Generator air cooler inlet temperature is high

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.

Does an inlet air cooling system improve power output and efficiency?
Still,the results indicate that the power output and efficiency of the gas turbine improvedas long as the ambient temperature remained at their lower values. Because of this,the incorporation of an inlet air cooling system could mitigate the negative influence of high temperatures in tropical locations.

Can Inlet air cooling improve the performance of intercooled gas turbine power plants?
In hot climates, the entry of high-temperature air into the compressor of intercooled gas turbine power plants (IcGTCC) can lead to reduced electricity production during peak demand periods. To address this issue, this study proposes a novel inlet air cooling (IAC) system for improving the performance of IcGTCC in hot regions.

Can a novel inlet air cooling system increase power output?
A novel inlet air cooling system for intercooled gas turbines is proposed. The proposed system is able to increase power output by 19%and efficiency by 2.3%. The novel system offers 8-18% better efficiency than existing designs in literature. The new system generates substantial annual profits.

Does compressor inlet air temperature affect gas turbine performance?
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. Several studies on the effect of compressor inlet air temperature on gas turbine performance have been conducted.

What are inlet air cooling technologies?
Inlet air cooling technologies such as evaporative cooling,high pressure fogging,and absorption chiller cooling; in a power plant produce 1-15% higher power output than that without inlet air cooling [,,,]. Combined heat and power (CHP) or cogeneration is a well-known solution to counteract ambient temperature effects.

3 inlet air cooling methods to improve performance of a gas turbine are studied. Evaporative media, EM, mechanical chiller, MC, and turbo-expander, TE, are the methods. ...

Niu et al. [93] undertook a study to investigate the influence of inlet air temperature on the performance of EAHE using a one-dimensional steady state control volume model. As evident ...

Generator air cooler inlet temperature is high

The results indicate that, every 1? increase in gas turbine inlet air temperature averagely results in 0.879% decrease in power capacity, 0.282% decrease in heat capacity ...

Before looking at the different inlet air cooling technologies, how inlet air cooling affects gas turbine performance is first presented. 2.1. The Effect of Inlet Air Cooling on Gas Turbine ...

Background: Power generation from gas turbines is penalized by a substantial power output loss with increased ambient temperature. By cooling down the gas turbine intake ...

Exhaust temperature rise may be because of various reasons considered to scenario. 1. Excess temperature of all units increases > Dirty turbocharger air filter > Governor malfunctioning > ...

An evaporative cooling system for turbine inlet air is a useful option for installations where high ambient temperatures and ... The intake air will have a higher relative humidity and lower ...

In areas with underground water sources, underground water can be used to flow into the air cooler to reduce the air inlet temperature. For example, an enterprise uses ...

An Inlet Air Cooling System (IACS) is a technology used in gas turbine power generation to enhance the performance and efficiency of the gas turbine by cooling the inlet air before it ...

Using the saturated water vapor in the low-pressure cylinder of the turbine as the heat source, 7 ? cold water is produced and transported to the air-water heat exchanger ...

UNIVERSITI PUTRA MALAYSIA 18 Alam Cipta Vol 8 (Special Issue 3) December 2015 GAS TURBINE EFFICIENCY IMPROVEMENT BY INLET AIR-COOLING IN SUSTAINABLE ...

The aim of the simulation is to determine the influence of air-fuel ratio on compressor power, turbine power, generator power, thermal efficiency, turbine inlet ...

Cooling inlet air is an attractive alternative for improving power plant performance in a tropical climate. Further studies should assess the effects of high humidity on the power ...

The study showed that the output power decreased by 1.47 MW and efficiency decreased by 0.1%, for every 1 K increase in ambient temperature. In addition to research on ...

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50% load. That is, the unit basically operates under partial load; thus, inlet air cooling technology is inappropriate. Energies 2019, 12, x FOR PEER REVIEW 2 of 12 cooling. Furthermore, inlet ...

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