

## **Okeechobee Clean Energy Center (OCEC)**

OCEC Unit 1 is a natural gas fired combined cycle unit with a commercial operation date scheduled for June 1, 2019.

The project site is located in northeast Okeechobee County, Florida, approximately 24 miles west of Vero Beach and 27 miles north-northeast of Okeechobee on the border with Indian River County. An existing paved road (226th Court) provides access to the property from State Road (SR) 60. An existing transmission line right-of-way is located adjacent to portions of the northern and eastern property boundary.

The project site includes the approximately 189-acre plant area where the new generating facilities will be located, along with construction laydown areas, parking, stormwater ponds, and associated infrastructure; an approximately 376-acre wetland mitigation area; approximately 1,629 acres for potential future solar generation; and approximately 134 acres identified as open space.

The Unit is configured as a 3-3-1, i.e., three combustion turbines attached to three heat recovery steam generators which then send steam to one steam turbine generator. The Unit will produce approximately 1,622 megawatts at 95F ambient temperature.

The combustion turbines are GE 7HA.02 (at about 350 MWs each) including evaporative cooling and wet compression for enhanced output. The steam turbine generator is a tandem compound four flow condensing turbine (at about 575 MW). The Heat Recovery Steam Generators (HRSG) are multi-pressure with reheat and include selective catalytic reduction for NOx control. Duct burners are not included. Stack height will be 149 ft.

A cooling water system including a 30-cell mechanical draft cooling tower will be used to condense steam and cool operating equipment. Steam cycle and cooling tower blowdown will be routed to an Underground Injection System consisting of 2 deep injection wells and 1 dual zone monitoring well.

Makeup for process and cooling water will come from the Upper Floridan Aquifer (4 wells) and potable water will come from surficial aquifer wells.

The site will be served by a natural gas pipeline interconnecting into an onsite gas yard consisting of gas metering, regulation, and a natural gas heater. Truck unloading and storage facilities, including a 7 million gallon storage tank, will be included for the emergency/back-up fuel, ultra low sulfur light oil.

A new 500 kV collector yard and substation will be located on the site to interconnect the Unit to the existing 500 kV transmission network located adjacent to the site.

The site stormwater design includes two wet detention ponds, perimeter channels, and outfall structures. Fill from the ponds will be used to raise the existing site in the OCEC Unit 1 area.

A high level major asset list is provided below based on the preliminary design.

As the units are in a preliminary design stage, the equipment list used in this study is an approximation of the final list and is subject to review and change in future studies.

Major Asset List:

1. 3 CTGs – GE 7HA.02 with evaporative cooling and wet compression
2. 3 HRSGs with SCR and 149 ft stacks
3. 1 STG – tandem compound four flow
4. 1 multi-pressure surface condenser
5. 30-cell mechanical draft cooling tower
6. Circulating water pumps
7. Closed cooling water heat exchangers
8. Condensate pumps
9. Feedwater pumps
10. Condensate and feedwater chemical feed systems
11. Condensate/steam sampling system
12. Cooling tower chemical feed equipment and enclosure
13. 3 CTG step up transformers (stepping up to 500 kV)
14. 2 STG step up transformers (2 x 50%, stepping up to 500 kV)
15. 2 Auxiliary transformers (2 x 100%)
16. 2 Emergency diesel generators (3,100 kW each)
17. 500 kV collector yard
18. 500 kV substation
19. Distributed Control System
20. 4 Upper Floridan Aquifer makeup water wells
21. 2 Surficial Aquifer makeup water well
22. Water treatment and storage system
  - a. Leased RO/mixed bed
  - b. Raw water storage tank (2 million gallons)
  - c. Service/fire water storage tank (4 million gallons)
  - d. Demineralized water storage tank (6.6 million gallons)
23. 2 deep injection and 1 dual zone monitoring wells (UIC system)
24. 2 Stormwater wet detention ponds and outfalls
25. Septic system and leach field
26. Oil water separators
27. Auxiliary Boiler (99 MMBtu/hr)
28. Anhydrous ammonia unloading and storage (multiple tanks)
29. Administration Building
30. Warehouse
31. Hurricane Shelter with emergency generator
32. Diesel fire pump and enclosure (425 horsepower)
33. Hydrogen storage tank
34. Gas yard including regulating and metering area and fuel gas heater