



Clean & Compliant Backup Power for the Data Center Era

LIMitNOx™ SCR (DeNOx) Solutions from
Environmental Energy Services

www.eescorp.com

HEADQUARTERS

5 Turnberry Ln
Sandy Hook, CT 06482, USA

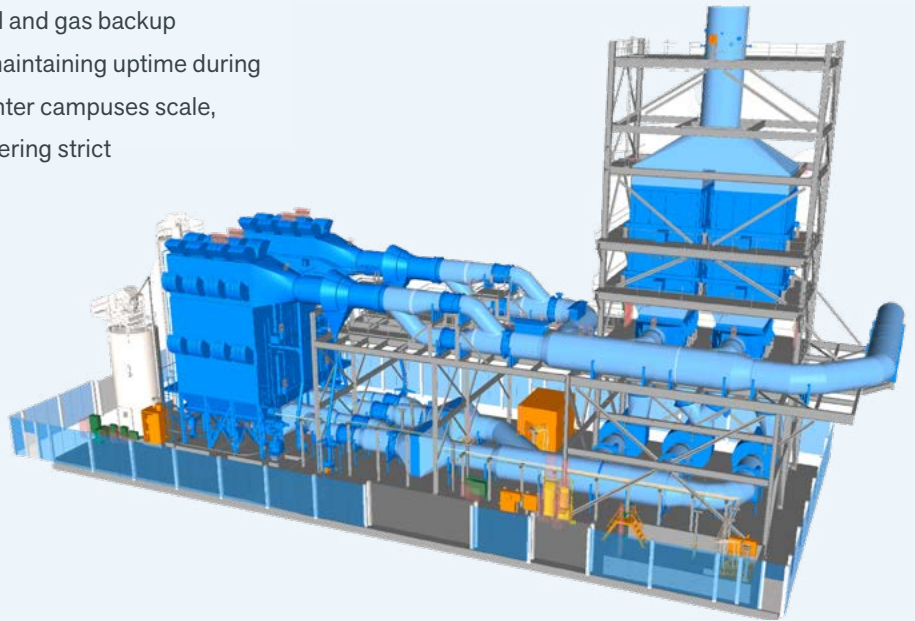
CONTACT

+1 (203) 270-0337
info@eescorp.com

NO_x CHALLENGES IN THE AGE OF MODERN DATA CENTERS

Modern data centers support mission-critical applications across AI, cloud computing, banking, healthcare, and national security. To meet stringent uptime and resiliency requirements, facilities are deploying larger and more frequent on-site backup generation systems. As this installed base expands, controlling nitrogen oxide (NO_x) emissions has become a central environmental and permitting challenge under tightening federal, state, and local air-quality regulations.

NO_x is produced during combustion in diesel and gas backup generators and auxiliary boilers, critical for maintaining uptime during emergencies and routine testing. As data center campuses scale, many classify as major sources of NO_x, triggering strict air permitting requirements, annual tonnage caps, and, in many regions, Tier 4-equivalent standards. These limits are tightening across North America, Europe, and Asia as municipalities seek to protect local air quality near dense urban and suburban developments.



FOR OWNERS, THE CHALLENGE IS CLEAR:

How do you preserve absolute reliability while achieving near-zero emissions?

WHY SELECTIVE CATALYTIC REDUCTION (SCR) IS NOW ESSENTIAL

Selective Catalytic Reduction (SCR) technology stands out as the gold standard for NO_x control in backup and standby generation. It injects a precisely metered reagent into the exhaust stream and catalyzes the conversion of NO_x into nitrogen and water vapor – often achieving over 90% reduction without sacrificing power output and enabling compliance with even the most aggressive air permits.

Benefits for data center operators include:

MORE OPERATING HOURS

with fixed emissions caps

FUTURE-PROOFING FOR FUEL FLEXIBILITY

including HVO and emerging low-carbon fuels

LOWER COMMUNITY IMPACT

with integrated noise and opacity control

SCALABLE DEPLOYMENT

across phased campus expansions

As more jurisdictions restrict uncontrolled standby generation, SCR is rapidly shifting from a regulatory add-on to a core infrastructure requirement.

THE EES DIFFERENCE

DeNOx Solutions with LIMitNOx™ for Mission-Critical Applications

Environmental Energy Services (EES) specializes in advanced emissions control, including the proprietary LIMitNOx™ SCR platform tailored for challenging applications like fast-start generators in data centers and distributed power.

CORE TECHNICAL ADVANTAGES OF EES SCR SYSTEMS



Modular Reactor Architecture

Vertical or horizontal configurations tailored to space constraints, exhaust layout, and acoustic requirements.



Integrated Acoustic & Emissions Control

SCR-silencer combinations enable full compliance with both air quality and noise ordinances in urban data center zones.



End-to-End System Integration

From catalyst selection and reactor housing to reagent injection, dosing skids, PLC logic, and continuous NOx monitoring.



Automation-Ready Controls

Compact PLC platforms provide real-time emissions logging, ammonia slip minimization, and remote system diagnostics.



Proprietary NOx Instrumentation

EES designs and manufactures analyzers for superior accuracy, closed-loop control, and compliance assurance.



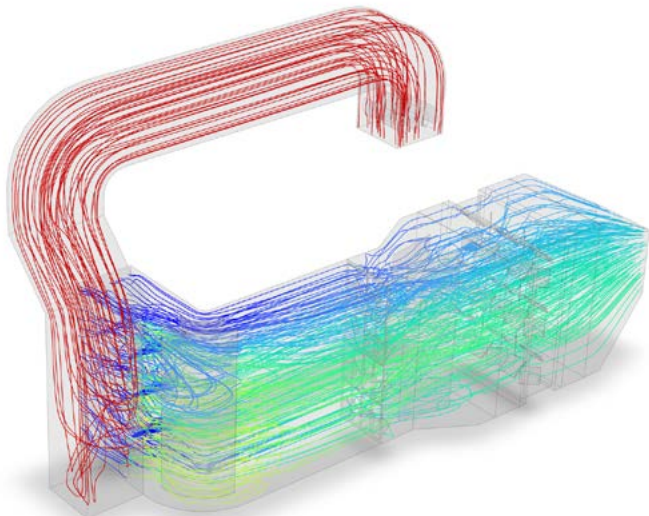
Lower Total Cost of Ownership

Optimized catalyst life, reduced reagent consumption, and minimal maintenance intervention.



Advanced CFD Flow Modeling

Each project uses Computational Fluid Dynamics (CFD) to optimize reagent mixing, temperature distribution, and catalyst utilization before fabrication.



Designed for Hyperscale, Colocation & Edge Data Centers

EES' LIMitNOx™ SCR SYSTEMS ARE ENGINEERED FOR THE FULL SPECTRUM OF DATA CENTER ARCHITECTURES:

HYPERSCALE CAMPUSES

with multiple synchronized
generator blocks

COLOCATION FACILITIES

requiring scalable, modular
compliance

EDGE DATA CENTERS

operating near population
centers with ultra-tight
permits

MICROGRIDS & ISLANDABLE POWER SYSTEMS

supporting grid services
and peak shaving

Globally, SCR deployments across data center fleets have demonstrated that large-scale emissions abatement can be achieved without compromising uptime, acoustic comfort, or expansion flexibility.

ENABLING COMPLIANCE, RESILIENCE & ESG LEADERSHIP

Operators today face simultaneous pressure from regulators, investors, hyperscale customers, and local communities. EES LIMitNOx™ SCR systems directly support:

- 01 Air permitting compliance across Tier 2, Tier 4, and local district limits
- 02 Expanded runtime capacity without raising emission exposure
- 03 Lower reported ESG intensity for on-site generation
- 04 Community acceptance through near-zero smoke, opacity, and odor
- 05 Future adaptability as fuel regulations and grid roles evolve

EES: Your DeNOx Partner for the Digital Power Economy

As AI workloads, cloud expansion, and grid congestion reshape the data center power landscape, emissions control is no longer optional—it is core infrastructure. LIMitNOx™ delivers the engineering depth, system reliability, and field-proven performance required to support clean, compliant, always-on power at scale.

