

Section 3 Energy Efficiency

3.1 Introduction

The Riverside Energy Resource Center (RERC) would utilize two General Electric (NxGEN) LM6000 Sprint gas turbine generators operated in simple cycle. The LM6000 engine is an aeroderivative combustion turbine designed for quick starting and achieving rated load within 10 minutes and are best suited for peaking operation. The gas turbine generators would be equipped with a natural gas fuel system and would utilize water injection to limit NO_x emissions and in the inter-stage compressor cooling sprays to enhance the output. An inlet air-chilling package would increase the output during higher ambient temperatures. The LM6000 Sprint can achieve high fuel utilization of 8910Btu/Kwhr (LHV), or an efficiency of 38.3 percent at full load operation, after accounting for the plant auxiliary power consumption. The gas turbines would be equipped with inlet guide vanes to improve the part load efficiencies. Part load operations will result in slightly lower efficiencies. Though the plant is expected to operate at full load, the units will also be designed for part load and cycling duty capabilities.