



Sigma Energy Solutions—
Babylon, New York, USA

Pinelawn Power LLC, Pinelawn Power Station

Project Description

The Pinelawn Combined Cycle Power Plant was constructed in 2005 to provide electrical power for the Long Island Power Authority (LIPA). The 56 MW combined cycle plant is optimized to achieve low-cost operation and reliable power delivery for the LIPA grid.



IST was contracted to supply one (1) OTSG for the Pinelawn Combined Cycle Plant. The OTSG was built with an HP steam circuit, supplemental burners fired to 1340 F and SCR and CO systems for emissions control. The plant features one (1) x 43 MW LM6000 gas turbine and one (1) steam turbine.

The customer selected the OTSG because it is ideally suited for a combined cycle application due to its efficient steam production and flexible operation. The OTSG is capable of extremely fast start-ups and is typically able to supply full steam loads within 60 minutes. Since the OTSG starts from a dry condition, there is no requirement to slowly heat the water contained within the drum. The fast start-up of the OTSG allows both the gas turbine to reach full load much quicker than a traditional drum HRSG.





OTSG Common Benefits

IST's unique Once Through Steam Generators are designed to run dry, eliminating the need for bypass stacks, diverter valve systems and stack silencers. OTSGs have once through flow paths; therefore no steam drums or blowdown systems are required.

The absence of drums and the modular design and manufacture the OTSG facilitate easy and rapid shipment and erection of the unit. The unit at Pinelawn was mechanically installed on site in approximately five weeks and required 4000 installation man-hours.

The unit consists of five modules: inlet duct, plenum, steam generator module, hood, and the stack, which reduce erection time and crane requirements. The use of small diameter tubes and modular construction allow for a lightweight and compact design that is suited for projects that have weight and size restrictions.

The OTSG demonstrates a significant improvement over the natural circulation drum-type units. It offers high availability, high efficiency, simple operation, dry running, and the lowest installed and life cycle costs in the industry.

CONTRACT SUMMARY

Gas Turbine	Turbine Output (MW)	Exhaust Weight (lbs/hr)	Fuel	Exhaust Temp. (°F)	Firing Temp. (°F)	Feedwater Temp. (°F)
LM6000	43	1,078,560	Natural Gas / Oil	826	1340	106
HP Steam Flow (lbs/hr)	HP System Pressure (psia)	HP Temp. (°F)	LP Steam Flow (lbs/hr)	LP Steam Pressure (psia)	LP Temp. (°F)	OTSG Total Heating Surface (sq ft)
237,000	828	953	0	0	0	178,486