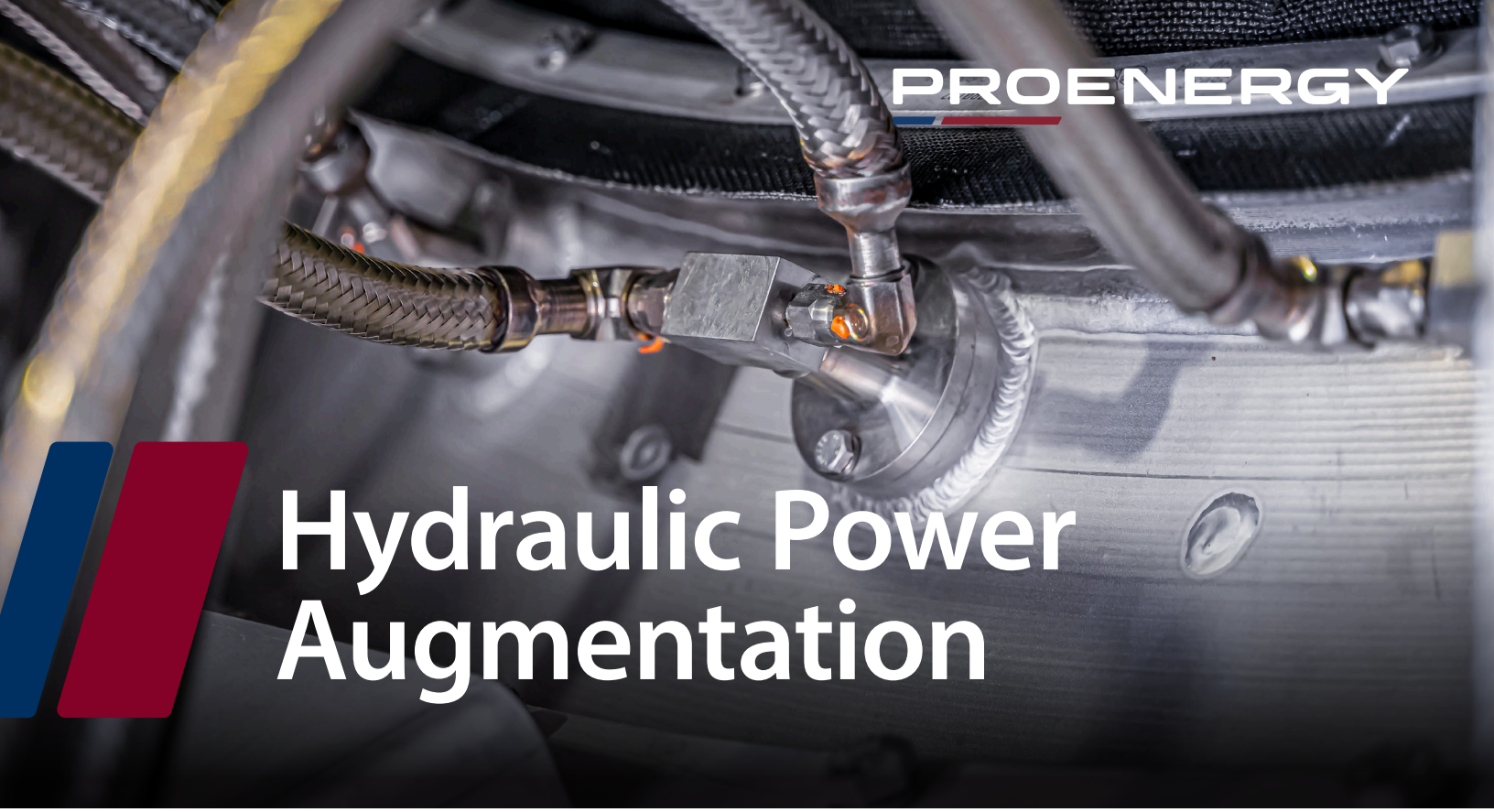


PROENERGY

# Hydraulic Power Augmentation

## MORE POWER. ALL THE TIME.

Gain up to 3 MW of power from your engine. A direct replacement for water-spray injection, PROENERGY hydraulic power augmentation (HPA) reclaims the 350-kW parasitic power loss from compressor bleed air to give you more power whether the system runs or not.

Our HPA outperforms all legacy technologies by atomizing water to less than 20 microns. These tiny droplets not only reduce the erosion of Stages 0-4 low-pressure compressor (LPC) airfoils, but also maximize profitability by offering more power on demand. Compared to your current system, Stage 1 HPA increases flow rates by 20 percent to deliver 500 kW more power, and Stage 2 HPA doubles your current flow rate to gain up to 2.1 MW per engine.

The system requires no significant modifications to the turbine or package and no changes to the inlet volute.

### Power Up

**Stage 2 HPA**
2.1 MW* more power
18 gpm flow rate

**Stage 1 HPA**
7.8 MW* more power
22 gpm flow rate

**HPA Inactive**
+350 kW more power
0 gpm flow rate

Legacy technology maxes out at 7.3 MW* more power, not counting a 350-kW parasitic loss. HPA gives more.

*Measured at 96°F ambient and 57% humidity

**Powerful**

**+2.95 MW**
More Power With Stage 2 HPA

**Forceful**

**2X**
Flow Rate of Legacy Systems

**Simplified**

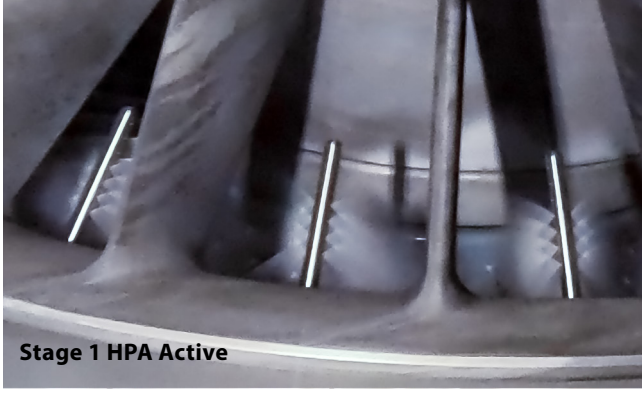
**<1 DAY**
Downtime for Installation

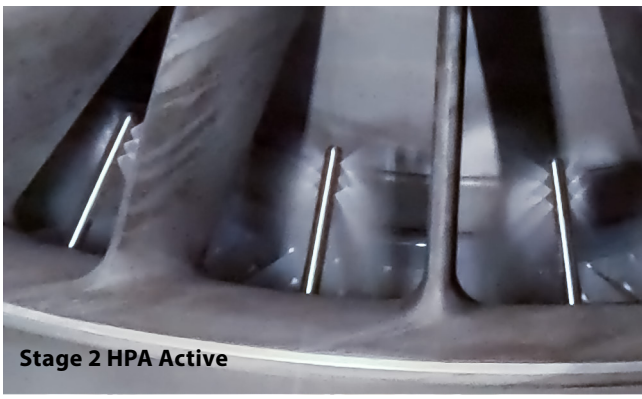
PROENERGYSERVICES.COM/HPA

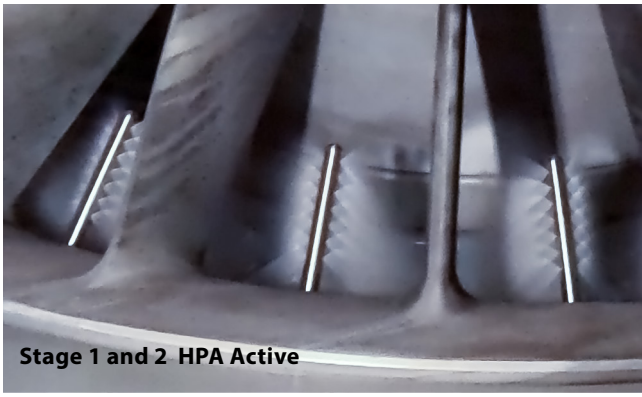
# More Power.
## Less Erosion. No Hassle.

Legacy water-spray injection systems deliver more power at the cost of engine output and LPC blade erosion. These systems require open high-pressure compressor (HPC) 8th stage bleed air, which reduces output by 350 kW. PROENERGY HPA eliminates this parasitic loss.

Without the need for bleed air, our system atomizes water to less than 20 microns, or one-sixth the size of droplets from your current system. These tiny droplets reduce LPC blade erosion by producing a homogeneous water-air mixture and improving absorption of water into the turbine air stream. HPA also offers operational flexibility for power augmentation with an optional fogging configuration.


Stage 1 HPA Active

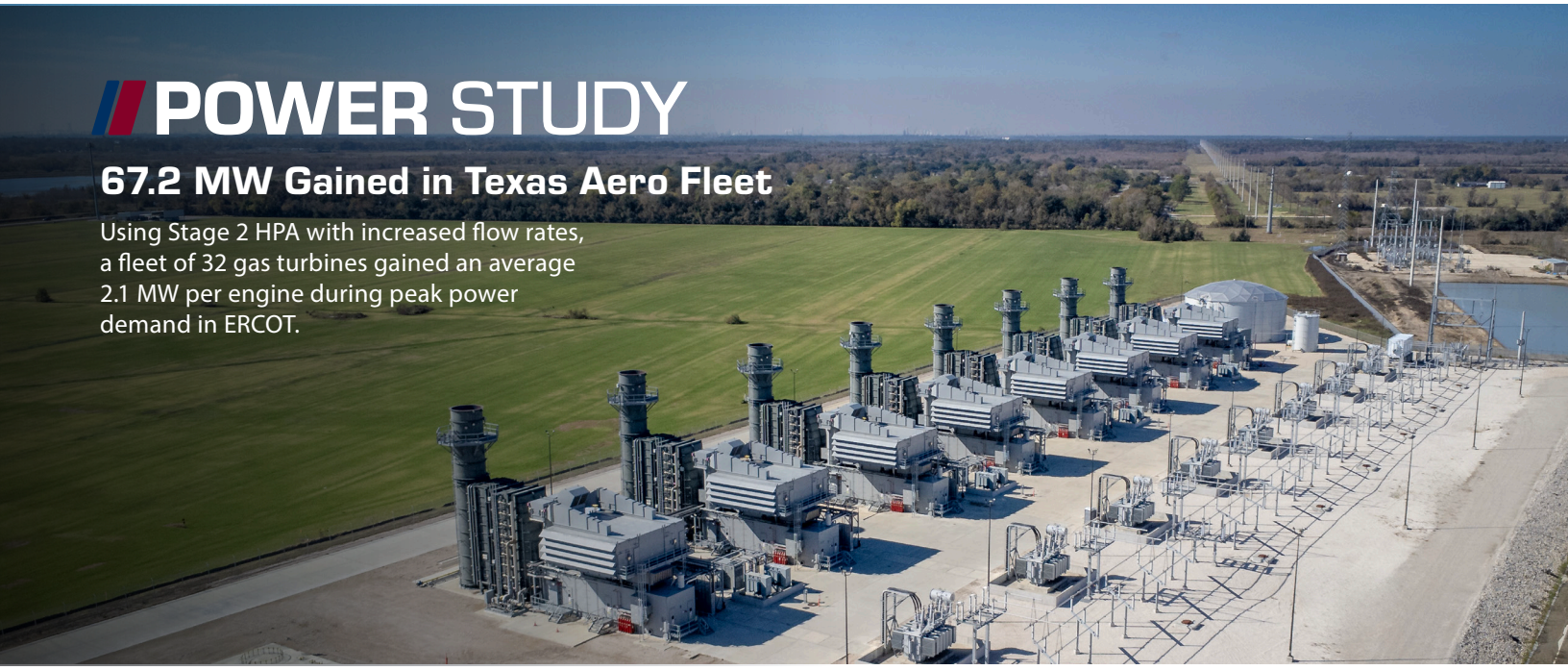

Stage 2 HPA Active


Stage 1 and 2 HPA Active

## Turnkey Power Augmentation

Your HPA system includes:

- Pump skid
- Customizable 50-hp pumps
  - Pump 1—Stage 1 HPA
  - Pump 2—Stage 2 HPA
  - Pump 3—Fogging
- 23 HPA nozzles
- Inlet volute–mounted manifolds
- Interconnect tubing, hoses, and wiring
- Controls modification



## POWER STUDY

### 67.2 MW Gained in Texas Aero Fleet

Using Stage 2 HPA with increased flow rates, a fleet of 32 gas turbines gained an average 2.1 MW per engine during peak power demand in ERCOT.