CIMES Modular Power System Fuel-Free • Silent • Zero-Emission Power for Hyperscale Data Centers

Executive Summary

The CIMES conical magnetic rotary motor offers a revolutionary solution for hyperscale data centers facing exploding energy demand, rising costs, and pressure to eliminate fossil fuels.

The **CIMES Six-Pack (or N+2) Modular Configuration** delivers 180–300 MW of continuous, fuel-free power in containerized skids. Each 30–50 MW module is hot-swappable — one or two units can be serviced while the others keep the data center running at 100 % capacity.

Zero fuel. Zero emissions. Near-silent operation. 99.999 % uptime. Proven in seven multi-physics simulations and ready for deployment.

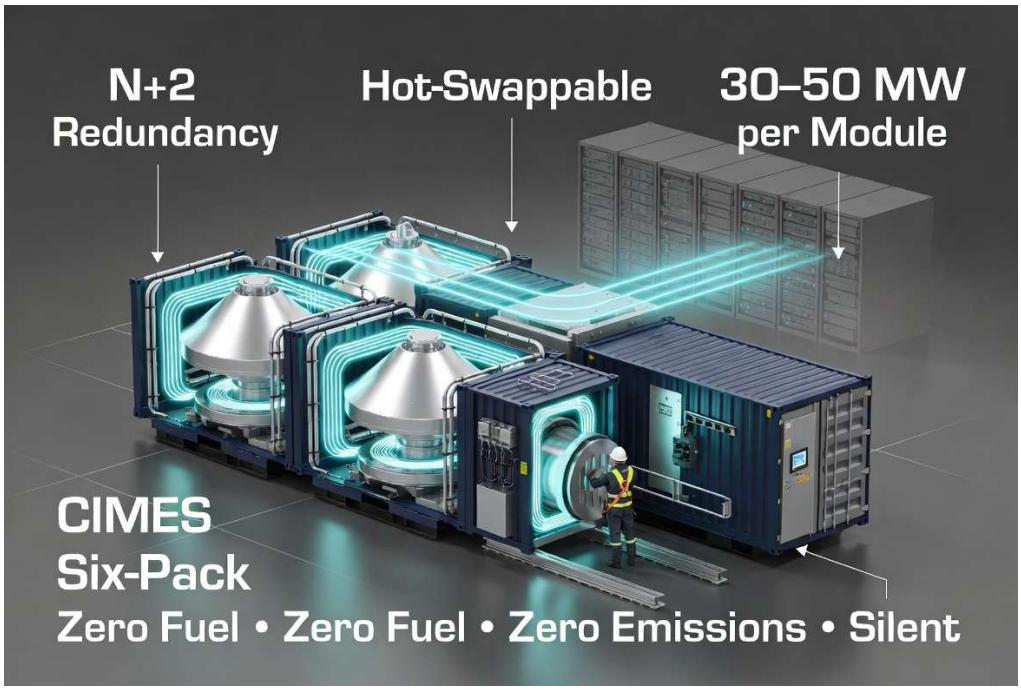
1. The Data Center Power Challenge

Modern AI-driven data centers require hundreds of megawatts of reliable, 24/7 power. Traditional solutions (diesel generators, gas turbines, batteries) create noise, pollution, maintenance downtime, and massive fuel costs. CIMES eliminates all of these issues through permanent-magnet repulsion in a patented 28° conical design.

2. System Architecture – The CIMES Six-Pack

The recommended configuration for a 220 MW facility is six identical 40 MW modules arranged in containerized skids (N+2 redundancy).

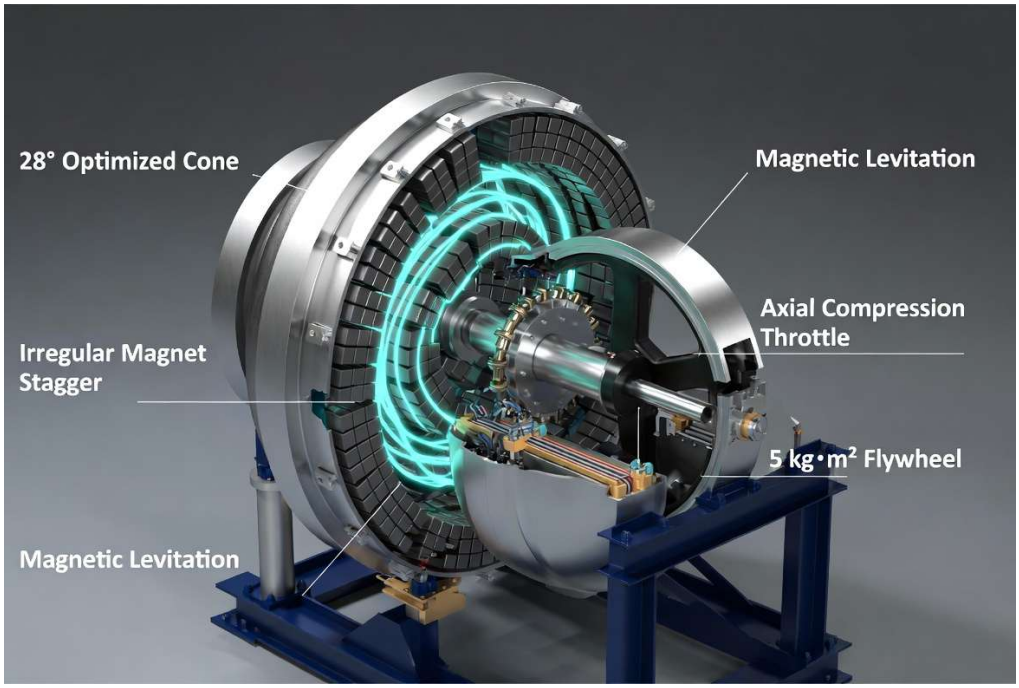
Figure 1: CIMES Six-Pack Modular Power System – Isometric Overview



3. Single Module Design (Scalable 30–50 MW)

Each module uses the same proven 28° cone geometry and irregular 40-magnet stagger pattern, simply scaled up. No combustion, no fuel, no exhaust.

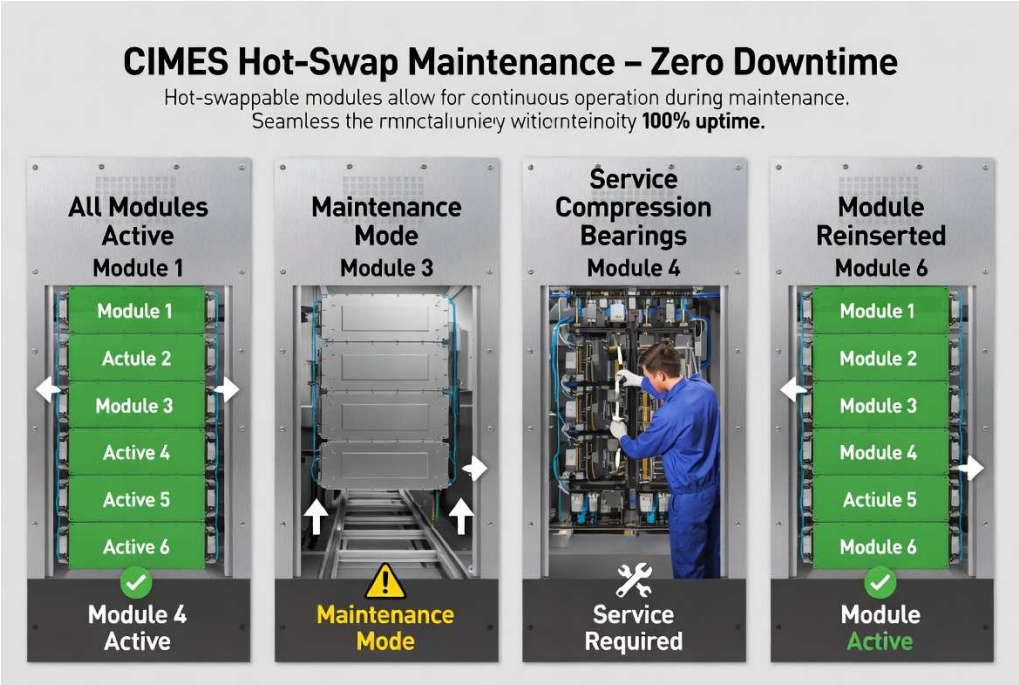
Figure 2: Single CIMES Module Cutaway – Internal Details



4. Redundancy & Maintenance – True Concurrent Maintainability

One or two modules can be taken offline for service while the remaining units carry the full load.

Figure 3: Hot-Swap Maintenance Sequence (4-Panel)



5. Technical Specifications (Per Module)

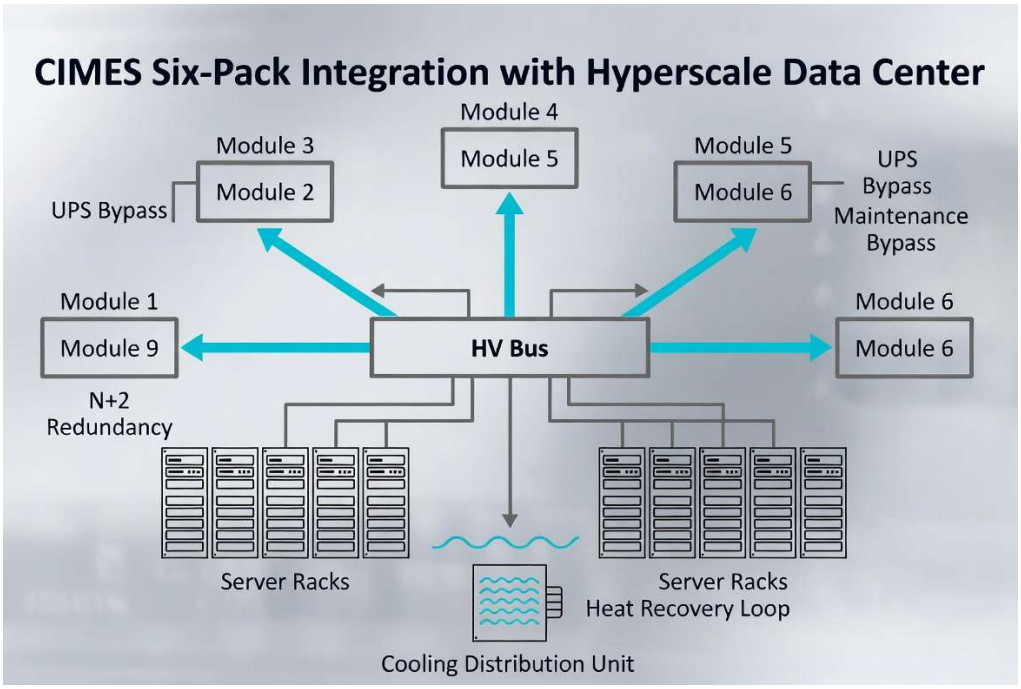
- Power output: 30–50 MW continuous
- Torque: Scaled r^3 law (validated in simulations)
- Efficiency: 92–96 % (vacuum-ready variants higher)
- Ripple: <8.5 % with flywheel damping
- Operating temperature: <80 °C (natural or forced-air cooling)
- Noise: Near-silent (no combustion)
- Emissions: Zero
- Footprint: Standard 40-ft container skid per module

Table 1: Six-Pack Performance Summary (Insert simple table in Word: 6 × 40 MW = 240 MW nominal, N+2 gives 160 MW minimum with two offline)

6. Data Center Integration

CIMES modules connect directly to the facility's electrical bus via standard switchgear. Waste heat can feed the data center's liquid-cooling loop for additional efficiency.

Figure 4: Power Flow & Integration Schematic



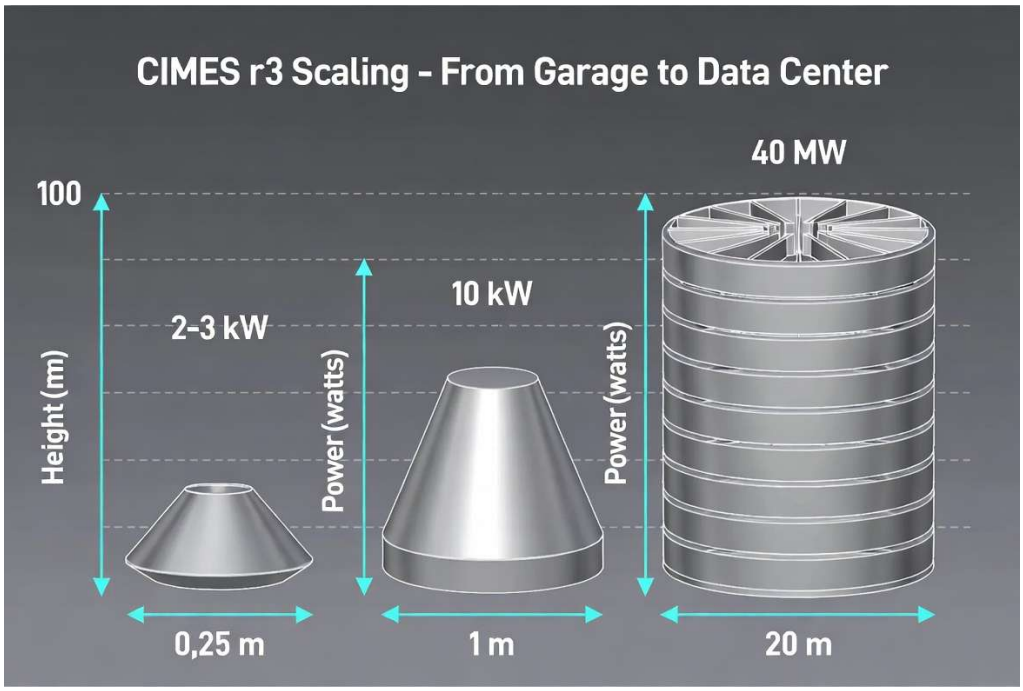
7. Environmental & Economic Benefits

- Zero fuel cost after installation
- Zero CO_2 emissions
- Dramatically lower operating expense vs diesel/gas
- Meets or exceeds Tier IV uptime requirements
- Ideal for locations with strict emissions regulations

8. Next Steps

The 10 kW and 2–3 kW prototypes are already build-ready. Scaling to 30–50 MW modules follows the same proven geometry. Full CAD files, simulation data, and licensing discussions available upon request.

Figure 5: Scaling from Prototype to Data Center



Download full CAD files and simulation reports at www.simulationchallenge.com