VEIR Data Center Solutions

More Power, Less Space: Optimized Connectivity & Compute Density

VEIR

DELIVERING 10X POWER DENSITY

Advanced Power Delivery Systems for Data Centers, Generators, and Utilities

Why VEIR Technology

10X CAPACITY IN THE SAME AMOUNT OF SPACE

Conventional technology cannot meet the complex power and infrastructure needs of data centers, generation, and power grid expansion. VEIR's advanced conductors & cooling systems eliminate the restrictions that delay new data center construction: increasing transmission capacity, removing power delivery bottlenecks, and enabling better performing solutions with simpler designs.

10x
the capacity of conventional alternatives

>10x
the distance for carrying power

>95%
less voltage drop vs. today's solutions

Data Centers & Industrials

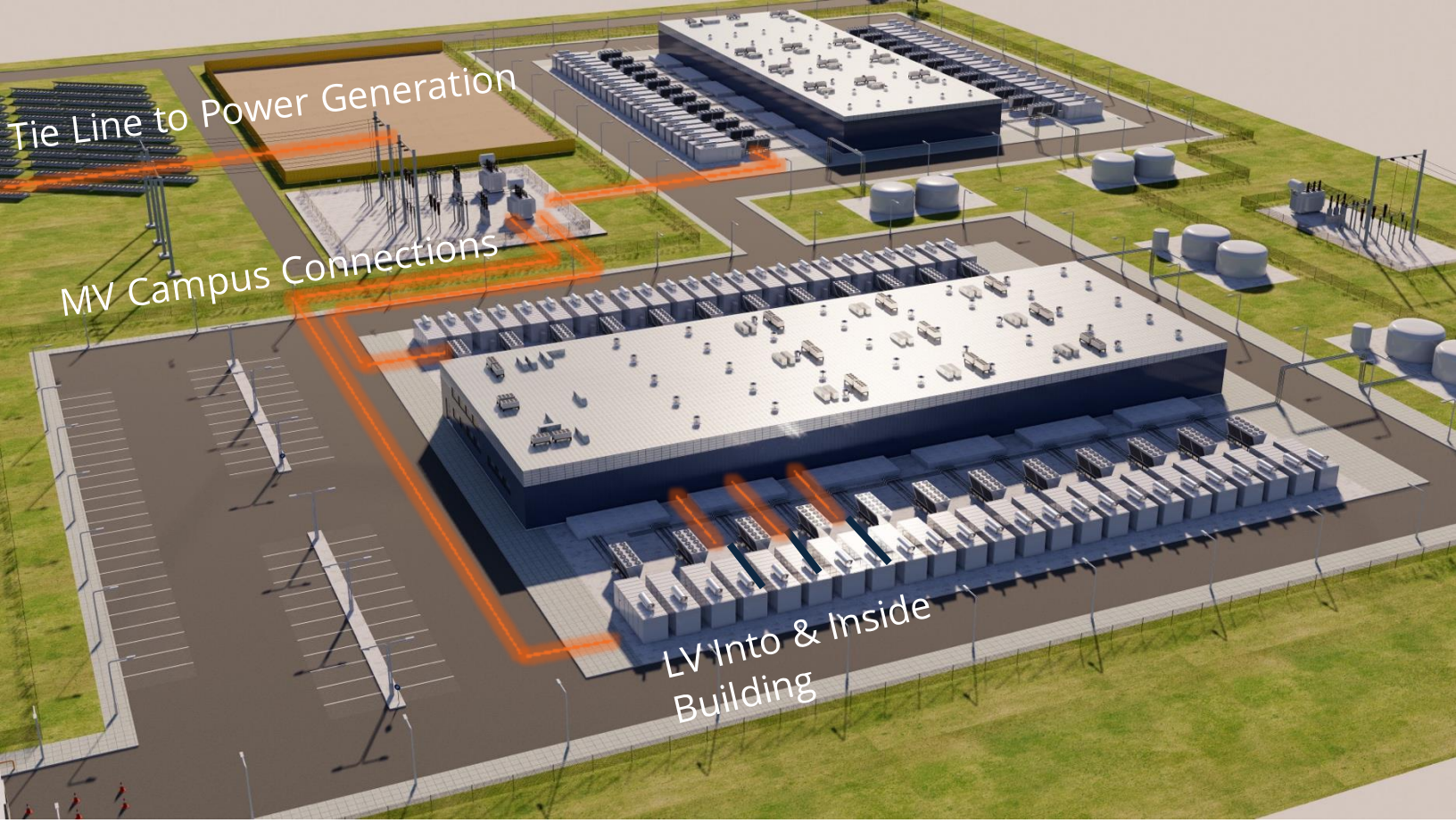
Connect data center campuses faster and optimize compute density by increasing power delivery capabilities in less space

Generation Interconnection

Empower developers to build projects and deploy generation at previously difficult locations due to transmission constraints

Power Grid Expansion

Enable more capacity in smaller corridors adding much-needed capacity to the grid while triggering fewer siting and permitting requirements than conventional lines



VEIR Superconducting Data Center Applications

Simplify data center design today and be ready to scale for tomorrow

AI's appetite for computational power is rapidly increasing data center scale and power density. Conventional power delivery solutions require more space and generate more heat and losses to scale, ultimately sacrificing design flexibility and performance for increased power delivery capacity.

VEIR's high-density power delivery solutions can rapidly scale power capacity from grid to chip and help optimize data center design, today, while future-proofing additional expansion, tomorrow.
VEIR solutions can:

- Quickly interconnect AI data centers and campuses or rapidly expand existing tie line capacity
- Interconnect buildings and on-site generation assets for the best use of campus space.
- Deliver more power in AI data centers with optimal layouts that maximize compute performance

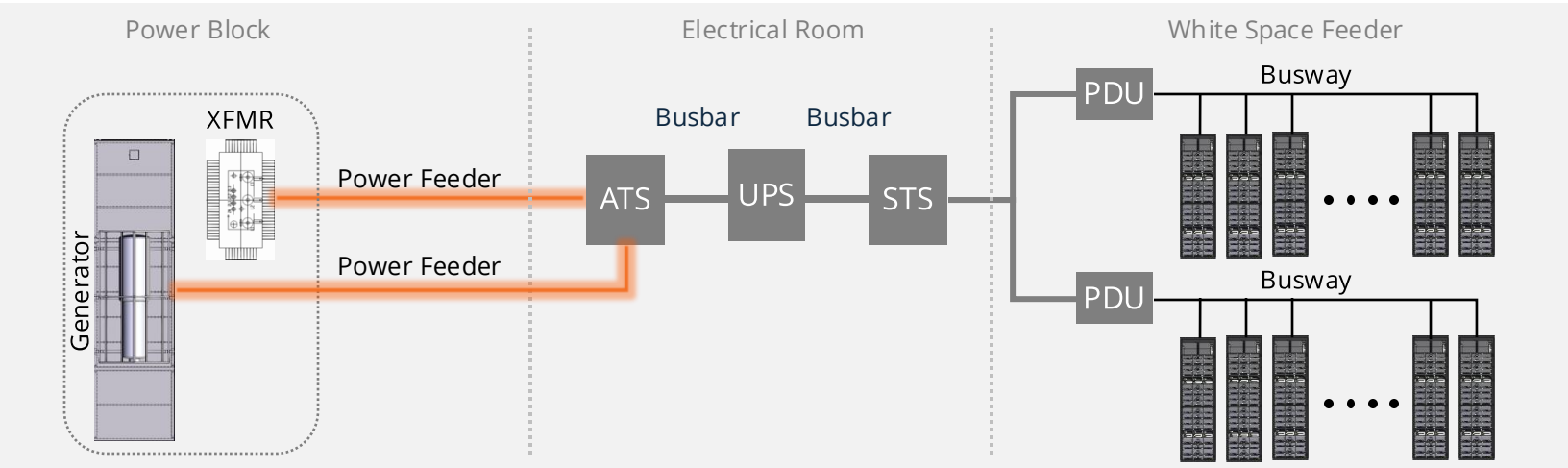
VEIR's products scale across voltages with low, medium and high-voltage offerings spanning 48 V to 275 kV. By using superconductors and advanced cooling methods, VEIR's solutions have 10x the density of conventional power delivery options, near zero resistive losses and 95% lower voltage drop. VEIR products also actively manage heat, delivering consistent power regardless of ambient temperature and generating limited to no additional heat. As a result, VEIR solutions offer:

- Reliable, high-capacity, high-density power delivery
- Design flexibility
- Ability to seamlessly expand power capacity over time

VEIR's superconducting systems provide the architectural freedom that cannot be realized with traditional copper-wire solutions that take significant space and are distance-limited from losses.

VEIR Power Block Feeder

The number or size of power blocks that supply data centers increases as white space power needs grow. As a result, power blocks take up more room on campuses and congest the space just outside data center buildings. Conventional options to locate power blocks further away require stepping voltage up and then back down. VEIR's solution provides flexibility on where to locate power blocks, using a single voltage and a simplified electrical design. The compact size of VEIR's solution along with the avoidance of additional transformations reduce construction cost compared to alternatives.

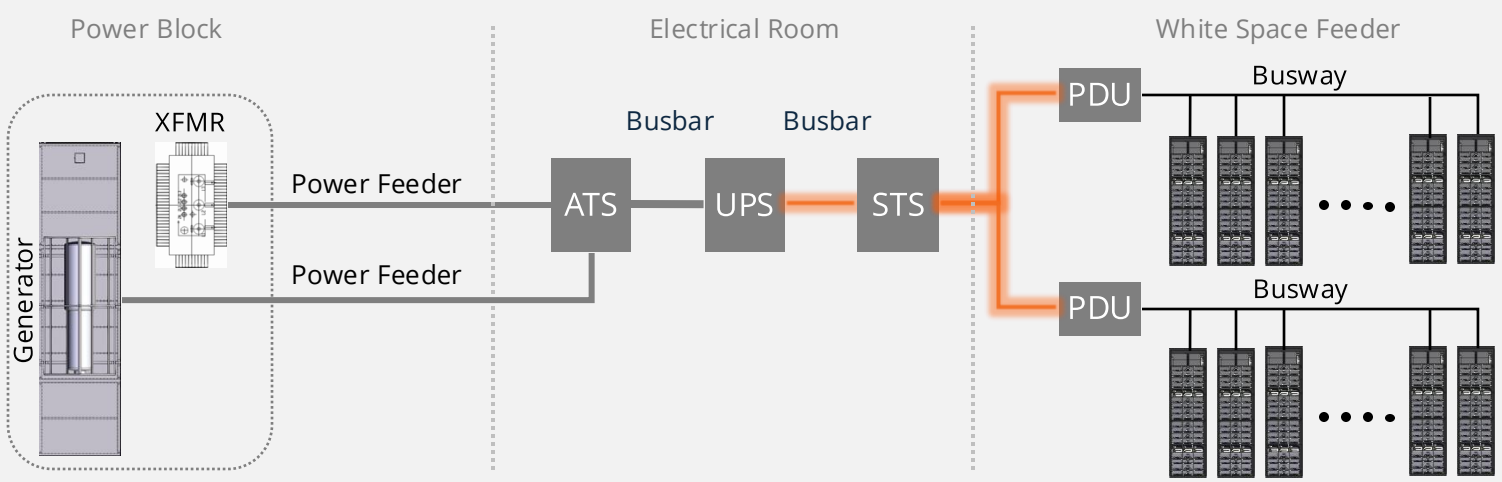


VEIR power block feeders simplify power distribution and offer flexible layouts to optimize campus layouts and reduce construction costs.

VEIR's low-voltage power feeders allow designers to place power blocks anywhere on campus. For example, a designer could place them next to the substation and carry power back to buildings at low voltages with minimal power losses, freeing up valuable space near buildings. VEIR provides the flexibility to optimize campus layouts.

VEIR White Space Feeder

Distributing power to revenue-generating white spaces in data centers is becoming increasingly difficult as server rack power consumption grows and space becomes limited. The use of advanced, liquid-cooling approaches further increases congestion with additional piping required in the already crowded ceiling and floor spaces. Conventional approaches to meeting growing power needs either reduces the number of AI racks per white space or places server nodes further apart, limits total computing capability or increases latency.

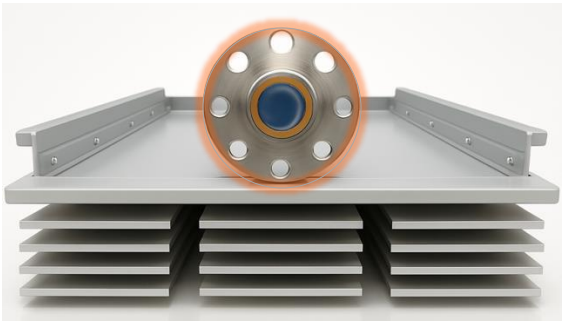


VEIR increases design options inside the building, helping scale compute power and achieving high server rack density.

VEIR's white space feeders eliminate many of the design constraints imposed by conventional options. With a significantly higher power density and the ability to span longer distances with lower voltage drop, white space designs can move beyond the 1 x1 adjacency paradigm and stack more servers per column. This allows designers to maximize white space computing capability despite growing server power use. VEIR's system is also lighter weight and uses active thermal management.

VEIR's power delivery solution inside the data center (highlighted in orange) is more compact and lighter than conventional options (pictured as grey)

Overhead View

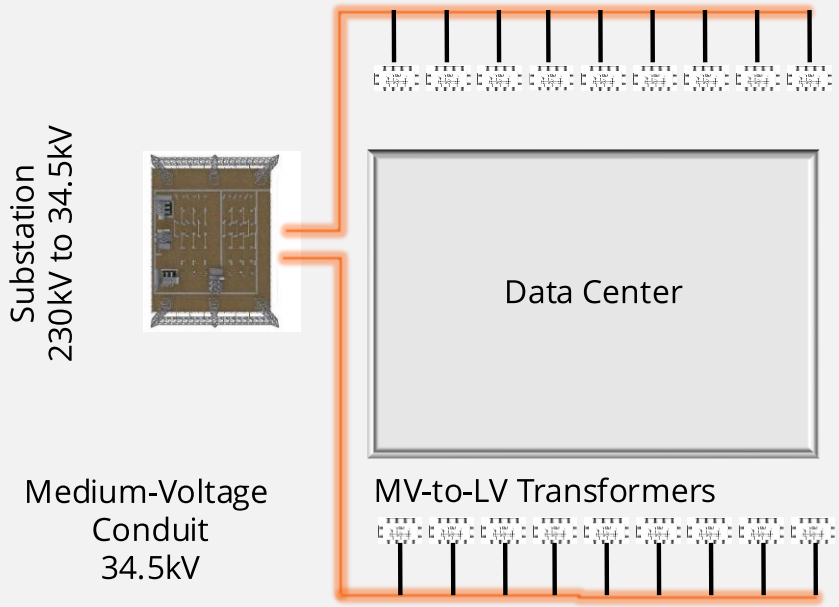


Front-facing View

10x smaller cross-section	10x less weight	≥10x lower voltage drop

VEIR Campus Power Distribution

As data center power requirements increase, so does the need for more onsite generation capacity. With conventional solutions, data center campuses need to deploy more lines or higher-voltage power cables and may require more power conversion equipment. Routing cables through large conduits throughout a campus can be labor and space intensive.

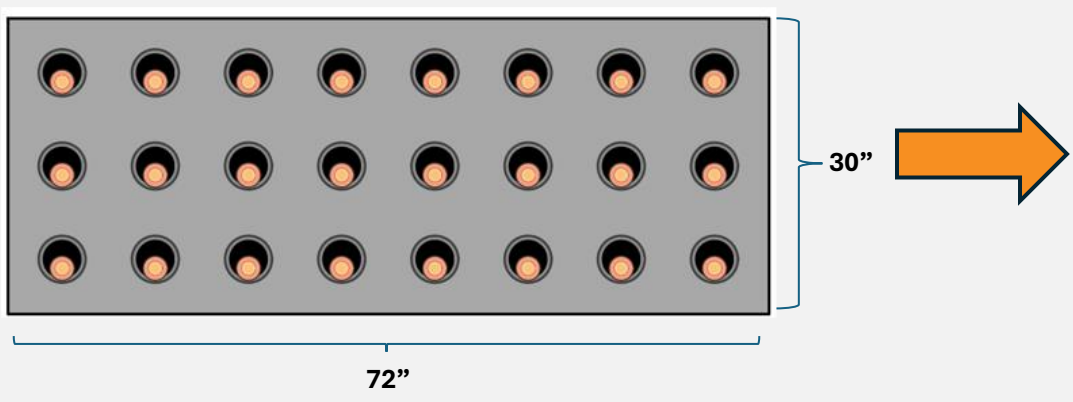


Because VEIR lines can deliver high power at lower voltages, fewer transformations are needed. Also, VEIR lines require smaller conduits for the same amount of power. Because VEIR lines operate with near zero losses, power distribution distances are also not a constraint.

Simpler installation with smaller trenches and reduced construction cost, and the ability to seamlessly expand capacity tomorrow.

With higher power density and active heat management, VEIR campus power solutions allow power to be distributed at lower voltages and in more compact configurations. VEIR lines can achieve over 40X reduction in the area required for routing power to a data center campus. By reducing the number of conduits, cable bundles, rebar and concrete, VEIR solutions significantly reduce installation costs.

Conventional Conductor Cableway
Cross-sectional area: 2160 sq in
Multiple conduits



VEIR Conductor Cableway
Cross-sectional area: 50 sq in
Single Conduit

VEIR Overhead Tie Lines

Permitting and building transmission lines to interconnect a data center campus is capital and time intensive. VEIR overhead tie lines offer high capacity at lower voltage, reducing project footprint, viewshed and timelines for deployment. VEIR lines can also expand the power capacity of existing corridors, avoiding the need to expand existing routes or find new ones.

Substations that feed tie lines can limit data center campus sites by taking up valuable space within a site or requiring too much space for a given power requirement. VEIR's tie lines reduce the size of substation upgrades by operating at lower voltages despite offering similar power. For example, a VEIR line operating at 69 kV can achieve what a conventional line would require at 230 kV. Alternatively, VEIR can help move substations offsite by connecting power at lower-voltages and longer distances than what conventional technology would prefer.

VEIR overhead transmission lines connect data centers to the grid faster and can reduce the size of substations or move them offsite.

5-10X line capacity in same area	3.5kA to 4.5kA flexible operation	10+ miles overhead lengths	100X resistive loss reduction	>50% smaller substations

VEIR Products & Services

VEIR offers a range of products services to help clients achieve optimal performance with VEIR solutions for data centers. Our services tailor designs to meet each client's unique needs and integrate VEIR's solutions seamlessly into preferred data center architectures and campus configurations.

- ✓ Products
  - SI Series. Low-voltage power delivery within and outside of data center buildings
  - SC Series. Medium to high-voltage power delivery within campuses and connecting to the grid
- ✓ Engineering Studies
  - Detailed design studies for VEIR solution integration
- ✓ On-Site Installation Support
  - Equipment delivery and quality inspections and approval
  - System installation inspection
  - Training on best practices for installation
- ✓ Startup and System Certification
  - Inspection, testing and reporting post startup
  - Startup certification
- ✓ Onsite Training
  - Training on system monitoring and troubleshooting
  - Best practices guidance and reference material to improve operator safety

VEIR

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