Generator inlet air temperature drops

How does inlet air cooling increase power output?
Inlet air cooling increases the power output by taking advantage of the gas turbine's feature of higher mass flow rate when the compressor inlet temperature decreases. Different methods are available for reducing gas turbine inlet temperature. There are two basic systems currently available for inlet cooling.

How to reduce gas turbine inlet temperature?
Different methods are available for reducing gas turbine inlet temperature. There are two basic systems currently available for inlet cooling. The first and most cost-effective system is evaporative cooling. Evaporative coolers make use of the evaporation of water to reduce the gas turbine's inlet air temperature.

Does inlet air cooling increase power output of a gas turbine?
The simulation results showed that the utilization of inlet air cooling can increase power outputand lower the gas turbine's heat rate. The maximum net power output obtained from the utilization of mechanical chiller technology was 8.46%. The performance of gas turbines is greatly affected by ambient temperature.

How to obtain turbine inlet air cooling?
Two different methods are frequently employed to obtain turbine inlet air cooling: the evaporative cooling and inlet chilling systems,. Several works has been studied these cooling technologies as below detailed.

How does a gas turbine inlet cooling system work?
There are two basic systems currently available for inlet cooling. The first and most cost-effective system is evaporative cooling. Evaporative coolers make use of the evaporation of water to reduce the gas turbine's inlet air temperature. The second system employs various ways to chill the inlet air.

How to select the optimal inlet air cooling system for intercooled gas turbines?
It is important to note that the optimal inlet air cooling system for intercooled gas turbines can be selected through a thermo-economic analysisthat factors in different ambient temperatures and the ISO relative humidity level of 60%. Fig. 9. Required cooling capacity for an inlet air cooling system. 6.2. Inlet air temperature drop

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