VAST POWER Systems
Value-Added Steam Technologies

10 VAST® Advantages in Power Generation

BREAKTHROUGH GRID RELIABILITY FOR RENEWABLES

1. **VAST Cycles** over traditional peaker/balancer Brayton cycles
   - **increase power generation efficiency by 24%**
   - **reduce fuel use by 19%** per MWh
   - **reduce CO_2 by 19%** at 100 MWe
2. **VAST's ultra-clean combustion achieves less than 1 ppmvd NO_X & CO** without catalytic treatment (parts per million by volume dry at 15% O_2)[1]. That is ~10 X better than today's best gas turbines and is <50% of California's limits.
3. **VAST increases net power by > 60%** using gas turbines with the same expander converted to our patented VAST Power Cycle.
4. **VAST lowers CapEx/MW by 37%** versus a Brayton cycle (peaker) gas turbine and is 48% lower than a combined cycle (1 gas turbine and 1 steam turbine).
5. **VAST increases IRR markedly** above both simple and combined cycle gas turbines, by lower CapEx/MW and higher efficiency than peaker turbines.
6. **VAST's precise thermal management** reduces turbine fatigue, significantly increases lifespan and reduces maintenance requirements.
7. **VAST supports the >105% dispatchable backup** essential to reliable, renewable grids.
8. **VAST holds 28 active patents**, with more being filed. Over 1,829 forward citations highlight the value of VAST's issued patents, demonstrating current commercial relevance to leading industrial firms.
9. **World-class Research Collaborators** include U.S. Department of Energy, Argonne National Labs, Lawrence Livermore National Labs, Gas Technology Institute (GTI), Prairie View A&M University, and others.
10. **The VASTeam™** consists of seasoned leaders who helped build companies that revolutionized major industries leading to exits earning more than $750M.

[1] Would establish lower emission requirements in BACT, LAER, and California-BACT regulations.

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