
- Hispanic Chamber of Commerce Hola in the Park (St. Cloud)
- OUC Orlando Half Marathon
- Lake Nona Stem Night

In February 2021, OUC, along with the City and the Orlando Science Center, unveiled the Tiny Green Home as a mobile educational showcase of sustainable living. The 200-square-foot home is being used to raise awareness of the benefits of energy and water conservation, renewable energy, sustainability rebates, vehicle electrification, composting, growing food and sustainability programs offered by OUC, the City and the Science Center, the host site of the mobile exhibit. The City and OUC are able to transport the Tiny Green Home to events throughout the year. The micro-dwelling also includes a functioning roof-top solar array and a rain barrel to collect and conserve water, among other green features visitors can add to their own homes. The Tiny Green Home also offers an augmented reality experience. The project is funded equally by OUC and the city, along with support from the Bloomberg Philanthropies American Cities Climate Challenge. In 2021, more than 13,000 visitors interacted with the tiny home between community events and Orlando Science Center tours. Since the Tiny home is mobile, OUC was able to take it on the road to four community events in 2022— Central Florida Earth Day, Hispanic Chamber Hola in the Park, OUC Orlando Half Marathon and Lake Nona Stem Night.

2.4.7 Neighborhood Meetings

In 2019 and 2020, OUC hosted a series of five neighborhood meetings to educate residents on the Electric Integrated Resource Plan and to gather their feedback. At each meeting, attendees were asked to rank the following attributes in order of importance to them: sustainability, reliability, resiliency, affordability.

In 2021, OUC hosted a three-part virtual meeting series targeted to neighborhood HOA's (homeowner associations) and NOA's (neighborhood associations) within our service territory. Attendees included board president and representatives had the opportunity to learn more about OUC's products and services, as well as how to save energy, water, and money so they can pass the knowledge along to your neighbors. These 1-hour meetings allowed attendees to meet live with OUC experts who gave them a closer look at options like OUC's programs including water efficiency rebates and conservation tips.

2.4.8 Home Utility Report Program

The Home Utility Report Program (HUR) is a free service offered to OUC customers designed to help them save energy, water, and money. The report compares a customer's energy and water consumption to similar households, as well as provides personalized tips that show how much they can save by changing their behavior. Participants receive a free HUR monthly email report or bi-monthly printed report. To administer the HUR program, OUC works with a third-party company that helps utilities meet their efficiency goals through effective customer engagement. There is also an online portal available to customers to obtain additional information on how to save energy and water.

2.5 Transmission System

OUC's existing transmission system in Orlando consists of 31 substations interconnected through approximately 340 miles of 230 kV and 115 kV lines. OUC is integrated into the Florida Reliability Coordinating Council (FRCC) regional transmission grid through multiple utilities. Additionally, OUC is responsible via an Interlocal Agreement for planning, operating and maintaining St. Cloud's seven substations interconnected through approximately 59 miles of 230 kV and 69 kV transmission lines.

3.0 STRATEGIC CONSIDERATIONS

OUC incorporates a number of strategic considerations while planning for the electrical system. This section provides an overview of a number of these strategic considerations.

3.1 Strategic Business Units

OUC 's Electric and Water operations is organized into three strategic business units: Electric & Water Production (EWP), Transmission (TRAN) and Electric and Water Distribution (EWD) that report to a Chief Operating Officer.

3.1.1 Energy and Water Production Business Unit

The EWP business unit has structured its operations based on a competitive environment that assumes that even OUC's customers are not captive. EWP will only be profitable if it can produce electricity and water that is competitively priced in the open market. In line with this strategy, OUC is continually studying strategic options to improve or reposition its generating assets.

OUC's generating system has been designed over the years to take advantage of fuel diversity and the resultant system reliability and economic benefits. OUC's longstanding intent to achieve diversity in its fuel mix is evidenced by its participation in other generating facilities in the State of Florida. The first such endeavor occurred in 1977 when OUC secured a share of the Crystal River Unit 3 nuclear plant (which is now retired), followed by the acquisition of an ownership share in Lakeland Electric's McIntosh Unit 3 coal-fired unit (which is now retired) in 1982. In 1983, OUC acquired a share of the St. Lucie Unit 2 nuclear unit. OUC also modified the Stanton Energy Center coal units to allow the units to offset a portion of their coal usage with natural gas. Additional details of OUC's generating facilities are presented in Table 2-1 and Schedule 1 of Section 12.0 of this Ten-Year Site Plan.

OUC's fuel diversity is further enhanced by the renewable energy resources that are discussed in detail in Section 2.4 of this Ten-Year Site Plan.

In 2020 the Business Unit led the Electric Integrated Resource Plan that calls for a review of OUC's generation needs in light of the growing penetration of distributed energy resources, such as solar power, and a call to move to Net Zero Carbon by 2050. Florida-specific factors were taken into consideration because renewable resources are limited relative to other regions in the country and could impact fuel diversity. Currently, wind, hydroelectric and geothermal are not economically and/or technically viable in Florida – and biomass and landfill gas, while technically viable, are only available in small quantities. While solar is feasible, it poses intermittency challenges, and back up resources will be necessary to ensure that power is always available. OUC will continue to evaluate wind-by-wire generation and monitor emerging clean technologies such as hydrogen, offshore wind and small modular nuclear power plants.

Table 3-1 summarizes OUC's existing (owned and purchased) capacity by fuel type, including renewable energy resources. The ability to generate up to approximately 70 MW while operating on natural gas in each of Stanton Units 1 and 2 further enhances the percentage of generating capacity fueled by natural gas.

Table 3-1 Capacity (MW) Owned and Purchased by OUC by Fuel Type

(As of January 1, 2024)

PLANT NAME	WINTER CAPACITY						SUMMER CAPACITY					
	Coal	Nuclear	Gas/ Oil	PV	LFG	Total	Coal	Nuclear	Gas/ Oil	PV	LFG	Total
Stanton[1][2]	562		945			1,507	562		919	7		1,488
Indian River			213			213			197			197
St. Lucie		62				62		60				60
Osceola[3]			157			157			157			157
Other (MW)					19	19				55	19	74
Total (MW)	562	62	1,315	0	19	1,958	562	60	1,273	62	19	1,976
Total (percent)	29%	3%	67%	0%	1%	100%	28%	3%	64%	3%	1%	100%

[1] Includes OUC's share of the landfill gas burned in Stanton Units 1 and 2.
[2] Stanton Units 1 and 2 can each generate up to approximately 70 MW while operating on natural gas.
[3] Reflects Osceola Generating Station Unit 2, which is the only Osceola unit currently capable of providing power to OUC.

3.1.2 Transmission Business Unit

The OUC Transmission Business Unit is responsible for the planning, engineering, construction, and maintenance of all substations and lines operating at 69kV or higher. To maintain reliable and economic service and proactively plan for the future, OUC plans and evaluates various upgrades to its transmission system.

3.1.3 Energy and Water Distribution Business Unit

OUC's EWD business unit focuses on providing OUC's customers with the safest and most reliable electric service possible.

OUC's leadership in providing reliable electric distribution service is demonstrated by its commitment to making initial investments in high quality material and equipment. Additionally, more than 60 percent of OUC's distribution system is underground, protecting it from trees and high winds. OUC's dependability is also attributable to its proactive maintenance programs to identify and correct potential problems, proactive replacement of old equipment, and a tree-trimming program that minimizes tree-related service disruptions.

3.2 Florida Municipal Power Pool

In 1988, OUC joined Lakeland Electric and FMPA's All-Requirements Project members to form the Florida Municipal Power Pool (FMPP). Later, KUA joined FMPP. Over time, FMPA's All-Requirements Project has added members as well. FMPP is an operating-type electric pool, which dispatches all the pool members' generating resources in the most economical manner to meet the total load requirements of the pool. The central dispatch provides savings to all parties via reduced commitment costs and lower overall fuel costs. OUC serves as the FMPP dispatcher and handles all accounting for the allocation of fuel expenses and savings. The term of the pool agreement is three years and automatically renews until terminated by the consent of all participants.

OUC's participation in FMPP provides significant savings from the joint commitment and dispatch of FMPP's units. Participation in FMPP also provides OUC with a ready market for any excess energy available from OUC's generating units.

3.3 Security of Power Supply

OUC currently maintains interchange agreements with other utilities in Florida to provide electrical energy during normal and emergency conditions. The reliability of the power supply is enhanced by metered interconnections with other Florida utilities, including 11 interconnections with Duke Energy Florida, four with KUA, two each with Tampa Electric Company and Reedy Creek Improvement District, two with FPL, one each with Lakeland Electric and St. Cloud, and one with NextEra. Along with enhancing reliability, these interconnections also facilitate the marketing of electric energy by OUC to and from other electric utilities in Florida.

3.4 Environmental Performance[7]

As the quality of the environment is important to Florida, and especially important to the tourism-driven economy of Central Florida, OUC is committed to protecting human health and preserving the quality of life and the environment in Central Florida. To demonstrate this commitment, OUC has chosen to operate its generating units with emission levels below those required by permits and licenses by equipping its power plants with the best environmental protection systems available at the time of their construction and continuously enhancing these systems over time. Unit 2 is the first unit of its size and kind in the nation to use selective catalytic reduction (SCR) to remove nitrogen oxides (NO_X). Using SCR and low-NO_X burner technology, Stanton 2 successfully meets the stringent air quality requirements imposed upon it. Stanton A incorporates environmentally advanced technology and enables OUC to diversify its fuel mix while adding more flexibility to OUC's portfolio of owned generation and purchased power. Stanton B further contributes to OUC's environmentally responsible portfolio of generating resources.

This superior environmental performance not only preserves the environment, but also results in many economic benefits, which help offset the costs associated with the superior environmental performance. Additionally, OUC has installed natural gas igniters for both Stanton 1 and Stanton 2, eliminating the use of No. 6 fuel oil and reducing the amount of coal burned during operations when economical to do so.

Further demonstrating its environmental commitment to clean air, OUC has signed a contract to burn methane gas collected from the Orange County landfill adjacent to Stanton Energy Center. OUC also receives the energy generated from the burning of methane gas collected from the John Drury Landfill and the Monarch Hill Landfill. Methane gas, when released into the atmosphere, is considered 20 times more intense than carbon dioxide in terms of possible global warming effects. Stanton 1 and Stanton 2 both have the capability of burning methane.

OUC has also voluntarily implemented a product substitution program not only to protect workers' health and safety but to minimize hazardous waste generation and to prevent environmental impacts. The Environmental Affairs and Safety Divisions constantly review and replace products to eliminate the use of hazardous substances. To further prevent pollution and reduce waste generation, OUC also reuses and recycles many products.

3.4.1 Emphasis on Sustainability

OUC completed its first greenhouse gas inventory for the entire company in 2008 and updates the inventory regularly. This report helps OUC analyze how it impacts the environment and details operating emissions. The report is made available to customers, typically commercial ones that request it.

3.5 Community Engagement, Connecting with Our Customers, and Economic Development

3.5.1 Community Engagement

As Orlando's hometown utility, OUC is committed to helping the community it serves. Individuals and organizations know they can rely on the utility when it matters most–through board involvement, support, employee volunteerism and more. OUC supports more than 400 nonprofit and business-based

[7] Please refer to Section 2.4 of this Ten-Year Site Plan for a detailed discussion of OUC's renewable generating technologies and other environmental initiatives.

organizations and participates in nearly 150 events each year, while employees annually volunteer between 5,000 and 10,000 hours in the community. Many events incorporate sustainability messaging, encouraging the efficient use of energy and water.

From unique solar pavilions and sculptures at high visibility locations like Lake Lorna Doone Park, Exploria Stadium and St. Cloud's Lakefront Park, to solar mobile device charging stations at LYNX bus stations and H_2OUC Hydration Stations at parks and neighborhood centers, OUC's commitment to sustainability can be seen all around town.

OUC also supports a diverse group of business chambers within its service territory, including Lake Nona Chamber, St. Cloud Chamber and Indian American, Hispanic, African-American, Asian, Caribbean, Disability and LGBT chambers. OUC is also actively involved with economic gardening organizations such as the Orlando Economic Partnership, GrowFL, National Entrepreneur Center, Prospera (formerly the Hispanic Business Initiative Fund), Black Business Investment Fund, Athena and technical associations. OUC helped power OiX Orlando, a collective of tech experts, entrepreneurs, and tech industry leaders fueling the explosion of high-tech startups in the region.

In 2020, OUC and SALT Outreach, Inc., provided energy-efficient showers to homeless citizens around Orlando. OUC partnered with the nonprofit to develop a solar-powered trailer with four bathrooms.

On Feb. 10, 2021, OUC unveiled a 200-square-foot "home" on wheels that will serve as a model of sustainable living for anyone to experience. The Tiny Green Home, a partnership between OUC, the City of Orlando and Orlando Science Center (OSC), is an educational resource showcasing the benefits of energy and water conservation, renewable energy, sustainability rebates, vehicle electrification, composting, growing food and sustainability programs offered by OUC, the city and OSC. Stationed on OSC property in Loch Haven Park, the micro-dwelling also includes a functioning roof-top solar array and a rain barrel to collect and conserve water, among other green features visitors can add to their own homes. The Science Center is responsible for staffing, operating and maintaining the exhibit, which is accessible with admission. In 2023, more than 23,000 visitors interacted with the home between community events and OSC tours. Since the Tiny home is mobile, OUC was able to take it on the road to five community events in 2023— Central Florida Earth Day, the Central Florida Auto Show, OUC Orlando Half Marathon, the Florida Municipal Lineman Rodeo, and Lake Nona STEAM Night.

3.5.1.1 Utility and Community Volunteerism

OUC launched Project CARE, its utility assistance fund, in 1994. The program, managed by Heart of Florida United Way 2-1-1, a local, nonprofit organization, provides rapid response to customers in need through case management. Since its inception, Project CARE has allocated nearly $8 million, assisting more than 27,000 households and thousands of families and individuals. For every $1 donated by customers, OUC contributes $2 to the program.

When the onset of the COVID-19 pandemic in early 2020 caused the local economy to nearly shut down completely, OUC took immediate steps to help impacted customers. In mid-March, OUC suspended electric and water disconnections for nonpayment and waived late payment fees. In April, the OUC Board approved a $12.1 million customer-relief package that included $7.5 million to lower electric fuel rates

for May bills, representing a 11.4% overall decrease for residential customers and 11.2% to 19.7% reduction for commercial customers; a $2.6 million contribution to Project CARE, in partnership with the City of Orlando; $1.5 million for utility bill payment assistance to qualified small businesses; $500,000 for new OUC Power Pass customers. Payment plans and deferred payment arrangements were offered to customers for up to 12 months depending on qualifying criteria. While OUC resumed disconnects in July 2020, OUC's efforts to assist financially distressed customers extended well into late 2020. By the end of 2020, more than 6,500 customers accessed Project CARE funds while more than 1,800 small businesses took advantage of the OUC relief program targeting them. Meanwhile, OUC connected more than 2,800 customers to the federal government's Low-Income Home Energy Assistance Program (LIHEAP) and helped more than 40,000 set up payment plans, amounting to millions of dollars in deferred revenues.

Since the pandemic, with prices rising for so many products and services, we know our customers are feeling the strain. That's why OUC is continuing to invest in OUC's utility assistance program—Project Care. Below shows the assistance provided in the last three fiscal years since the pandemic. In OUC's fiscal year 2023, OUC provided nearly $800,000 in utility assistance to help more than 2,600 households.

In FY 2021: October 1, 2020 – September 30, 2021

- Total Assistance Amount: $282,473
- Households Assisted: 1,174
- Average Assistance Amount: $240.61

In FY 2022: October 1, 2021 – September 30, 2022

- Total Assistance Amount: $445,239
- Households Assisted: 1,372
- Average Assistance Amount: $324.52

In FY2023: October 1, 2022 – September 30, 2023

- Total Assistance Amount: $799,864
- Households Assisted: 2,694
- Average Assistance Amount: $296.94

Regarding volunteerism, OUC's Proud Volunteer program encourages and rewards employees for their volunteer work in the community. Employees volunteer more than 10,000 hours every year and help support a variety of nonprofit organizations in the community.

The annual OUC Charity Golf Tournament has raised over $1 million for more than 66 Central Florida non-profits since its inception in 1995. In 2023, as part of the OUC100 celebration, OUC raised $100,000 for 10 central Florida non-profit organizations.

Each year, OUC participates in the annual Ride-4-Ronald bike ride to benefit Ronald McDonald House Charities of Central Florida. Since 2013, the OUC team has raised more than $100,000 for the charity event.

3.5.1.2 Water Color Project

Since 2006, OUC has hosted the Water Color Project, a conservation-themed art program that encourages students to highlight the importance of saving water through their artwork. While fourth- and fifth-grade students compete to have their artworks featured in OUC's Water Conservation Calendar, middle and high school students paint water-inspired themes on rain barrels. Their completed works are displayed in a traveling exhibit, judged and later sold in a silent auction, with the proceeds going back to the winning schools' art programs. More than 30,000 students from 200 local schools have participated in this program. In 2020, due to the pandemic, OUC created a virtual awards ceremony to recognize the hard work and creativity of participating students and teachers while educating the community on the importance of water conservation. The virtual event received more than 2,400 views. Launched in 2020, OUC now hosts an annual public auction of the rain barrels painted by the local middle and high school students who participated in our annual Water Color competition. Proceeds directly benefit the Orange County Public Schools Visual Arts Department.

3.5.1.3 Project AWESOME

OUC and the Orlando Science Center deliver energy and water conservation workshops to every fifth grader in OUC's service territory via Project AWESOME (Alternative Water & Energy Supply; Observation, Methods & Education). The educational program promotes both water and energy conservation through a hands-on curriculum using content approved by OUC that meets Common Core Standards. As part of an electric and water conservation and alternative sources educational program, the projects include making an aquifer, building a solar-powered car, and testing low-flow showerheads and compact fluorescent light bulbs (CFLs) against traditional fixtures. Project AWESOME, which launched in 2009, delivers two 90-minute classroom workshops (one per semester), as well as hands-on labs and pre- and post-classroom activities. Energy is covered as part of the earth science section that's taught in the fall semester while water is the focus of the spring semester's life science section. Due to COVID and schools turning to virtual learning in early 2020, Project AWESOME workshops shifted to online. The lessons were made available to teachers in the form of a voiced-over PowerPoint. Each lesson included science content, discussion questions and an activity for students to complete. In 2021, OSC shifted back into the classrooms but continues to offer a virtual option to all the teachers for convenience and accessibility. Since 2009, more than 136,000 students have gone through the curriculum.

3.5.1.4 Strategic Partnerships Promote Awareness

OUC has leveraged highly visible, professional sports partnerships to highlight OUC's commitment to sustainability and high-impact economic development efforts.

After assisting with energy and water efficiency features in the design phase of the Orlando Magic's LEED-certified home, the Kia Center (formerly known as the Amway Center), OUC promoted the facility's LEED certification and its energy and water efficiency features through highly visible educational signage and on-going digital media. In 2020, OUC partnered with the Magic for the OUC Community Assist Program: for every assist a Magic player made in the 2019-2020 season, OUC committed to donating a tree to the Central Florida community. This activation was originally planned to take place at the Central Florida Earth Day Festival in April, but it was transitioned to a drive-up event due to COVID 19. Since 2019, the OUC Community Assist Program has provided more than 3,000 trees to the Central Florida community.

The Magic partnership served as a model for OUC's agreement with the United States Tennis Association (USTA). The new Home of American Tennis in Lake Nona meets LEED certification standards. OUC is exclusively designated as the "Official Sustainability & Utility Sponsor" and displays savings that can be achieved through initiatives such as EV charging stations, hydration stations, mobile device charging stations and solar arrays on the roofs of shade pavilions. It's estimated the facility has brought more than 150 high-wage jobs to the community, hosting more than 250 events and attracting 400,000 unique visitors per year.

In 2015, OUC became the exclusive electric, water and sustainability utility partner for Orlando City Soccer Club. Within Inter&Co Stadium (formerly Exploria Stadium), the club's new MLS home, OUC branded all water fountains and showcases the savings that can be achieved through sustainability initiatives. Both permanent and transitional signage highlighting the energy and water efficiency features were incorporated into the facility along with OUC's role in helping it achieve LEED certification. In 2023, OUC provided and installed EV charging equipment at the site. In November 2020, OUC oversaw the installation of a soccer-ball shaped solar sculpture outside the stadium. "Gyration," which measures 9.5 feet wide by 14.5 feet tall, was designed by an 11-member University of Central Florida team of mechanical engineering, electrical engineering and art students who responded to an OUC challenge to conceptualize a sculpture that doubles as a source of clean energy. During daylight hours, the sculpture's photovoltaic modules generate electricity for OUC, producing 1,264 kilowatt hours (kWh) of electricity annually. At night, interior lighting illuminates some of Gyration's purple panels. With its clean energy production offsetting the conventionally generated power it consumes at night, Gyration yields net-zero carbon output.

3.5.1.5 OUC Empowerment Zone

OUC has a multi-year commitment to revitalizing one of the most economically disadvantaged zip codes in its territory, 32805. The Empowerment Zone program encourages broad-based economic prosperity and community support, ensures improved access to OUC programs and improves the overall health and wellness of the community. In short: OUC's Empowerment Zone seeks to build thriving communities by leveraging OUC's resources and partnerships to enhance three pillars: educational opportunities, sustainable housing, and health and wellness. Examples include:

- Virtual Tutoring Programs with ELEVATE Orlando, which OUC supported by donating a total of 20 laptops to two middle schools. OUC employees participated in weekly sessions tutoring ten students.
- In 2019, OUC employees raised $42,000 for New Image Youth Center (NIYC), as part OUC's annual workplace giving campaign, OUCares. NIYC works with at-risk students in grades K-12 in the Parramore community and provides academic support, social development, health and wellness programs and crisis intervention services. In addition, OUC donated 25 laptops to the New Image Youth Center to support their education assistance programs.
- OUC created a pre-apprenticeship program to meet the goals of creating career opportunities vs. job opportunities; prioritizing diversity, equity and inclusion; and raising median incomes for the community. This approach is helping to combat unemployment; increase livable wages; eliminate financial burdens on students; and provide a measurable impact. To date, OUC has sponsored three pre-apprenticeship cohorts. All 11 members of the inaugural class, who graduated in October 2021, landed full-time jobs paying more than $30,000 a year, plus benefits and paid apprenticeship training classes to help them with career advancement. Seven students graduated

from the 2022-23 program, with participants attending classes at PKZ and West Oaks Academy. The 2024 program includes 19 students.

- OUC is working with Career Source of Central Florida to provide opportunities for high school students to learn about careers in the utilities industry hosting site tours and providing speakers to assist in raising awareness of the utility industry as a potential employer.
- OUC partnered with the Central Florida Housing Trust - Parramore Asset Stabilization Fund on an affordable housing project. OUC's contribution to the initiative included improving the efficiency of 83 residential units, with such upgrades as attic insulation and weather stripping, duct work repair, irrigation improvements, LED lighting, Energy Star® windows, hybrid water heaters and energy efficient AC systems. Residents of these homes realized annual utility savings of approximately $575 annually.
- OUC also is developing cost-saving programs and providing conservation education through neighborhood advisory councils. OUC partnered with LIFT Orlando, a local nonprofit, to help revitalize the City of Orlando's Lake Lorna Doone Park, which is in the Empowerment Zone. OUC's is sponsoring the recently built 4,800-square-foot OUC Solar Pavilion at Lake Lorna Doone Park and EV charging stations and hydration stations in the park. The pavilion will serve as a hub for community events and activities while providing 42kWac of renewable energy.
- With the goal of inspiring young and old residents to read books, OUC and community partners set up nine Little Free Libraries in the Parramore neighborhood since May of 2021. Painted by OUC volunteers, each Little Free Library resembles a miniature wooden house with a pitched roof and glass door that opens to two shelves of books, two dozen or so in all. To date more than 2,000 books have been distributed across the nine libraries.
- Recognizing that personal health and wellness are critical to community revitalization, OUC has undertaken a number of initiatives to improve health and wellness in the Parramore Empowerment Zone. Working with Shepherd's Hope, OUC sponsors the HEAL program – promoting healthy eating and an active lifestyle with focus on topics from obesity and mental health to cardiovascular risks and nutrition. Average attendance of 33 senior citizens and 27 high school students was observed in sessions held in 2022 and 2023. Activities including distribution of more than 3,600 pieces of educational material and 252 bags of fresh food, along with completion of 15 home energy audits, resulted from the HEAL program. Additionally, attendees were connected with Shepherd's Hope who offer free healthcare and condition management programs as part of their mission.

3.5.2 Connecting with Our Customers

From providing better online access to their consumption history to designing convenient and effective conservation programs, OUC arms customers with the information and tools they need to optimize the efficiency of their homes and businesses. This includes the community outreach previously discussed in this report as well as a mix of new technologies and programs designed to provide customers with the information, control and options they desire.

3.5.2.1 Self-Service Options

OUC's informational website, self-service portal and automated phone system are transacted with millions of times each year by many customers.

Customers are able to find tips, videos on ways to save, and frequently asked questions regarding their services. Through their myOUC online profile, they are able to pay their bills, make service requests, request payment extensions and more. The Usage Dashboard and OUC Power Pass program continue to drive adoption of the website. The site is mobile friendly and accessible from a range of devices including tablets and smartphones.

3.5.2.2 Traditional Media and Digital Outreach

To reach the desired audience, OUC implements comprehensive, integrated media campaigns that utilize print, online, television, radio, social, outdoor media and community partnerships. By diversifying and targeting media, OUC can effectively reach the right customer with the right message. Campaigns cover a range of topics, from safety to storm prep to sustainability. These campaigns reinforce OUC's commitment to showing customers how to reduce their energy and water use and ultimately their utility bills while promoting programs and initiatives important to the community.

In 2020 as our customers spent more time in their homes as a result of the COVID-19 pandemic, OUC focused on conservation education and cost-saving measures to help them better manage their energy and water usage. One way of doing this was offering virtual energy/water efficiency audits over the telephone, with OUC conservation specialists reviewing customers' consumption patterns with the intention to find unusual activity, such as high-water usage possibly due to a leak, which could be corrected. Conservation specialists also conducted on-site efficiency audits from outside homes while talking via their mobile phone with customers. The OUC.com/HighBillSolutions webpage was created and shared numerous times with customers to raise awareness of and educate them on how to track daily energy usage, look for ways to save on their utility bills, schedule free home energy and water efficiency audits, and help them better understand the impact of having their families at home for an extended period of time. The page also contained links to information on OUC financial assistance and payment arrangements/plans.

3.5.2.3 Connections

Connections is a monthly newsletter sent to all OUC customers whether they receive a paper statement or e-bill. The newsletters are posted on www.OUC.com and feature OUC's programs, community events, sustainability initiatives, and energy- and water-saving tips.

3.5.2.4 OUC Blog

In 2019, OUC launched a blog called OUConnect (www.oucblog.com). On OUConnect, customers can learn ways to save energy, water and money and how OUC is creating innovative products and services to meet the ever-growing needs of Central Florida. Customers will also read articles about community initiatives, as well as profiles on employees making a difference both at work and in their hometowns.

3.5.2.5 OUConnect E Newsletter

In April 2019, OUC launched a monthly email newsletter to all residential and commercial customers with email addresses (170,000). This newsletter keeps customers informed and connected to OUC's programs, products, provides conservation tips and more.

3.5.2.6 Social Media

Instagram, Facebook, X (formerly Twitter), YouTube, and NextDoor allow OUC to update customers about the Commission's community involvement, as well as provide them with conservation tips, outage and

restoration updates, and other need-to-know, real-time information that may affect them. Social media platforms also serve as additional customer service outlets, allowing customers to notify OUC about issues needing quick resolution, and provide additional opportunities for the Commission to build interactive relationships with customers and potentially diffuse negative situations.

3.5.2.7 Digital Meters

OUC's entire service area was upgraded with nearly 370,000 digital electric and water meters. The digital meters are easier to read and provide detailed information about customers' daily energy and water use. Meters can be monitored remotely, which reduces costs and time while ensuring an accurate and timely reading for the customer. Remote monitoring also allows OUC to better predict and prevent outages and restore power faster. OUC created Florida's first meter farm consisting of 120 electric meters and four water meters at its Pershing facility. The farm provides information and shows OUC exactly how updates are installed to ensure the meters are working correctly.

3.5.2.8 OUC Power Pass Program

OUC Power Pass is a program that allows customers to pay-as-you-go or pay in advance for utility services allowing the option of avoiding deposits, late fees and a monthly bill. Statistics have shown that pay-before-consumption programs result in less electricity and water usage because customers are more aware of how much they are using. Customers can check on their electric bill or water usage every day using the OUC Power Pass portal or receive alerts via text, email and/or phone. More than 19,000 customers are enrolled in the program to date.

3.5.2.9 Usage Dashboard

Digital meter technology allows customers to monitor electric consumption on an hourly basis and water on a daily basis instead of waiting until the end of the month to receive their bills. The ability to track usage patterns and adjust lower energy bills was one of the items most frequently requested by OUC customers. To accommodate their needs, OUC released the OUC Usage Dashboard to most residential customers through their myOUC online profile. Because the new system also provides high-consumption alerts via email, changes in usage can be made immediately, and costs can be kept in check.

3.5.2.10 Online Rebate Application

OUC is continuing the use of software through the next few years and implemented a new software solution for rebate processing in 2022. OUC provides an online rebate application tool for customers to apply for rebates without the hassle of paperwork. It offers more convenience for customers and reduces transaction time. Customers are able to access the tool through their myOUC online profile.

3.5.2.11 Project Momentum & PowerShift

OUC upgraded its customer information system from PeopleSoft Enterprise Risk Management to Customer Care & Billing to improve the quality experience for all levels of customers. OUC undertook this major initiative to lay the foundation for future enhancements and new technologies. This complex endeavor considered other affected systems such as Outage Management, Meter Data Management, Enterprise 1, Geographic Information System, the Web, and Interactive Voice Response. Begun in January 2015 and fully implemented in July 2017, Project Momentum required 200-plus employees from 17 OUC departments and partner contractors to understand and work through hundreds of business processes and thousands of data points. Delivering an improved quality experience for customers is a primary business goal.

In 2019, OUC launched a project to offer Time of Use (TOU) rates – internally known as PowerShift – to explore the viability of extending a new rate structure as an option for customers. The pilot formally ended in 2023. During an exploratory phase, OUC gauged interest from each customer segment and ultimately accepted 700 customers to participate in the pilot. Beginning in April 2021, the 700 pilot customers were billed utilizing On-Peak (2 p.m.-8 p.m.) and Off-Peak rates, the latter being the lowest, offering customers the opportunity to save on their monthly bills and to also smooth OUC's power demand curve. At the conclusion of the pilot, OUC offered participating customers the option to continue on the TOU rate. Of the initial 700 customers enrolled, 474 have chosen to remain in the program past the pilot phase. As part of the pilot, OUC created numerous marketing and communication materials to ensure customers are equipped with the tools and resources to be successful in the program. Feedback gathered via quarterly customer surveys helped shape the program messaging OUC is using data from these surveys, as well as other data points and metrics gathered during the pilot to determine the future of TOU rates.

3.5.2.12 Outage Alerts

OUC launched the first phase of its OUC Alerts program with Outage Alerts in December 2017. The system allows customers to receive information about service outages, including the cause and an estimated restoration time, via text, voice or email.

3.5.2.13 Billing Alerts

In January 2019, the second phase of OUC's Alerts program expanded to include Billing Alerts. The new feature lets customers set an alert, via text, email or voice, to let them know when their new bill is ready to view and when payment is due. This alert, along with Outage Alerts, launched in 2017, are among new "two-way communication" initiatives OUC has introduced to provide customers. Future OUC Alerts program phases to consider include consumption notifications and marketing messages.

3.5.3 Economic Development

Orlando has undergone a radical transformation over the years to diversify its economy and attract high-wage positions in technology, medicine, life sciences, and modeling and simulation. With Orlando's increasing emphasis on recruiting, retaining and expanding commercial customers, OUC has become a major player in the region's economic development. Working in partnership with Enterprise Florida, the Orlando Economic Partnership, and city and county governments, the utility is attracting more companies to Orlando and St. Cloud and helping them grow into vital and valuable members of the business community.

To attract large businesses that enhance the vitality of the community, OUC offers two rates. For large power users who qualify, OUC is able to negotiate its already-affordable rates to fit their business needs. The Economic Development Rider (EDR) is available to new or expanding businesses representing select target industries. Companies must add a minimum of 500 kW demand of new electric load and must create at least 25 new jobs at or above the 150 percent median income level to qualify. The Commercial Industrial Service Rider (CISR) is available to companies that have minimum load of 2,000 kW or greater, served by a single meter. Companies must provide validation of a lower rate offering outside OUC's service territory to qualify.

Details of these rates and other incentives are outlined at www.oucpowersgrowth.com – a website that assists site selectors and businesses seeking to locate and learn more about Orlando and OUC. The site includes property search functionality and is mobile friendly.

4.0 FORECAST OF PEAK DEMAND AND ENERGY CONSUMPTION

OUC prepares a set of sales, energy, and demand forecast models each year to support its budgeting and financial planning process as well as long-term planning requirements. In preparing the forecasts, OUC uses internal records, company knowledge of the service territory and customers, and economic projections. OUC draws on outside expertise as needed. IHS Markit Ltd provides economic projection data. Itron provides primary forecasting software, analysis of end-use equipment saturation and efficiencies, and technical expertise. In this forecast, the National Renewable Energy Laboratory was utilized to provide adoption curves used to project rooftop solar within OUC's service territory while the midpoint of multiple different industry electric vehicle curves was used to forecast electric vehicle sales.

4.1 Forecast Methodology

OUC has adopted a Statistically Adjusted Engineering (SAE) modeling technique developed by Itron. This approach entails specifying end-use variables (xHeat for heating, xCool for cooling, and xOther for other use) and utilizing these variables in multi-regression models to forecast sales. SAE variables allow anticipated shifts in customer end-use consumption driven by the type, saturation and efficiency of heating and cooling equipment, and other end-use devices to be represented along with econometric drivers and the effects of photovoltaic systems (PV) and electric vehicles (EV) in the forecast models. Itron reviews OUC's application of these techniques and provides data on heating, cooling, and other end-use load trends. These techniques are used to develop the forecasts for both the OUC and St. Cloud service territories.

4.1.1 Residential

The residential sales forecast consists of both a customer forecast model and an average use per customer model. Monthly average usage models were estimated using actual data for the period 2011 to 2023. This provides 13 years of historical data and enough observations to estimate strong regression models. Once models showing the number of expected customers and the expected average use per customer are developed, the projected residential sales by year (y) and month (m) are calculated as the product of the customer and average usage forecasts:

$$Sales_{y,m} = Customers_{y,m} \times Average\ Usage_{y,m}$$

4.1.1.1 Residential Customer Forecast

Residential customers are forecast as a function of household growth for Orange County for the OUC service territory and Osceola County for the St. Cloud service territory. There is a strong correlation between historical changes in customer counts and historical changes in households. The multi-regression model for residential customers is represented as:

$$Customers_{y,m} = \beta_0 + \beta_1(Households_{y,m})$$

The coefficients (β) are outputs of the multi-regression models.

4.1.1.2 Average Use Forecast

The residential forecast models utilize multi-regression modeling made up of three major components:

1. Changes in the economy, such as median household income, household size, and the price of electricity.
2. End-use equipment index variables, which capture the long-term net effect of equipment saturation and equipment efficiency improvements.
3. Weather variables, which serve to allocate the seasonal impacts of weather throughout the year.

The SAE model framework begins by defining energy use for an average customer in year (y) and month (m) as the sum of energy used by heating equipment ($xHeat_{y,m}$), cooling equipment ($xCool_{y,m}$), and other equipment ($xOther_{y,m}$). The xHeat, xCool and xOther variables are defined as a product of an annual equipment index and a monthly usage multiplier. This model is represented as:

$$Average\ Usage_{y,m} = \beta_1(xHeat_{y,m}) + \beta_2(xCool_{y,m}) + \beta_3(xOther_{y,m})$$

Where:

$xHeat_{y,m}$ = $Economics_{y,m}$ x $HeatingEquipment_{y,m}$ x $HDD\_Index_{y,m}$

$xCool_{y,m}$ = $Economics_{y,m}$ x $CoolingEquipment_{y,m}$ x $CDD\_Index_{y,m}$

$xOther_{y,m}$ = $Economics_{y,m}$ x $OtherEquipment_{y,m}$

A customer's monthly usage level is impacted by several economic factors, including the price of electricity, household size, and household income in real dollars.

$$Economics_{y,m} = \left(\frac{Price_{y,m}}{Price_{base\ y}}\right)^{-0.165} \times \left(\frac{HH\ Size_{y,m}}{HH\ Size_{base\ y,m}}\right)^{0.2} \times \left(\frac{HH\ Income_{y,m}}{HH\ Income_{base\ y,m}}\right)^{0.22}$$

The annual equipment variables (HeatEquip, CoolEquip, OtherEquip) are defined as a weighted average across equipment types multiplied by equipment saturation levels normalized by operating efficiency levels.

$$HeatEquip_y = \sum_{tech} Weight \times \left(\frac{Saturation_y / Efficieny_y}{Saturation_{base\ y} / Efficieny_{base\ y}}\right)$$

$$CoolEquip_y = \sum_{tech} Weight \times \left(\frac{Saturation_y / Efficieny_y}{Saturation_{base\ y} / Efficieny_{base\ y}}\right)$$

$$OtherEquip_y = \sum_{tech} Weight \times \left(\frac{Saturation_y / Efficieny_y}{Saturation_{base\ y} / Efficieny_{base\ y}}\right)$$

The following degree day index variables serve to allocate the seasonal impacts of weather throughout the year. For historic periods, actual heating degree days ("HDD") and cooling degree days ("CDD") are used. Normal HDDs and CDDs are used for forecast periods.

$$HDD\_Index_{y,m} = \frac{HDD_{y,m}}{Normal\ HDD_y}$$

$$CDD\_Index_{y,m} = \frac{CDD_{y,m}}{Normal\ CDD_y}$$

4.1.2 Non-Residential

4.1.2.1 General Service Non-Demand (GSND)

The General Service Non-Demand (GSND) and General Service Demand Secondary (GSD Secondary) classes are modeled as a combined General Service Secondary class (GS Secondary) because the historic data indicates customer migration has occurred back and forth between the two classes. The result is a single model, which produces predicted values with a higher correlation than that of two separate models. The

forecast is later split between GSND and GSD Secondary using the monthly relationships between the two classes in the most recent year of actual data.

The framework for the GS secondary class sales forecast is similar to the residential class sales forecast except modeled on a total sales basis instead of by average use. It also has three major components and utilizes the SAE model framework. The end-use equipment variables are based on commercial appliance and equipment saturation and efficiency projections. The economic drivers in the model are the commercial price of electricity and Orlando Standard Metropolitan Statistical Area (SMSA) Gross Metro Product in real dollars. The third component is the weather variable, which is entirely composed of CDDs. HDDs are not used in the GS Secondary model because no statistically valid correlation between HDDs and sales could be identified. The xCool and xOther variables used in the GS secondary forecast use the same methodology as the residential forecast but with different economic assumptions.

The GS Secondary sales model is represented as:

$$Sales_{y,m} = \beta_1(xCool_{y,m}) + \beta_2(xOther_{y,m})$$

GS secondary customers are forecast as a function of population for Orange County for the OUC service territory and Osceola County for the St. Cloud service territory. There is a strong correlation between historical changes in customer counts and historical changes in the Orange County population. St. Cloud historical customers also correlates well with the Osceola County population.

The GS Secondary customer model is represented as:

$$Customers_{y,m} = \beta_0 + \beta_1(Population_{y,m})$$

4.1.2.2 General Service Demand (GSD)

Forecast sales to GSD Secondary customers were modeled as discussed above. In addition to the customers taking service at secondary voltage, OUC serves 22 customers (excluding 5 OUC water plants) at primary voltage. These primary customers are forecasted as a whole on a total sales basis similar to the GSD secondary forecast.

Sales from the various GSD models are summed to complete the GSD forecast.

4.1.2.3 Streetlights

Private and public lighting consumption is forecast separately. Both classes are not impacted by the weather, and the SAE modeling approach does not apply. Therefore, simple exponential smoothing models are used to generate both forecasts. The forecast for private streetlights includes a linear trend to capture the historic organic growth that is expected to continue within the forecast period. The forecast for public streetlights does not include a linear trend as any growth in the number of lights has been offset by the replacement of traditional HPS and MH fixtures with LED fixtures.

4.1.2.4 OUC Use

OUC Use sales are those to OUC Water Plants, OUCooling Plants, and OUC facilities. The OUC Use models utilize CDDs, but not HDDs or the factors included in the "Other" SAE modeling variable.

4.1.3 Net Energy for Load ("NEL") and Peak Demand Forecast

The individual OUC and St. Cloud net energy for load forecasts are generated based on the respective sales forecasts described above and the historic relationship between actual monthly sales and NEL. Peak demand forecasts are then developed for each system based on the forecast NEL and the historic relationship between NEL, peak demand and daily weather.

4.2 Base-Case Forecast Assumptions

Incorporated into the forecast regression models are sets of underlying economic and demographic, price of electricity, and weather assumptions.

4.2.1 Economics & Demographics

The economic and demographic assumptions are derived from forecasts for Orange County, Osceola County, and the Orlando SMSA provided by IHS Markit Ltd.

4.2.1.1 Median Household Income

The residential sales forecast models use Median Household Income in real dollars, as shown in Table 4-1.

4.2.1.2 Gross Metro Product

The commercial average usage forecast models use Gross Metro Product in real dollars, as shown in Table 4-1.

4.2.1.3 Households and Population

The residential and commercial customer forecast models use households and population, respectively. The primary demographic drivers in the residential average usage forecast models are the number of households and the population (see Table 4-1). The population data is divided by the household data to determine household size used in the residential average usage forecast models.

4.2.2 Price of Electricity

Any anticipated changes to prices in the near term are reflected in the nominal price of electricity by customer class. Longer term, the price is expected to increase at the same rate as inflation resulting in essentially no change to the real price of electricity. The real price of electricity by customer class is used in the residential and commercial forecast models.

Table 4-1 Economic & Demographic Projections

Year	Orlando SMSA Median Household Income[1]	Orlando SMSA Gross Metro Product ($ Billions)[2]	Orange County (Thousands)		Osceola County (Thousands)	
			Households	Population	Households	Population
2024	$54,250	$177.8	579.4	1,506.6	162.8	461.6
2029	$55,527	$199.7	616.1	1,615.8	188.2	540.3
2033	$56,351	$217.2	658.6	1,713.8	208.6	596.2
Average Annual Increase						
24 - 29	0.5%	2.4%	1.2%	1.4%	2.9%	3.2%
24 - 33	0.4%	2.2%	1.4%	1.4%	2.8%	2.9%
(1) 2009 dollars (2) 2017 dollars						

4.2.3 Weather

Weather is a key factor affecting electricity consumption for indoor cooling and heating. Monthly CDDs are used to capture electric cooling load requirements while HDDs are used to capture electric heating load requirements. CDDs and HDDs are calculated from the daily average temperatures as reported by the National

Weather Service for the weather station at the Orlando International Airport. CDDs are calculated using a 65°F base temperature as follows:

$$CDD_d = (Avg\ Temp_d - 65°F)\ when\ Avg\ Temp_d \geq 65°F$$

The daily CDD values are then aggregated to yield monthly CDDs for each year as follows:

$$CDD_{y,m} = \sum CDD_{y,m,d}$$

Daily HDD values are calculated in a similar manner using a base temperature of 65°F as follows:

$$HDD_d = (65°F - Avg\ Temp_d)\ when\ Avg\ Temp_d \leq 65°F$$

The daily HDD values are then aggregated to yield monthly HDDs for each year as follows:

$$HDD_{y,m} = \sum HDD_{y,m,d}$$

Due to historic weather trending warmer that escalation was continued to the forecast period in order to come up with "Normal" monthly weather with CDDs increasing and HDD decreasing annually over the forecast period.

4.3 Base-Case Load Forecast

A long-term annual base-case forecast was developed using the methodology and assumptions outlined above.

4.3.1 Customer and Sales Forecast Results

Total customers and retail sales for OUC and St. Cloud are expected to increase as shown in Table 4-2 through Table 4-5.

4.3.1.1 Residential Forecast

Increasing average usage per residential customer due to electric vehicle adoption is projected to be mitigated by increased appliance efficiency, increased customer conservation, increased penetration of rooftop solar, and declining household size, resulting in a slight increase in average usage per residential customer over the forecast period 2024 through 2033. Residential sales are projected to grow for OUC at an average annual rate of 3.0 percent and 3.5 percent in St. Cloud over this same period. The number of residential customers is projected to grow at an average annual rate of 1.5 percent for OUC and 3.0 percent for St. Cloud over this same period.

4.3.1.2 GSND Forecast

GSND is comprised of small commercial customers. GSND sales are projected to grow at an average annual rate of 1.2 percent and 1.9 percent for OUC and St. Cloud, respectively, between 2024 and 2033. The number of GSND customers is projected to grow at an average annual rate of 0.5 percent and 3.0 percent, respectively, for OUC and St. Cloud over this same period.

4.3.1.3 GSD Forecast

GSD is comprised of large commercial and industrial customers. Sales are projected to grow at an average annual rate of 1.9 percent and 1.9 percent for OUC and St. Cloud, respectively, between 2024 and 2033. The number of GSD customers is projected to grow at an average annual rate of 0.5 percent and 3.0 percent, respectively, for OUC and St. Cloud over this same period.

Table 4-2 OUC Long-Term Sales Forecast (GWh)

Year	Residential	GSND	GSD	Lighting	OUC Use	Total Retail
2024	2,136	440	3,387	59	141	6,163
2029	2,454	465	3,775	60	197	6,951
2033	2,794	489	4,010	61	201	7,555
Average Annual Increase						
24 - 29	2.8%	1.1%	2.2%	0.3%	6.9%	2.4%
24 - 33	3.0%	1.2%	1.9%	0.4%	4.0%	2.3%

Table 4-3 OUC Average Number of Customers Forecast

Year	Residential	GSND	GSD	Total Retail
2024	197,257	24,088	4,739	226,084
2029	212,676	24,860	4,891	242,427
2033	225,841	25,290	4,975	256,106
Average Annual Increase				
24 - 29	1.5%	0.6%	0.6%	1.4%
24 - 33	1.5%	0.5%	0.5%	1.4%

Table 4-4 St. Cloud Long-Term Sales Forecast (GWh)

Year	Residential	GSND	GSD	Lighting	Total Retail
2024	641	60	167	3	871
2029	757	66	185	3	1,011
2033	875	71	198	3	1,147
Average Annual Increase					
24 - 29	3.4%	1.9%	2.1%	0.0%	3.0%
24 - 33	3.5%	1.9%	1.9%	0.0%	3.1%

Table 4-5 St. Cloud Average Number of Customers Forecast

Year	Residential	GSND	GSD	Total Retail
2024	50,031	4,339	373	54,743
2029	58,377	5,076	436	63,889
2033	65,097	5,663	486	71,246
Average Annual Increase				
24 - 29	3.1%	3.2%	3.2%	3.1%
24 - 33	3.0%	3.0%	3.0%	3.0%

4.3.2 Forecast Hourly Peak Demand and NEL

Peak demand growth is driven by the aggregate retail load forecasts for OUC and St. Cloud. Seasonal hourly peaks and annual NEL are presented for OUC and St. Cloud in Tables 4-6 and 4-7, respectively. Table 4-8 represents the combined seasonal coincident hourly peak demand and NEL forecasts for OUC and St. Cloud.

Table 4-6 OUC Forecast Hourly Peak Demand (Summer and Winter) and NEL

Year	Summer (MW)	Winter (MW)	NEL (GWh)
2024	1,228	968	6,260
2029	1,375	1,116	7,062
2033	1,502	1,290	7,676
Average Annual Increase			
24 - 29	2.3%	2.9%	2.4%
24 - 33	2.3%	3.2%	2.3%

Table 4-7 St. Cloud Forecast Hourly Peak Demand (Summer and Winter) and NEL

Year	Summer (MW)	Winter (MW)	NEL (GWh)
2024	242	198	1,001
2029	295	242	1,162
2033	348	288	1,318
Average Annual Increase			
24 - 29	4.0%	4.1%	3.0%
24 - 33	4.1%	4.3%	3.1%

Table 4-8 System Forecast Coincident Hourly Peak Demand (Summer and Winter) and NEL (Total of OUC and St. Cloud)

Year	Summer (MW)	Winter (MW)	NEL (GWh)
2024	1,465	1,160	7,261
2029	1,660	1,345	8,224
2033	1,844	1,578	8,994
Average Annual Increase			
24 - 29	2.5%	3.0%	2.5%
24 - 33	2.6%	3.5%	2.4%

4.4 High and Low Load Scenarios

In addition to the base-case, two long-term forecast scenarios representing a high and low range around the forecast peak demand and NEL were constructed to test for sensitivity of uncertain economic conditions and customer growth. Weather conditions deviating from normal were not included in sensitivity testing due to non-growth-related impacts and an equal probability of affecting any given year either negatively or positively. The high and low load scenarios represent alternatives to the base-case forecast and are defined by 0.5 percent higher and 0.5 percent lower economic growth rates, respectively. Table 4-9 represents a summary of the high and low load scenarios.

Table 4-9 High and Low Scenario System Forecast Peak Demand (Summer and Winter) and NEL (Total of OUC and St. Cloud)

High Load Scenario			
Year	**Summer (MW)**	**Winter (MW)**	**NEL (GWh)**
2024	1,469	1,161	7,279
2029	1,683	1,360	8,331
2033	1,884	1,606	9,185
Average Annual Increase			
24 - 29	2.8%	3.2%	2.7%
24 - 33	2.8%	3.7%	2.6%
Low Load Scenario			
Year	Summer (MW)	Winter (MW)	NEL (GWh)
2024	1,461	1,158	7,243
2029	1,638	1,330	8,120
2033	1,806	1,551	8,814
Average Annual Increase			
24 - 29	2.3%	2.8%	2.3%
24 - 33	2.4%	3.3%	2.2%

5.0 DEMAND-SIDE MANAGEMENT

Sections 366.80 through 366.83, and 403.519, Florida Statutes (F.S.), are known collectively as the Florida Energy Efficiency and Conservation Act (FEECA). Section 366.82(2), F.S., requires the Florida Public Service Commission (PSC) to adopt appropriate goals designed to increase the conservation of expensive resources, such as petroleum fuels, to reduce and control the growth rates of electric consumption and weather-sensitive peak demand. Pursuant to Section 366.82(6), F.S., the PSC must review the conservation goals of each utility subject to FEECA at least every five years. The six utilities subject to FEECA are Florida Power & Light Company (FPL), Duke Energy Florida, LLC. (PEF), Tampa Electric Company (TECO), Florida Public Utilities Company (FPUC), OUC, and JEA (referred to collectively as the FEECA utilities).

OUC's residential and commercial/industrial numeric conservation goals for the 2021 through 2024 period were established by the PSC pursuant to Order No. PSC-2019-0509-FOF-EG. These PSC-established annual goals are presented in Tables 5-1, 5-2 and 5-3.

OUC committed to a 1 percent goal of energy efficiency as a percent of retail sales. This includes measures beyond those measured through FEECA. Because OUC must operationally plan to generate enough energy to meet demand at all times, and because OUC can incentivize but not control actual adoption, this forecast is being used for purposes of this 10-Year Site Plan.

Table 5-1 Residential DSM Goals Approved by the PSC

Calendar Year	Summer (MW)	Winter (MW)	Annual (GWh)
2020	0.21	0.21	0.77
2021	0.21	0.22	0.80
2022	0.19	0.20	0.72
2023	0.19	0.18	0.66
2024	0.16	0.16	0.57
Total	**0.96**	**0.97**	**3.52**

Table 5-2 Commercial/Industrial DSM Goals Approved by the PSC

Calendar Year	Summer (MW)	Winter (MW)	Annual (GWh)
2020	0.39	0.70	0.85
2021	0.40	0.78	0.86
2022	0.37	0.78	0.85
2023	0.39	0.74	0.82
2024	0.36	0.70	0.80
Total	**1.91**	**3.70**	**4.18**

Table 5-3 Total Residential and Commercial/Industrial DSM Goals Approved by the PSC

Calendar Year	Summer (MW)	Winter (MW)	Annual (GWh)
2020	0.60	0.91	1.62
2021	0.61	1.00	1.66
2022	0.56	0.98	1.56
2023	0.57	0.92	1.48
2024	0.52	0.86	1.37
Total	**2.86**	**4.67**	**7.69**

OUC has been increasingly emphasizing its DSM and conservation programs to increase customer awareness of such programs. Not only do these programs help customers save money by saving energy, the programs help OUC reduce emissions of greenhouse gases and better position OUC to meet possible future greenhouse gas regulations. It should be noted that government mandates have forced manufacturers to increase their efficiency standards, thereby decreasing the incremental amount of energy savings achievable, and the efficiency of new generation has increased. These appliances and generating unit efficiency improvements have mitigated to some degree the effectiveness of DSM and conservation programs, as overall efficiency increases in the marketplace partially offset the benefit of such programs.

The conservation programs included in OUC's 2020 DSM Plan (approved by the PSC on June 5, 2020) and currently offered to OUC's customers consist of the following:

- Residential Home Energy Survey Program – Walk-Through
- Residential Duct Repair Rebates Program
- Residential Ceiling Insulation Rebates Program
- Residential High-Performance Windows Rebate Program
- Residential Efficient Electric Heat Pump Rebates Program
- Residential New Home Rebates Program
- Residential Heat Pump Water Heater Rebates Program
- Residential Efficiency Delivered Program
- Commercial Energy Audit Program
- Commercial Efficient Electric Heat Pump Rebates Program
- Commercial Duct Repair Rebates Program
- Commercial Ceiling Insulation Rebates Program
- Commercial Cool/Reflective Roof Rebates Program
- Commercial Indoor Lighting Billed Solution Program
- Commercial Indoor Lighting Rebates Program
- Commercial Custom Incentives Program

The remainder of this section describes each of the DSM and conservation programs outlined above (Sections 5.1 and 5.2), as well as OUC's other DSM, conservation, and energy efficiency programs and activities not included in OUC's 2020 DSM Plan (Section 5.3). Incentives and rebate amounts included in the program descriptions are current as of the time this report was prepared. In addition to offering these programs, OUC continues to play an active role in promoting conservation through community relations as discussed in Section 2.4 and Section 3.6 of this Ten-Year Site Plan.

5.1 Energy Survey Programs

5.1.1 Residential Home Energy Survey Program

OUC has been offering home energy surveys dating back to the late 1970's. The home energy walk-through surveys were designed to provide residential customers with recommended energy efficiency measures and practices customers can implement and to encourage participation in various OUC rebate programs. The home energy surveys are available to both single family and multi-family residential customers.

The Residential Energy Walk-Through Survey includes a review of the customer electric consumption history as well as a walk-through review of the attic; heating, ventilation, and air conditioning (HVAC) system; air duct and air returns; window caulking; weather stripping around doors; faucets and toilets; and lawn sprinkler systems. OUC provides participating customers specific tips on conserving electricity and water as well as details on customer rebate programs. OUC Conservation Specialists are using this walk-through type audit as a means of motivating OUC customers to participate in other conservation programs and qualify for appropriate rebates.

One of the primary benefits of the Residential Home Energy Survey Program is the education it provides to customers on energy conservation measures and ways their lifestyle can directly affect their energy use. Customers participating in the Energy Survey Program are informed about their historical energy usage and conservation measures that they can implement. Customers will benefit from the increased efficiency in their homes, and decreased electric and water bills.

Participation is tracked through service orders that are produced when appointments are scheduled and completed.

5.1.2 Commercial Energy Audit Program

The Commercial/Industrial Energy Survey Program has been offered for several years and is focused on increasing the energy efficiency of commercial buildings and includes a free survey comprised of a physical walk-through inspection of the commercial facility performed by trained and experienced energy experts. The survey will include a pre-walkthrough review of historical energy usage as well as a walkthrough to examine heating and air conditioning systems including duct work, refrigeration equipment, lighting, water heating, motors, process equipment, and the thermal characteristics of the building including insulation. Following the inspection, the customer receives a written report detailing cost-effective recommendations to make the facility more energy and water efficient. Participating customers are encouraged to participate in other OUC commercial programs and directly benefit from energy conservation, which decreases their electric and water bills.

OUC customers can participate by calling the OUC Customer Service Call Center and requesting an appointment for a Walk-Through Energy Survey. Participation is tracked through service orders that are produced when appointments are scheduled and completed.

5.2 Rebate Programs

The following outlines the various rebate programs OUC offers to its customers. Customers can participate by submitting a rebate application online at http://www.OUC.com/rebates or via email, mail, in-person, or facsimile. Proofs of purchase and/or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically, these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

5.2.1 Residential Duct Repair Rebates Program

The residential Duct Repair Rebates Program originated in 2000 and is designed to encourage customers to repair leaking ducts on existing systems. Qualifying customers must have an existing central air conditioning system of 5.5 tons or less and ducts must be sealed with mastic and fabric tape or any other Underwriters Laboratory (UL) approved duct tape. Participating customers receive a rebate for 100 percent of the cost of duct repairs on their homes, up to $100.

5.2.2 Residential Ceiling Insulation Rebates Program

The attic is the easiest place to add insulation and lower total energy costs throughout the seasons. The residential Ceiling Insulation Rebates Program has been offered for several years and is designed to encourage customers to upgrade their attic insulation. Participating customers receive $0.10 per square foot for upgrading their attic insulation to R-30 or higher. The program applies to conditioned areas only.

5.2.3 Residential High-Performance Window Rebates Program

Energy-efficient windows can help minimize heating, cooling, and lighting costs. The residential High-Performance Windows Rebates program has been offered for several years and is designed to encourage customers to install windows that improve energy efficiency in their homes. Customers will receive a $1.50 rebate per square foot for the purchase of ENERGY STAR® rated energy efficiency windows.

5.2.4 Residential Efficient Electric Heat Pump Rebates Program

The residential Efficient Electric Heat Pump Rebates Program provides rebates to qualifying customers in existing homes who install heat pumps having a seasonal energy efficiency ratio (SEER) of 15.0 or higher for systems installed before April 1, 2023 or a (SEER2) of 15.2 or higher for systems installed after April 1, 2023. Customers will obtain a rebate in the form of a credit on their bill ranging up to $1,630, depending upon the SEER/SEER2 rating and capacity (tons) of the new heat pump. The following tables illustrate the incentives available depending on the size and efficiency of the Heat Pump installed.

(Table represents rebates for systems installed before April 1, 2023)

	SEER	15	16	17	18	19	20	21	22	23
A / C Size (Tons)	1	$ 5	$ 55	$ 95	$ 135	$ 170	$ 205	$ 230	$ 260	$ 280
	1 1/2	30	105	175	230	285	330	375	415	450
	2	60	160	250	325	400	460	520	570	620
	2 1/2	90	215	325	425	510	590	660	725	785
	3	115	270	400	520	625	720	805	885	955
	3 1/2	145	320	475	615	740	850	950	1,040	1,125
	4	175	375	550	710	850	975	1,090	1,195	1,290
	4 1/2	205	430	630	805	965	1,105	1,235	1,355	1,460
	5	230	485	705	900	1,075	1,235	1,380	1,510	1,630

(Table represents rebates for systems installed after April 1, 2023)

	SEER 2	15.2 - 15.99	16.0 - 16.99	17.0 - 17.99	18.0 - 18.99	19.0 - 19.99	20.0 - 20.99	21.0 - 21.99	22.0 - 22.99
AC Size (Tons)	1	-	-	$ 55	$ 85	$ 115	$ 140	$ 165	$ 185
	1.5	-	55	110	155	200	240	275	305
	2	-	90	165	230	285	340	385	425
	2.5	45	130	220	300	370	435	495	550
	3	65	165	275	370	455	535	605	670
	3.5	90	200	330	440	540	635	715	790
	4	110	235	385	510	625	730	825	910
	5	150	310	490	655	795	925	1,045	1,150

5.2.5 Residential New Home Rebates Program

What was previously named the Residential Gold Ring Home Program has been transformed into a more flexible "a la carte" program offering a variety of choices for the builder or home buyer and has been renamed the New Home Rebates program. This transformation was based on feedback OUC received from the residential building community in order to increase the level of participation in OUC's program. The table below reflects an example of the incentives available.

Rebate	**Rate of Rebate**	**Square Footage**	**Total**
Ceiling Insulation Upgrade to R-38 or higher	$0.03/sq. ft.	2,000	$60
Heat Pump*	Up to $1,630	N/A	$1,630
Energy Star® Heat Pump Water Heater	$500	N/A	$500
Solar Water Heater	$900	N/A	$900
(*) Up to $1,630 for SEER before April 1, 2023; up to $1,150 for SEER2 after April 1, 2023			

5.2.6 Residential Heat Pump Water Heater Rebates Program

Commonly referred to as hybrid electric heat pump water heaters, such water heaters with a coefficient of performance (COP) of greater than 2.0 can cut water heating electric use and costs by more than half. OUC's Heat Pump Water Heater Rebates program provides rebates for the heat pumps for qualifying installations. The contractor and/or retailer's invoice is required to receive this rebate and must reflect the system model number. If the receipt does not include the model number, a copy of the retailer's item description of product installed should be submitted that can be matched to the proof of purchase. OUC's rebate is $500.

5.2.7 Residential Efficiency Delivered Program

What was once referred to as the Home Energy Fix-Up Program has been revamped and expanded to allow for any OUC customer (energy, water, or both energy and water) to participate and renamed the Efficiency Delivered program. The program is available to residential customers (single family homes) and provides up to $2,500 of energy and water efficiency upgrades based on the needs of the customer's home. A Conservation Specialist from OUC performs a survey at the home and determines which home

improvements have the potential of saving the customer the most money. The program is an income-based program which is the basis for how much OUC will help contribute toward the cost of improvements and consists of three household income tiers:

Household Income	OUC Contribution
Less than $40,000	85% (not to exceed $2,125)
$40,001–$60,000	50% (not to exceed $1,250)
Greater than $60,000	Rebates only

- $40,000 or less OUC will contribute 85 percent of the total cost (not to exceed $2,125),
- $40,001 to $60,000 OUC will contribute 50 percent of the total cost (not to exceed $1,250),
- Greater than $60,000 OUC will contribute the rebate incentives that apply toward the total cost.

Each customer must request and complete a free Residential Energy Survey. Ordinarily, Energy Survey recommendations require a customer to spend money replacing or adding energy conservation measures: however, customers may not have the discretionary income to implement these measures (especially those in the lower income tier). Under this program, OUC will arrange for a licensed, approved contractor to perform the necessary repairs based on a negotiated and contracted rate. The remaining portion of the cost the customer is responsible for can be paid directly to OUC or over an interest-free 24-month period on the participant's monthly electric bill.

To be eligible for this program, the customer's account must be in good credit standing with the exception of low-income customers, who are only required to have a current balance that is not delinquent. Some of the improvements covered under this program are included in the table below:

Air conditioner tune-up	Thermostat replacement	Minor plumbing repairs
Air filter replacement	Duct leak repairs	Toilet replacement
Attic insulation	Evaporator coil cleaning	Water flow restrictors
Window film insulation	Hot water pipe and air conditioner refrigerant line insulation	Blower Door Testing
Caulking and weatherstripping	Irrigation repairs	Attic stair insulation cover

The purpose of the program is to reduce energy and water costs, especially for low-income households, particularly those households with elderly persons, disabled persons and children. Through this program, OUC helps to lower the bills of customers who may have difficulty paying their bills, thereby decreasing the potential for costly service disconnect fees and late charges. OUC believes that this program will help customers afford other essential living expenses. For others, this program offers a one-stop-shop to facilitate the implementation of a whole suite of conservation measures at reasonable costs and pre-screened qualified contractors.

5.2.8 Commercial Efficient Electric Heat Pump Rebates Program

The commercial Efficient Electric Heat Pump Rebates Program provides rebates to qualifying customers in existing buildings who install heat pumps having a seasonal energy efficiency ratio (SEER) of 15.0 or

higher for systems installed before April 1, 2023 or a (SEER2) of 15.2 or higher for systems installed after April 1, 2023. Customers will obtain a rebate in the form of a credit on their bill ranging up to $1,630, depending upon the SEER rating and capacity (tons) of the new heat pump. The following table illustrates the incentives available depending on the size and efficiency of the heat pump installed.

(Table represents rebates for systems installed before April 1, 2023)

	SEER	15	16	17	18	19	20	21	22	23
A / C Size (Tons)	1	$ 5	$ 55	$ 95	$ 135	$ 170	$ 205	$ 230	$ 260	$ 280
	1 1/2	30	105	175	230	285	330	375	415	450
	2	60	160	250	325	400	460	520	570	620
	2 1/2	90	215	325	425	510	590	660	725	785
	3	115	270	400	520	625	720	805	885	955
	3 1/2	145	320	475	615	740	850	950	1,040	1,125
	4	175	375	550	710	850	975	1,090	1,195	1,290
	4 1/2	205	430	630	805	965	1,105	1,235	1,355	1,460
	5	230	485	705	900	1,075	1,235	1,380	1,510	1,630

(Table represents rebates for systems installed after April 1, 2023)

	SEER 2	15.2 - 15.99	16.0 - 16.99	17.0 - 17.99	18.0 - 18.99	19.0 - 19.99	20.0 - 20.99	21.0 - 21.99	22.0 - 22.99
AC Size (Tons)	1	-	-	$ 55	$ 85	$ 115	$ 140	$ 165	$ 185
	1.5	-	55	110	155	200	240	275	305
	2	-	90	165	230	285	340	385	425
	2.5	45	130	220	300	370	435	495	550
	3	65	165	275	370	455	535	605	670
	3.5	90	200	330	440	540	635	715	790
	4	110	235	385	510	625	730	825	910
	5	150	310	490	655	795	925	1,045	1,150

5.2.9 Commercial Duct Repair Rebates Program

The commercial Duct Repair Rebates program started in 2009. OUC will rebate 100 percent of cost, up to $100. Qualifying customers must have an existing central air conditioning system of 5.5 tons or less and ducts must be sealed with mastic and fabric tape or Underwriters Laboratory (UL) approved duct tape.

5.2.10 Commercial Ceiling Insulation Rebates Program

The commercial Ceiling Insulation Rebates Program started in 2009 and was designed to increase a building's resistance to heat loss and gain. Participating customers receive $0.10 per square foot, for upgrading their attic insulation to R-30 or higher.

5.2.11 Commercial Cool/Reflective Roof Rebates Program

The commercial Cool/Reflective Roof Rebates Program started in 2009 and was designed to reflect the sun's rays and lower roof surface temperature while increasing the lifespan of the roof. OUC will rebate customers at $0.12 per square foot for ENERGY STAR® cool/reflective roofing that has an initial solar reflectance greater than or equal to 0.70.

5.2.12 Commercial Indoor Lighting Billed Solution Program

Converting old indoor lights to new lighting technologies is one of the most cost-effective improvements that a commercial customer can make. For some, the lack of capital or budget planning can be major barriers to making cost-effective investments. Since 2002, OUC's commercial Indoor Lighting program has assisted commercial customers with these investments through OUC's commercial Indoor Lighting Billed Solution program. Through a competitive RFP process, OUC selected a qualified lighting contractor to work with customers to develop proposals. Customers enter into an agreement with OUC to pay back the cost of the project based on the expected savings through monthly charges applied to their bill. Basically, it is a cash-flow neutral billed solution where the monthly savings pay for the project's cost over the pay-back period or term. The term cannot exceed five years.

5.2.13 Commercial Indoor Lighting Rebates Program

Commercial customers that upgrade the efficiency of their indoor lighting may be eligible to receive a rebate of $250/kW through the commercial Indoor Lighting Rebates program. Participation is open to facilities located within OUC's service area that receive electric service under an OUC commercial rate. Participants or customers may be any of the following:

- Individual customers who install more efficient lighting in their own facilities.
- National or local companies that install more efficient lighting.
- Local contractors, design/build firms, architectural and engineering firms, and commercial property developers working on behalf of OUC commercial customers.

5.2.14 Commercial Custom Incentive Program

Through the commercial Custom Incentive program, commercial customers receive incentives based on the reduction in peak demand their projects achieve plus the first-year energy savings. Energy and demand saving incentives are paid for the maximum one-hour average demand reduction that occurs during the Summer Demand period defined as weekdays, between 1 P.M. to 6 P.M., from April through October. Pre- and post-inspections are required. Incentives and other program considerations are summarized below.

- $550 per kW reduction incentive and/or energy reduction measures at $0.032 per kWh will also be incentivized.
- $250 per kW reduction incentive for all lighting measures.
- Incentives shall not exceed 50% of project cost.
- Incentives may be paid at 50% on project completion and remainder at one year depending on performance results.
- All incentives will be paid as a credit appearing on the customer's OUC statement.
- Simple return on investment must be greater than 2 years.
- Energy and demand conservation measure should have a useful life of at least 10 years.
- A maximum incentive of $100,000 per customer annually.

5.3 OUC's Additional DSM/EE/Conservation Programs and Activities

In addition to the residential and commercial programs previously discussed, OUC continues to do more to reduce energy consumption through supply-side initiatives, including:

- Conservation Voltage Reduction (CVR) - The Conservation Voltage Reduction (CVR) Project is made possible by OUC's investment in its Advanced Meter Infrastructure (AMI) and more

sophisticated distribution equipment. The availability of AMI customer load and voltage interval data provides an opportunity to optimize voltage control and thereby reduce energy consumption based on better awareness and monitoring of system conditions at customer service points. Benefits of CVR include conservation related reductions in customer energy usage and line losses (with associated reductions in fuel usage) and lower demands on generation resources. As of December 2023, OUC had 157 feeders of the total of 190 feeders under CVR control and savings of approximately 28,814,933 kWh annually.

- Power Plant Efficiency Improvements –OUC continues to make investments in improving the energy efficiency at its generation facilities. The energy reduction realized in 2023 due to these efficiency improvements totaled approximately 262,022,000 kWh.
- OUCooling Chilled Water District(s) Efficiency Improvements - OUCooling currently serves more than 200 customers and provides more than 61,000 tons of cooling. OUCooling's success has relied on the fact that OUCooling can deliver cooling more efficiently and less costly than what a customer would likely produce on their own. The way OUCooling succeeds is by investing in higher efficiency chillers and equipment and optimizes its operations on a continuous basis. The enhanced efficient operation of OUCooling is estimated to have saved approximately 32,413,886 kWh in 2023.

6.0 FORECAST OF FACILITIES REQUIREMENTS

6.1 Existing Capacity Resources

6.1.1 Existing Generating Capacity

OUC's installed generating capability for OUC and St. Cloud (as of date this Ten-Year Site Plan was prepared) is 1,590 MW in the winter and 1,553 MW in the summer. OUC's existing generating capability (described in more detail in Section 2.0) consists of the following:

- Joint ownership shares in the Stanton Energy Center Units 1, 2, and Stanton A
- Sole ownership of Stanton Energy Center Unit B (Stanton B)
- Joint ownership shares of the Indian River combustion turbine units
- Joint ownership share of St. Lucie Unit 2 Nuclear Generating Facility
- Sole ownership of the Osceola Generating Station

St. Cloud's entitlement to capacity from Stanton Unit 2 is included as generating capability in Tables 6-2 and 6-3, consistent with the Interlocal Agreement described in Section 2.0.

OUC is currently planning to place the Stanton Energy Center Unit 1 coal unit in cold shutdown by December 31, 2025.

6.1.2 Power Purchase Agreements

Corresponding to the construction of Stanton A, OUC entered into a PPA with SCF to purchase capacity from SCF's 65 percent ownership share of Stanton A. The original Stanton A PPA was for a term of 10 years and allowed OUC, KUA, and FMPA to purchase all of SCF's 65 percent capacity share. The utilities originally had options to extend the PPA beyond its initial term. OUC's Stanton A PPA has been extended through December 2031, and OUC has purchased an additional 87 MW from Stanton A through December 31, 2028. As discussed in Section 2, NextEra Energy has purchased SCF's interest in Stanton A.

As discussed in Section 2, OUC added 108.5 MWac of solar capacity (nameplate) in June 2020 through PPAs with NextEra, and will add 149 MWac of solar capacity (nameplate) in December 2024, also through PPAs with NextEra.

In 2020, OUC completed a comprehensive Electric Integrated Resource Plan (EIRP) to guide OUC through the next 30 years. Based on the results of the EIRP, OUC anticipates entering into PPAs for approximately 1,267 MWac of solar (nameplate) and 600 MWac of energy storage by 2033 as summarized in Table 6-1.

Table 6-1 Anticipated Solar PPAs

Commercial Operation Date	Nameplate Capacity (MWac) w/o Energy Storage	Energy Storage (MW)
December 2024	149	0
June 2027	149	100
June 2029	149	0
June 2030	149	0
June 2031	149	100
June 2032	149	150
June 2033	373	250

6.1.3 Power Sales Agreements

OUC's power sales to Lake Worth, Winter Park, Mt. Dora, Chattahoochee, and Lakeland Electric are described in Section 2.3.

6.1.4 Retirements and Modifications of Generating Facilities

As mentioned before, OUC currently plans to place Stanton Energy Center Unit 1 in cold shutdown by December of 2025. One factor affecting potential unit modifications and/or retirements is the impact of pending future environmental regulations. OUC will continue to monitor future environmental regulations that may impact its operating fleet and decisions related to generating units, and develop appropriate corresponding compliance plans.

OUC anticipates converting Stanton Unit 2 to no longer operate on coal and instead operate only on natural gas no later than 2027; OUC is in the process of determining the final timing of the natural gas conversion.

6.2 Reserve Margin Requirements

The FPSC has established a minimum planned reserve margin criterion of 15 percent in 25-6.035 (1) Florida Administrative Code for the purposes of sharing responsibility for grid reliability. The 15 percent minimum planned reserve margin criterion is generally consistent with practice throughout much of the industry. OUC has adopted the 15 percent minimum reserve margin requirement as its planning criterion.

6.3 Future Resource Needs

6.3.1 Generator Capabilities and Requirements Forecast

Tables 6-2 and 6-3 (presented at the end of this section) display the forecast reserve margins for the combined OUC and St. Cloud systems for the winter and summer seasons, respectively. OUC's capacity from renewable projects (discussed in Section 2.4) that is projected to be available at the time of peak demand is also reflected in Tables 6-2 and 6-3.

Table 6-2 and Table 6-3 indicate that OUC is projected to have adequate generating capacity to maintain the 15 percent reserve margin requirements through the period considered in this Ten-Year Site Plan (i.e. through 2033). As such, this Ten-Year Site Plan does not include any further new capacity additions, beyond the solar purchases, energy storage and Osceola Generating Station associated with OUC's EIRP and discussed throughout this Ten-Year Site Plan.

6.3.2 Transmission Capability and Requirements Forecast

OUC continuously monitors and upgrades the bulk power transmission system as necessary to provide reliable electric service to its customers. OUC's current transmission system planning criteria are summarized in its annual filing to the Federal Energy Regulatory Commission. Please see OUC's FERC Form 715 for additional information.

Table 6-2 Projected Winter Reserve Requirements – Base-Case

	Retail and Wholesale Peak Demand (MW)[1]							Available Capacity (MW)						Reserves (MW)		Excess/ (Deficit) Capacity to Maintain 15% Reserve Margin (MW)[7]
Year	OUC and STC	Mt. Dora	Chattahoochee	Lakeland	Lake Worth	Winter Park	Total	Installed[2][8]	SEC A PPA	Landfill Gas	Solar[3]	Energy Storage[3]	Total[4]	Required[5]	Available[6]	
2023/24	1,166	18	6	125	25	17	1,357	1,590	436	19	0	0	2,045	175	687	513
2024/25	1,206	19	6	0	25	17	1,273	1,590	436	19	0	0	2,045	181	772	591
2025/26	1,263	19	7	0	0	17	1,305	1,593	436	19	0	0	2,048	189	743	553
2026/27	1,301	19	7	0	0	0	1,327	1,593	436	19	0	0	2,048	195	721	526
2027/28	1,325	20	0	0	0	0	1,345	1,593	436	19	0	100	2,148	199	804	605
2028/29	1,358	20	0	0	0	0	1,378	1,593	349	19	0	100	2,061	204	683	480
2029/30	1,414	20	0	0	0	0	1,434	1,593	349	19	0	100	2,061	212	627	415
2030/31	1,485	0	0	0	0	0	1,485	1,593	349	19	0	100	2,061	223	576	354
2031/32	1,495	0	0	0	0	0	1,495	1,593	0	19	0	200	1,812	224	318	93
2032/33	1,578	0	0	0	0	0	1,578	1,593	0	19	0	350	1,962	237	384	148

(1). Peak Demands shown are non-coincident.
(2). Includes existing net capability to serve OUC and St. Cloud.
(3). Capacity of Solar reflects capacity projected to be available at time of seasonal peak demand, which is assumed to be 0% for winter and 100% of nameplate capacity of energy storage.
(4). "Totals" may not add due to rounding.
(5). "Required Reserves" include 15 percent reserve margin on OUC and St. Cloud retail peak demand. OUC is not responsible for providing reserves to Bartow, Winter Park, Mt. Dora, Chattahoochee, or Lakeland. Wholesale sale shown to Lake Worth includes reserves.
(6). "Available Reserves" equals the difference between total available capacity and total peak demand.
(7). Calculated as the difference between "Available Reserves" and "Required Reserves."
(8). Reflects anticipated dates by which the Osceola Generating Station Unit 1 and Unit 3 will be capable of delivering power to OUC following completion of necessary maintenance and transmission system improvements (summer of 2025). Osceola Generating Station Unit 2 is currently able to deliver power to OUC.

Table 6-3 Projected Summer Reserve Requirements – Base-Case

	Retail and Wholesale Peak Demand (MW)[1]							Available Capacity (MW)						Reserves (MW)		Excess/ (Deficit) Capacity to Maintain 15% Reserve Margin (MW)[7]
Year	OUC and STC	Mt. Dora	Chattahoochee	Lakeland	Lake Worth	Winter Park	Total	Installed[2][8]	SEC A PPA	Landfill Gas	Solar[3]	Energy Storage[3]	Total[4]	Required[5]	Available[6]	
2024	1,470	25	9	175	50	17	1,746	1,553	429	19	62	0	2,063	220	317	96
2025	1,537	26	9	0	50	17	1,638	1,867	429	19	137	0	2,451	231	813	582
2026	1,567	26	9	0	0	17	1,619	1,556	429	19	137	0	2,141	235	522	287
2027	1,598	27	9	0	0	0	1,634	1,556	429	19	211	100	2,315	240	681	442
2028	1,633	27	0	0	0	0	1,660	1,556	429	19	211	100	2,315	245	655	410
2029	1,669	27	0	0	0	0	1,697	1,556	342	19	286	100	2,303	250	606	355
2030	1,713	28	0	0	0	0	1,741	1,556	342	19	360	100	2,377	257	636	379
2031	1,757	0	0	0	0	0	1,757	1,556	342	19	435	200	2,552	263	795	532
2032	1,802	0	0	0	0	0	1,802	1,556	0	19	509	350	2,434	270	632	361
2033	1,850	0	0	0	0	0	1,850	1,556	0	19	696	600	2,871	277	1,021	744

(1). Peak Demands shown are non-coincident.
(2). Includes existing net capability to serve OUC and St. Cloud.
(3). Capacity of Solar reflects capacity projected to be available at time of seasonal peak demand, which is assumed to be 50% of nameplate capacity for summer solar without energy storage and 100% of nameplate capacity of energy storage.
(4). "Totals" may not add due to rounding.
(5). "Required Reserves" include 15 percent reserve margin on OUC and St. Cloud retail peak demand. OUC is not responsible for providing reserves to Bartow, Winter Park, Mt. Dora, Chattahoochee, or Lakeland. Wholesale sale shown to Lake Worth includes reserves.
(6). "Available Reserves" equals the difference between total available capacity and total peak demand.
(7). Calculated as the difference between "Available Reserves" and "Required Reserves."
(8). Reflects anticipated dates by which the Osceola Generating Station Unit 1 and Unit 3 will be capable of delivering power to OUC following completion of necessary maintenance and transmission system improvements (summer of 2025). Osceola Generating Station Unit 2 is currently able to deliver power to OUC.

7.0 SUPPLY-SIDE ALTERNATIVES

As discussed previously, consideration of OUC's current generating resources (including existing and planned PPAs) and OUC's current base-case load forecast indicates that OUC is projected to have adequate capacity to satisfy forecast reserve margin requirements through 2033 (the final year considered in this Ten-Year Site Plan). As such, no new capacity additions have been evaluated as part of this Ten-Year Site Plan, beyond the solar purchases, energy storage, and Osceola Generating Station units discussed throughout this Ten-Year Site Plan.

8.0 ECONOMIC EVALUATION CRITERIA AND METHODOLOGY

This section presents the economic evaluation criteria and methodology used for OUC's current planning processes.

8.1 Economic Parameters

The economic parameters are summarized below and are presented on an annual basis.

8.1.1 Inflation and Escalation Rates

The general inflation rate, construction cost escalation rate, fixed O&M escalation rate, and nonfuel variable O&M escalation rate are each assumed to be 2.0 percent.

8.1.2 Present Worth Discount Rate

The present worth discount rate is assumed to be 7.5 percent.

8.2 Fuel Price Forecasts

The natural gas and fuel oil price forecasts reflected in this Ten-Year Site Plan were developed based on a combination of the NYMEX forward curve and projections provided by PIRA Energy Group (PIRA). PIRA was founded in 1976 and is an international energy consulting firm specializing in global energy market analysis and intelligence. Among other services, PIRA offers consulting on a broad range of subjects in the international crude oil, petroleum products, natural gas, electricity, coal, biofuels and emissions markets. PIRA's clients include international and national integrated oil and gas companies, independent producers, refiners, marketers, oil and gas pipelines, electric and gas utilities, industrials, trading companies, financial institutions and government agencies.

The coal forecast reflected in this Ten-Year Site Plan was developed based on projections by Energy Ventures Analysis, Inc. (EVA) for use by OUC as well as recent offers from suppliers of Illinois Basin coal. EVA is a consulting firm that engages in a variety of projects for private and public sector clients related to energy and environmental issues. In the energy area, much of EVA's work is related to analysis of the electric utility industry and fuel markets, particularly oil, natural gas, and coal. EVA's clients in these areas include coal, oil, and natural gas producers; electric utility and industrial energy consumers; and gas pipelines and railroads. EVA also works for a number of public agencies, such as state regulatory commissions, the US EPA, and the US DOE, as well as interveners in utility rate proceedings, such as consumer counsels and municipalities. Another group of clients include trade and industry associations, such as the Electric Power Research Institute, the Gas Research Institute, and the Center for Energy and Economic Development. EVA has provided testimony to numerous state public utility commissions, including the Florida Public Service Commission. Furthermore, the firm has filed testimony in a number of cases in both state and federal courts, as well as before the Federal Energy Regulatory Commission.

9.0 ANALYSIS AND RESULTS

As discussed previously, consideration of OUC's existing generating resources (including existing and planned PPAs) and OUC's current base-case load forecast indicates that OUC is projected to have adequate capacity to satisfy forecast reserve margin requirements through 2033 (the final year considered in this Ten-Year Site Plan).

For informational purposes, OUC utilized PCI GenTrader to obtain the annual production costs associated for various load, fuel, and other sensitivity cases. GenTrader is a computer-based chronological production costing model developed for use in power supply system planning. GenTrader simulates the hour-by-hour operation of a power supply system over a specified planning period. Required inputs include the performance characteristics of generating units, fuel costs, and the system hourly load profile for each year.

The cumulative present worth cost (CPWC) calculations presented in this section account for annual system costs (i.e. fuel and energy, non-fuel variable O&M, and startup costs) for each year of the expansion planning period and discounts each back to 2024 at the present worth discount rate of 6.5 percent. These annual present worth costs are then summed over the 10-year forecast period to calculate the total CPWC of the expansion plan being considered.

9.1 CPWC Analyses

9.1.1 Base-Case Analysis

The base-case considers the base load forecast presented in Section 4 and the base fuel price forecasts. The CPWC associated with the base-case analysis is approximately $2.024 billion.

9.1.2 Sensitivity Analyses

As part of its capacity planning process, OUC considers a number of sensitivity analyses to measure the impact of variations to critical assumptions. Among the numerous sensitivities that OUC may consider in its planning processes are high and low fuel prices, high and low load and energy growth projections, a case in which the differential between natural gas and coal price projections is held constant over time, and a high present worth discount rate case. Of these sensitivities, only the high load and energy growth projection sensitivity would potentially impact the timing of unit additions as compared to the base-case analysis. For informational purposes, the following subsections describe the high and low load and energy growth, the high and low fuel price, the constant differential fuel price, and the high present worth discount rate sensitivities.

9.1.2.1 High Load Forecast Sensitivity

The high load forecast is presented in Section 4.0; as with the base-case load forecast, OUC is anticipated to have sufficient capacity to maintain its 15 percent reserve margin under the high load forecast sensitivity. The CPWC associated with the high load analysis is approximately $2.056 billion.

9.1.2.2 Low-Load Forecast Sensitivity

The low-load forecast is presented in Section 4.0; as with the base-case load forecast, OUC is anticipated to have sufficient capacity to maintain its 15 percent reserve margin under the low load forecast sensitivity. The CPWC associated with the low-load analysis is approximately $1.999 billion.

9.1.2.3 High Fuel Price Forecast Sensitivity

OUC's contractual arrangements for coal delivery will mitigate the effects of volatility in coal prices; however, for purposes of this analysis, this factor was not considered. The CPWC associated with the high natural gas and coal price forecast sensitivity is approximately $2.285 billion.

9.1.2.4 Low Fuel Price Forecast Sensitivity

OUC's contractual arrangements for coal delivery will mitigate the effects of volatility in coal prices; however, for purposes of this analysis, this factor was not considered. The CPWC associated with the low natural gas and coal price forecast sensitivity is approximately $1.721 billion.

9.1.2.5 Constant Differential Natural Gas and Coal Price Forecast Sensitivity

The constant differential natural gas and coal price forecast sensitivity assumes that differential in price between coal and natural gas projected for 2019 will remain constant through 2028. The CPWC associated with the constant differential natural gas and coal price forecast sensitivity is approximately $2.012 billion.

9.1.2.6 High Present Worth Discount Rate Sensitivity

The high present worth discount rate sensitivity assumes a 10 percent present worth discount rate instead of the 6.5 percent present worth discount rate used in the other economic analyses discussed in this section. The CPWC associated with the high present worth discount rate sensitivity is approximately $1.829 billion.

10.0 ENVIRONMENTAL AND LAND USE INFORMATION

As discussed previously, consideration of OUC's current generating resources (including existing and planned PPAs) and OUC's current base-case load forecast indicates that OUC is projected to have adequate capacity to satisfy forecast reserve margin requirements through 2033 (the final year considered in this Ten-Year Site Plan).

11.0 CONCLUSIONS

As discussed previously, consideration of OUC's current generating resources (including existing, future generation and planned PPAs) and OUC's current base-case load forecast indicates that OUC is projected to have adequate capacity to satisfy forecast reserve margin requirements through 2033 (the final year considered in this Ten-Year Site Plan).

In 2020, OUC completed a comprehensive Electric Integrated Resource Plan to guide OUC through the next 30 years. Results of the EIRP have been discussed throughout this Ten-Year Site Plan. OUC expects to update its plan regularly, to incorporate changes such as the acquisition of Osceola Generating Station. Relevant highlights include:

- OUC anticipates entering into PPAs for approximately 1,267 MWac of solar (nameplate) and 600 MW of energy storage by 2033.
- OUC anticipates placing the coal-fired Unit Stanton Energy Center Unit 1 in cold shutdown by no later than December 31, 2025.
- OUC anticipates converting the coal-fired Stanton Energy Center Unit 2 to operate on 100 percent natural gas, no later than 2027.
- OUC has pledged to achieve Net Zero carbon emissions by 2050, with interim targets of 50% carbon emissions reductions by 2030 and 75% carbon emissions reductions by 2040, both as compared to 2005 levels.

12.0 TEN-YEAR SITE PLAN SCHEDULES

This section presents the schedules required by the Ten-Year Site Plan rules for the FPSC. The information contained within the FPSC Schedules is representative of the combined OUC and City of St. Cloud systems, consistent with all sections of the 2024 OUC Ten-Year Site Plan.

Schedule 1
Existing Generating Facilities
As of December 31, 2023

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
				Fuel		Fuel Transport		Alt. Fuel	Commercial	Expected	Gen. Max.	Net Capability	
Plant Name	Unit No.	Location	Unit Type	Pri	Alt	Pri	Alt	Days Use	In-Service Month/Year	Retirement Month/Year	Nameplate KW[1]	Summer MW	Winter MW
Indian River	A	Brevard	GT	NG	DFO	PL	TK	0.2	06/89	Unknown	41,400	16[2]	18[2]
Indian River	B	Brevard	GT	NG	DFO	PL	TK	0.2	07/89	Unknown	41,400	16[2]	18[2]
Indian River	C	Brevard	GT	NG	DFO	PL	TK	0.2	08/92	Unknown	130,000	83[3]	88[3]
Indian River	D	Brevard	GT	NG	DFO	PL	TK	0.2	10/92	Unknown	130,000	83[3]	88[3]
Stanton Energy Center	1	Orange	ST	BIT	NA	RR	UN	UN	07/87	12/25[4]	464,500	311[5]	311[5]
Stanton Energy Center	2	Orange	ST	BIT	NA	RR	UN	UN	06/96	Unknown	464,500	352[6]	352[6]
Stanton Energy Center	A	Orange	CC	NG	DFO	PL	TK	3	10/03	Unknown		184[7]	189[7]
Stanton Energy Center	B	Orange	CC	NG	DFO	PL	TK	3	02/10	Unknown	333,000	292	307
St. Lucie[8]	2	St. Lucie	ST	NUC	NA	TK	UN	UN	08/83	Unknown		60	62
Osceola Generating Station[9]	1	Osceola	GT	NG	DFO	PL	TK	3	12/2001	Unknown	197,000	157	157
Osceola Generating Station[9]	2	Osceola	GT	NG	DFO	PL	TK	3	12/2001	Unknown	197,000	157	157
Osceola Generating Station[9]	3	Osceola	GT	NG	DFO	PL	TK	3	6/2002	Unknown	197,000	157	157

NOTES:

[1] Nameplate ratings are reported for units which OUC maintains majority ownership. Values reported are for the entire unit (not just OUC's ownership share)

[2] Reflects an OUC ownership share of 48.8 percent.

[3] Reflects an OUC ownership share of 79.0 percent.

[4] As discussed throughout OUC's 2024 10-Year Site Plan, OUC currently anticipates placing Stanton Energy Center Unit 1 in cold shutdown by the end of 2025.

[5] Reflects an OUC ownership share of 68.6 percent.

[6] Reflects an OUC ownership share of 71.6 percent and St. Cloud entitlement of 3.4 percent.

[7] Reflects an OUC ownership share of 28.0 percent.

[8] OUC owns approximately 6.1 percent of St. Lucie Unit No. 2. Reliability exchange divides 50 percent power from Unit No. 1 and 50 percent power from Unit No. 2.

[9] Osceola Generating Station Unit 2 is currently able to provide power to OUC, while Unit 1 and Unit 3 are currently not able to provide power to OUC. Unit 1 and Unit 3 are anticipated to be able to provide power to OUC beginning in summer 2025.

Schedule 2.1
History and Forecast of Energy Consumption and Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Rural and Residential				Commercial	
Year	Population	Members per Household	GWH	Average No. of Customers	Average KWH Consumption Per Customer	GWH	Average No. of Customers	Average KWH Consumption Per Customer
HISTORY:								
2014	485,016	2.55	2,264	190,279	11,899	379	23,376	16,230
2015	496,659	2.54	2,430	195,606	12,423	393	23,705	16,579
2016	514,813	2.56	2,491	201,424	12,369	401	23,991	16,719
2017	576,536	2.79	2,481	206,959	11,987	424	24,323	17,440
2018	577,895	2.74	2,576	210,899	12,212	475	25,020	18,966
2019	615,376	2.85	2,599	216,113	12,026	474	25,751	18,424
2020	634,982	2.86	2,750	221,756	12,402	459	26,391	17,408
2021	631,387	2.76	2,701	228,707	11,808	461	27,128	16,997
2022	642,220	2.72	2,798	236,057	11,851	484	28,013	17,285
2023	633,874	2.62	2,857	242,199	11,795	506	28,065	18,020
FORECAST:								
2024	654,745	2.65	2,777	247,288	11,230	500	28,427	17,571
2025	672,935	2.68	2,815	251,490	11,192	504	28,763	17,539
2026	688,180	2.69	2,886	256,292	11,261	510	29,068	17,544
2027	700,363	2.68	2,987	261,331	11,431	516	29,363	17,590
2028	712,735	2.68	3,098	266,220	11,637	524	29,654	17,655
2029	725,412	2.68	3,211	271,053	11,847	531	29,936	17,733
2030	737,857	2.67	3,312	275,940	12,003	537	30,206	17,786
2031	749,850	2.67	3,422	280,935	12,180	544	30,464	17,853
2032	761,840	2.66	3,543	285,925	12,390	552	30,713	17,968
2033	773,806	2.66	3,669	290,938	12,610	560	30,953	18,099

Notes:
Represents total of OUC and St. Cloud.

Schedule 2.2
History and Forecast of Energy Consumption and Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	GWH	Industrial Average No. of Customers	Average KWH Consumption Per Customer	Railroads and Railways GWH	Street & Highway Lighting GWH	Other Sales to Public Authorities GWH	Total Sales to Ultimate Consumers GWH
HISTORY:							
2014	3,489	5,618	621,007	0	30	29	6,191
2015	3,514	5,793	606,594	0	61	139	6,537
2016	3,506	5,811	603,333	0	61	142	6,601
2017	3,480	5,839	595,929	0	59	124	6,568
2018	3,513	5,709	615,262	0	61	146	6,769
2019	3,544	5,579	635,318	0	61	145	6,823
2020	3,336	5,301	629,406	0	62	131	6,740
2021	3,447	5,210	661,681	0	62	136	6,807
2022	3,557	5,102	697,124	0	63	141	7,042
2023	3,587	5,075	706,729	0	44	162	7,155
FORECAST:							
2024	3,554	5,112	695,214	0	61	141	7,033
2025	3,709	5,160	718,839	0	62	175	7,265
2026	3,799	5,204	730,066	0	62	194	7,452
2027	3,846	5,247	732,967	0	62	195	7,607
2028	3,896	5,287	736,913	0	63	196	7,776
2029	3,960	5,327	743,333	0	63	197	7,962
2030	4,047	5,364	754,402	0	63	198	8,157
2031	4,094	5,397	758,530	0	63	199	8,322
2032	4,150	5,430	764,241	0	64	200	8,508
2033	4,209	5,461	770,718	0	64	201	8,702

Notes:
Represents total of OUC and St. Cloud.

Schedule 2.3
History and Forecast of Energy Consumption and Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)
Year	Sales for Resale GWH	Utility Use & Losses GWH	Net Energy for Load GWH	Other Customers (Average No.)	Total No. of Customers
HISTORY:					
2014	1,000	332	7,523	0	219,272
2015	1,317	268	8,122	0	225,104
2016	1,100	278	7,979	0	231,226
2017	1,032	302	7,902	0	237,121
2018	1,040	189	7,998	0	241,628
2019	644	295	7,762	0	247,443
2020	665	220	7,625	0	253,448
2021	534	206	7,547	0	261,045
2022	505	217	7,764	0	269,172
2023	578	239	7,972	0	275,339
FORECAST:					
2024	635	229	7,896	0	280,827
2025	592	233	8,090	0	285,413
2026	243	239	7,933	0	290,564
2027	147	247	8,001	0	295,941
2028	112	254	8,143	0	301,161
2029	114	262	8,337	0	306,316
2030	116	269	8,542	0	311,510
2031	0	276	8,598	0	316,796
2032	0	284	8,791	0	322,068
2033	0	292	8,994	0	327,352

Notes:
Represents total of OUC and St. Cloud.
Historical "Sales for Resale" includes sales to various entities to which OUC provided power.
Forecast "Sales for Resale" includes aggregated projected sales to City of Winter Park, City of Lake Worth Beach, City Mt. Dora, City of Chattahoochee, and Lakeland
"Net Energy for Load" may not match other Schedules due to rounding.

Schedule 3.1
History and Forecast of Summer Peak Demand
Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Residential Load Management	Residential Conservation	Comm./Ind. Load Management	Comm./Ind. Conservation	Net Firm Demand
HISTORY:									
2014	1,500	203	1,297	0	0	0.6	0.0	0.2	1,499
2015	1,531	206	1,325	0	0	0.4	0.0	2.2	1,528
2016	1,620	252	1,368	0	0	0.5	0.0	2.5	1,617
2017	1,638	255	1,383	0	0	0.4	0.0	5.0	1,633
2018	1,541	207	1,334	0	0	0.4	0.0	3.7	1,537
2019	1,634	199	1,431	0	0	0.5	0.0	3.4	1,630
2020	1,590	224	1,362	0	0	0.8	0.0	2.3	1,586
2021	1,653	246	1,404	0	0	0.6	0.0	1.9	1,650
2022	1,666	243	1,420	0	0	0.5	0.0	2.0	1,663
2023	1,795	241	1,551	0	0	0.8	0.0	1.6	1,792
FORECAST:									
2024	1,746	276	1,470	0	0	0.0	0.0	0.0	1,746
2025	1,639	101	1,537	0	0	0.0	0.0	1.0	1,638
2026	1,621	52	1,567	0	0	1.0	0.0	1.0	1,619
2027	1,637	36	1,598	0	0	1.0	0.0	2.0	1,634
2028	1,663	27	1,633	0	0	1.0	0.0	2.0	1,660
2029	1,702	27	1,669	0	0	2.0	0.0	3.0	1,697
2030	1,746	28	1,713	0	0	2.0	0.0	3.0	1,741
2031	1,763	0	1,757	0	0	2.0	0.0	4.0	1,757
2032	1,808	0	1,802	0	0	2.0	0.0	4.0	1,802
2033	1,856	0	1,850	0	0	2.0	0.0	4.0	1,850

Notes:
"Retail" represents total of OUC and St. Cloud. "Wholesale" represents peak demand for entities to which OUC provided wholesale power. Peak demands may not match other schedules due to non-coincidence of OUC and St. Cloud peaks and/or rounding.
Historical "Residential Conservation" and "Comm/Ind. Conservation" represent annual demand reductions associated with new participants in OUC's DSM programs described in Section 5 of OUC's 2024 Ten-Year Site Plan.
Forecast "Residential Conservation" and "Comm/Ind. Conservation" represent cumulative annual demand reductions associated with new participants in OUC's DSM programs described in Section 5 of OUC's 2024 Ten-Year Site Plan.
Historical "Wholesale" includes sales to various entities to which OUC provided power.
Forecast "Wholesale" includes aggregated projected sales to City of Winter Park, City of Lake Worth Beach, City Mt. Dora, City of Chattahoochee, and Lakeland Electric as summarized in Section 2 of OUC's 2024 Ten-Year Site Plan.
Data may not exactly match up with peak demands presented in the 2024 OUC Ten-Year Site Plan due to coincidence and rounding.
"Wholesale" and "Retail" are net of "Conservation" reductions.

Schedule 3.2
History and Forecast of Winter Peak Demand
Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Residential Load Management	Residential Conservation	Comm./Ind. Load Management	Comm./Ind. Conservation	Net Firm Demand
HISTORY:									
2013/14	1,275	201	1,074	0	0	0.4	0.0	0.2	1,275
2014/15	1,374	207	1,166	0	0	0.4	0.0	0.7	1,373
2015/16	1,320	243	1,077	0	0	0.4	0.0	1.3	1,319
2016/17	1,194	210	984	0	0	0.3	0.0	4.4	1,189
2017/18	1,410	182	1,228	0	0	0.3	0.0	4.7	1,405
2018/19	1,134	76	1,055	0	0	0.3	0.0	3.5	1,131
2019/20	1,160	67	1,090	0	0	0.8	0.0	2.0	1,157
2020/21	1,307	169	1,134	0	0	1.0	0.0	2.0	1,304
2021/22	1,348	190	1,156	0	0	0.7	0.0	1.7	1,346
2022/23	1,521	291	1,228	0	0	1.0	0.0	1.6	1,519
FORECAST:									
2023/24	1,358	192	1,166	0	0	0.0	0	1.0	1,357
2024/25	1,274	67	1,206	0	0	0.0	0	1.0	1,273
2025/26	1,307	42	1,263	0	0	0.0	0	2.0	1,305
2026/27	1,330	26	1,301	0	0	0.0	0	3.0	1,327
2027/28	1,349	20	1,325	0	0	1.0	0	3.0	1,345
2028/29	1,383	20	1,358	0	0	1.0	0	4.0	1,378
2029/30	1,440	20	1,414	0	0	1.0	0	5.0	1,434
2030/31	1,491	0	1,485	0	0	1.0	0	5.0	1,485
2031/32	1,503	0	1,495	0	0	2.0	0	6.0	1,495
2032/33	1,587	0	1,578	0	0	2.0	0	7.0	1,578

Notes:
"Retail" represents total of OUC and St. Cloud. "Wholesale" represents peak demand for entities to which OUC provided wholesale power. Peak demands may not match other schedules due to non-coincidence of OUC and St. Cloud peaks and/or rounding.
Historical "Residential Conservation" and "Comm/Ind. Conservation" represent annual demand reductions associated with new participants in OUC's DSM programs described in Section 5 of OUC's 2024 Ten-Year Site Plan.
Forecast "Residential Conservation" and "Comm/Ind. Conservation" represent cumulative annual demand reductions associated with new participants in OUC's DSM programs described in Section 5 of OUC's 2024 Ten-Year Site Plan.
Historical "Wholesale" includes sales to various entities to which OUC provided power.
Forecast "Wholesale" includes aggregated projected sales to City of Winter Park, City of Lake Worth Beach, City Mt. Dora, City of Chattahoochee, and Lakeland Electric as summarized in Section 2 of OUC's 2024 Ten-Year Site Plan.
Data may not exactly match up with peak demands presented in the 2024 OUC Ten-Year Site Plan due to coincidence and rounding.
"Wholesale" and "Retail" are net of "Conservation" reductions.

Schedule 3.3
History and Forecast of Annual Net Energy for Load - GWH
Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Total	Residential Conservation	Comm./Ind. Conservation	Retail	Wholesale	Utility Use & Losses	Net Energy for Load	Load Factor %
HISTORY:								
2014	7,526	1.8	1.0	6,191	1,000	332	7,523	57.3%
2015	8,136	0.8	13.4	6,537	1,317	268	8,122	57.3%
2016	7,992	1.2	12.3	6,601	1,100	278	7,979	55.4%
2017	7,934	0.8	31.0	6,568	1,032	302	7,902	55.3%
2018	8,033	0.8	34.7	6,769	1,040	189	7,998	59.4%
2019	7,778	1.0	14.3	6,823	644	295	7,762	54.4%
2020	7,558	1.6	9.0	6,740	665	220	7,625	52.2%
2021	7,570	11.5	11.4	6,807	534	206	7,547	52.2%
2022	7,770	1.1	4.8	7,042	505	217	7,764	53.3%
2023	7,983	1.9	8.5	7,155	578	239	7,972	50.8%
FORECAST:								
2024	7,898	1.0	1.0	7,033	635	229	7,896	51.6%
2025	8,094	2.0	2.0	7,265	592	233	8,090	56.4%
2026	7,937	2.0	2.0	7,452	243	239	7,933	55.9%
2027	8,007	3.0	3.0	7,607	147	247	8,001	55.9%
2028	8,151	4.0	4.0	7,776	112	254	8,143	56.0%
2029	8,345	4.0	4.0	7,962	114	262	8,337	56.1%
2030	8,552	5.0	5.0	8,157	116	269	8,542	56.0%
2031	8,609	5.0	6.0	8,322	0	276	8,598	55.9%
2032	8,803	5.0	7.0	8,508	0	284	8,791	55.7%
2033	9,008	6.0	8.0	8,702	0	292	8,994	55.5%

Notes:
"Retail" represents total of OUC and St. Cloud. "Wholesale" represents energy for entities to which OUC provided wholesale power. Energy may not match other schedules due to rounding.
Historical "Residential Conservation" and "Comm/Ind. Conservation" represent annual energy reductions associated with new participants in OUC's DSM programs described in Section 5 of OUC's 2024 Ten-Year Site Plan.
Forecast "Residential Conservation" and "Comm/Ind. Conservation" represent cumulative annual energy reductions associated with new participants in OUC's DSM programs described in Section 5 of OUC's 2024 Ten-Year Site Plan.
Historical "Wholesale" includes sales to various entities to which OUC provided power.
Forecast "Wholesale" includes aggregated projected sales to City of Winter Park, City of Lake Worth Beach, City Mt. Dora, City of Chattahoochee, and Lakeland Electric as summarized in Section 2 of OUC's 2024 Ten-Year Site Plan.
Data may not exactly match up with energy presented in the 2023 OUC Ten-Year Site Plan due to rounding.

Schedule 4
Previous Year and 2-Year Forecast of Retail Peak Demand and Net Energy for Load by Month

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	2023 Actual		2024 Forecast		2025 Forecast	
Month	Peak Demand MW	NEL GWH	Peak Demand MW	NEL GWH	Peak Demand MW	NEL GWH
January	1,029	528	1,166	542	1,193	555
February	1,104	492	1,118	493	1,194	494
March	1,228	570	1,052	532	1,082	551
April	1,260	581	1,170	548	1,206	567
May	1,289	637	1,369	638	1,399	659
June	1,406	685	1,387	685	1,446	710
July	1,440	753	1,421	733	1,485	759
August	1,551	792	1,470	740	1,537	765
September	1,382	689	1,397	679	1,466	705
October	1,278	614	1,300	612	1,361	634
November	1,114	527	1,159	525	1,220	543
December	1,006	526	1,099	534	1,152	555

Notes:
Represents the total of OUC and St. Cloud retail peak demands and net energy for load. Wholesale sales are not included.
Peak demands may not match other schedules due to non-coincidence of OUC and St. Cloud peaks and/or rounding. NEL may not match other schedules due to rounding.

Schedule 5
Fuel Requirements

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Fuel Requirements		Units	Actual 2022	Actual 2023	2024	2025	202	2027	2028	2029	2030	2031	2032	2033
(1)	Nuclear		Trillion BTU	5	6	5	6	6	5	6	6	5	6	6	5
(2)	Coal		1000 Ton	914	941	666	887	543	569	0	0	0	0	0	0
(3)	Residual	Total	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(4)		Steam	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(5)		CC	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(6)		CT	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(7)		Other	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(8)	Distillate	Total	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(9)		Steam	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(10)		CC	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(11)		CT	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(12)		Other	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(13)	Natural Gas	Total	1000 MCF	37,506	38,959	43,291	34,551	38,605	35,639	47,335	46,608	45,780	43,448	45,344	37,298
(14)		Steam	1000 MCF	4,505	4,241	6,312	1,026	609	446	6,574	6,799	7,956	7,858	16,603	14,363
(15)		CC	1000 MCF	32,155	33,697	35,431	33,107	36,698	33,205	38,935	36,892	34,839	30,802	22,972	18,507
(16)		CT	1000 MCF	845	1,021	1,548	418	1,299	1,988	1,826	2,917	2,985	4,788	5,769	4,428
(17)	Other (Specify)		Trillion BTU	0	0	0	0	0	0	0	0	0	0	0	0

Notes:
Represents fuel required to serve OUC and St. Cloud, and sales to wholesale customers.
Natural gas CC includes purchases from Stanton A PPA

Schedule 6.1
Energy Sources

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Energy Sources		Units	Actual 2022	Actual 2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
(1)	Firm Inter-Region Interchange		GWH	0	0	0	0	0	0	0	0	0	0	0	0
(2)	Nuclear		GWH	487	494	477	513	512	490	508	511	481	508	510	479
(3)	Coal		GWH	1,978	1,938	1,175	1,770	1,093	1,145	0	0	0	0	0	0
(4)	Residual	Total	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(5)		Steam	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(6)		CC	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(7)		CT	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(8)		Other	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(9)	Distillate	Total	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(10)		Steam	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(11)		CC	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(12)		CT	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(13)		Other	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(14)	Natural Gas	Total	GWH	4,953	5,144	5,644	4,793	5,302	4,866	6,132	5,866	5,638	5,204	4,922	4,002
(15)		Steam	GWH	437	369	552	101	61	45	551	551	640	647	1,456	1,248
(16)		CC	GWH	4,466	4,712	4,973	4,661	5,139	4,653	5,435	5,084	4,763	4,155	2,981	2,383
(17)		CT	GWH	50	63	119	31	101	169	147	231	235	402	486	372
(18)	NUG		GWH	0	0	0	0	0	0	0	0	0	0	0	0
(19)	Renewables	Total	GWH	346	396	600	1,015	1,027	1,499	1,502	1,959	2,423	2,886	3,360	4,513
(20)		Biofuels	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(21)		Biomass	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(22)		Hydro	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(23)		Landfill Gas	GWH	132	114	228	241	254	263	263	263	263	263	263	263
(24)		MSW	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(25)		Solar	GWH	214	282	371	774	773	1,237	1,239	1,697	2,160	2,624	3,096	4,251
(26)		Wind	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(27)		Other	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(28)	Other (Specify)		GWH	0	0	0	0	0	0	0	0	0	0	0	0
(29)	Net Energy for Load		GWH	7,764	7,972	7,896	8,090	7,933	8,001	8,143	8,337	8,542	8,598	8,791	8,994

Notes:
Represents GWh required to serve OUC and St. Cloud, and sales to wholesale customers.
Total Net Energy for Load may not correspond to other Schedules due to rounding.
Natural Gas CC includes purchases from Stanton A PPA

Schedule 6.2
Energy Sources

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Energy Sources		Units	Actual 2022	Actual 2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
(1)	Firm Inter-Region Interchange		%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(2)	Nuclear		%	6.27%	6.20%	6.04%	6.34%	6.45%	6.13%	6.24%	6.13%	5.63%	5.91%	5.80%	5.32%
(3)	Coal		%	25.48%	24.31%	14.88%	21.88%	13.78%	14.31%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(4)	Residual	Total	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(5)		Steam	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(6)		CC	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(7)		CT	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(8)		Other	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(9)	Distillate	Total	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(10)		Steam	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(11)		CC	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(12)		CT	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(13)		Other	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(14)	Natural Gas	Total	%	63.80%	64.52%	71.48%	59.24%	66.83%	60.82%	75.31%	70.37%	66.00%	60.53%	55.99%	44.50%
(15)		Steam	%	5.63%	4.63%	6.99%	1.25%	0.77%	0.56%	6.77%	6.61%	7.49%	7.52%	16.56%	13.87%
(16)		CC	%	57.52%	59.11%	62.98%	57.61%	64.78%	58.15%	66.74%	60.98%	55.77%	48.33%	33.91%	26.49%
(17)		CT	%	0.64%	0.79%	1.51%	0.38%	1.28%	2.11%	1.80%	2.77%	2.75%	4.68%	5.52%	4.14%
(18)	NUG		%												
(19)	Renewables	Total	%	4.45%	4.97%	7.59%	12.54%	12.94%	18.74%	18.44%	23.50%	28.36%	33.57%	38.21%	50.18%
(20)		Biofuels	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(21)		Biomass	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(22)		Hydro	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(23)		Landfill Gas	%	1.70%	1.44%	2.89%	2.97%	3.20%	3.28%	3.23%	3.15%	3.07%	3.05%	2.99%	2.92%
(24)		MSW	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(25)		Solar	%	2.75%	3.53%	4.70%	9.57%	9.74%	15.46%	15.21%	20.35%	25.29%	30.52%	35.22%	47.26%
(26)		Wind	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(27)		Other	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(28)	Other (Specify)		%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(29)	Net Energy for Load		%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Notes:
Represents GWh required to serve OUC and St. Cloud, and sales to wholesale customers.
Natural Gas CC includes purchases from Stanton A PPA

Schedule 7.1
Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Summer Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Year	Total Installed Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	QF MW	Total Capacity Available MW	System Firm Summer Peak Demand MW	Reserve Margin before Maintenance MW	Reserve Margin before Maintenance % of Peak	Scheduled Maintenance MW	Reserve Margin after Maintenance MW	Reserve Margin after Maintenance % of Peak
FORECAST:											
2024	1,553	510	0	0	2,063	1,746	317	22%	0	317	22%
2025	1,867	585	0	0	2,451	1,638	813	53%	0	813	53%
2026	1,556	585	0	0	2,141	1,619	522	33%	0	522	33%
2027	1,556	759	0	0	2,315	1,634	681	43%	0	681	43%
2028	1,556	759	0	0	2,315	1,660	655	40%	0	655	40%
2029	1,556	747	0	0	2,303	1,697	606	36%	0	606	36%
2030	1,556	821	0	0	2,377	1,741	636	37%	0	636	37%
2031	1,556	996	0	0	2,552	1,757	795	45%	0	795	45%
2032	1,556	878	0	0	2,434	1,802	632	35%	0	632	35%
2033	1,556	1,315	0	0	2,871	1,850	1,021	55%	0	1,021	55%

Notes:

"Firm Capacity Import" includes OUC's existing and future power purchase agreements, including renewables.

"System Firm Summer Peak Demand" includes OUC and St. Cloud peak demand, as well as OUC's wholeslae power sales.

"Reserve Margin (MW)" calculated as "Total Available Capacity" minus "System Firm Summer Peak Demand."

"Reserve Margin (% of Peak)" calculated as "Reserve Margin (MW)" divided by "System Firm Summer Peak Demand" after adjusting for sales to Lake Worth, WInter Park, Mt. Dora, Chatahoochee, and Lakeland. OUC's agreement with Lake Worth already includes reserve calculations and OUC is not responsible for providing reserves to Winter Park, Mt. Dora, Chattahoochee, or Lakeland.

"Scheduled Maintenance (MW)" is zero, as no units are scheduled for maintenance during peak periods.

Forecast "System Firm Summer Peak Demand" may not exactly match up with peak demands presented in the 2024 OUC Ten-Year Site Plan due to coincidence and rounding.

Schedule 7.2
Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Winter Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Year	Total Installed Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	QF MW	Total Capacity Available MW	System Firm Winter Peak Demand MW	Reserve Margin before Maintenance MW	Reserve Margin before Maintenance % of Peak	Scheduled Maintenance MW	Reserve Margin after Maintenance MW	Reserve Margin after Maintenance % of Peak
FORECAST:											
2023/24	1,590	455	0	0	2,045	1,357	687	59%	0	687	59%
2024/25	1,590	455	0	0	2,045	1,273	772	64%	0	772	64%
2025/26	1,593	455	0	0	2,048	1,305	743	59%	0	743	59%
2026/27	1,593	455	0	0	2,048	1,327	721	55%	0	721	55%
2027/28	1,593	555	0	0	2,148	1,345	804	61%	0	804	61%
2028/29	1,593	468	0	0	2,061	1,378	683	50%	0	683	50%
2029/30	1,593	468	0	0	2,061	1,434	627	44%	0	627	44%
2030/31	1,593	468	0	0	2,061	1,485	576	39%	0	576	39%
2031/32	1,593	219	0	0	1,812	1,495	318	21%	0	318	21%
2032/33	1,593	369	0	0	1,962	1,578	384	24%	0	384	24%

Notes:
"Firm Capacity Import" includes OUC's existing and future power purchase agreements, including renewables.
"System Firm Summer Peak Demand" includes OUC and St. Cloud peak demand, as well as OUC's wholeslae power sales.
"Reserve Margin (MW)" calculated as "Total Available Capacity" minus "System Firm Summer Peak Demand."
"Reserve Margin (% of Peak)" calculated as "Reserve Margin (MW)" divided by "System Firm Summer Peak Demand" after adjusting for sales to Lake Worth, WInter Park, Mt. Dora, Chatahoochee, and Lakeland. OUC's agreement with Lake Worth already includes reserve calculations and OUC is not responsible for providing reserves to Winter Park, Mt. Dora, Chattahoochee, or Lakeland.
"Scheduled Maintenance (MW)" is zero, as no units are scheduled for maintenance during peak periods.
Forecast "System Firm Summer Peak Demand" may not exactly match up with peak demands presented in the 2024 OUC Ten-Year Site Plan due to coincidence and rounding.

Schedule 8
Planned and Prospective Generating Facility Additions and Changes

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
				Fuel		Fuel Transport		Const. Start	Commercial In-Service	Expected Retirement	Gen. Max. Nameplate	Net Capability		
Plant Name	Unit No.	Location	Unit Type	Pri	Alt	Pri	Alt	Mo/Yr	Mo/Yr	Mo/Yr	KW	Summer MW	Winter MW	Status
Stanton Energy Center	1	Orange	ST	BIT	N/A	RR	N/A	-	N/A	12/25	464,500	-311	-311	OS
Stanton Energy Center	2	Orange	ST	NG	N/A	PL	N/A	-	N/A	04/27	464,500	352	350	OT
Osceola Generating Station	1	Osceola	GT	NG	DFO	PL	TK	-	6/25	N/A	197,200	157	157	OP
Osceola Generating Station	3	Osceola	GT	NG	DFO	PL	TK	-	6/25	N/A	185,600	157	157	OP

Notes:

Changes to Net Capability for Stanton Energy Center Unit 1 represents reduction in output for OUC's ownership share of Stanton 1 following unit being placed into cold shutdown.

Changes to Stanton Energy Center Unit 2 represents conversion from coal to natural gas. Net Capability shown is not incremental but rather the net capability following conversion.

Osceola Generating Station Units 1 and 3 are not currently capable of delivering power to OUC until completion of necessary maintenance and transmission system improvements.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) Plant Name and Unit Number:

(2) Capacity
a. Summer:
b. Winter:

(3) Technology Type:

(4) Anticipated Construction Timing
a. Field construction start-date:
b. Commercial in-service date:

(5) Fuel
a. Primary fuel:
b. Alternate fuel:

(6) Air Pollution Control Strategy:

(7) Cooling Method:

(8) Total Site Area:

(9) Construction Status:

(10) Certification Status:

(11) Status with Federal Agencies:

(12) Projected Unit Performance Data
Planned Outage Factor (POF):
Forced Outage Factor (FOF):
Equivalent Availability Factor (EAF):
Resulting Capacity Factor (%):
Average Net Operating Heat Rate (ANOHR):

(13) Projected Unit Financial Data
Book Life (Years):
Total Installed Cost (In-Service Year $/kW):
Direct Construction Cost ($/kW):
AFUDC Amount ($/kW):
Escalation ($/kW):
Fixed O&M ($/kW-Yr):
Variable O&M ($/MWH):
K Factor:

Notes:
As discussed throughout OUC's 2024 Ten-Year Site Plan, consideration of OUC's current existing generating resources (including existing PPAs), OUC's expected future PPAs, and OUC's current base-case load forecast indicates that OUC is projected to have adequate capacity to satisfy forecast reserve margin requirements through 2033 (the final year considered in the 2024 Ten-Year Site Plan). As such, no new capacity additions are included in the 2024 Ten-Year Site Plan.

Schedule 10
Status Report and Specifications of Proposed Directly Associated Transmission Lines

(1) Point of Origin and Termination:

(2) Number of Lines:

(3) Right-of-Way:

(4) Line Length:

(5) Voltage:

(6) Anticipated Construction Timing:

(7) Anticipated Capital Investment:

(8) Substations:

(9) Participation with Other Utilities:

Notes:
OUC's 2024 Ten-Year Site Plan does not include any proposed directly associated transmission lines. Therefore, Schedule 10 is not applicable.