

**ABSTRACT:**

A commercial solar hybrid gas turbine with LNG cooling system is originally introduced in this paper. The proposed concept vaporizes LNG as useful products while it mainly produces electricity. The simulation using a mathematical program developed by the Authors indicates that the decrease in gas turbine performance is primarily linked to heliostats-receiver system and not only due to additional pressure losses between the compressor outlet and the combustor inlet as it is published by Barigozzi, G., et al. [18]. The implantation of LNG cooling provides many advantages and weakens the partial load performance. When compared to that of hybrid plant without inlet cooling, LNG cooling system improves the solar gas turbine output by 5% while advancing the efficiency by 1%.