

# CenterPoint Energy Inc. Case Study

## About CenterPoint Energy Inc.

CenterPoint Energy, Inc., headquartered in Houston, Texas, is a domestic energy delivery company that includes electric transmission & distribution, natural gas distribution, and energy services operations. With more than 7,400 employees, CenterPoint Energy and its predecessor companies have been in business for more than 140 years.

### **Electric Transmission & Distribution (T&D)**

CenterPoint Energy, Inc. maintains the wires, poles, and electric infrastructure serving its 5,000 square mile electric service territory in the Houston metropolitan area. While employees ensure the reliable delivery of power from power plants to homes and businesses, the company neither generates power nor sells it to customers.

### **Natural Gas Distribution**

The company sells and delivers natural gas to 3.2 million homes and businesses in Arkansas, Louisiana, Minnesota, Mississippi, Oklahoma, and Texas, including the high-growth areas of Houston and Minneapolis.

### **Competitive Natural Gas Sales and Services**

CenterPoint Energy Services (CES), the company's natural gas marketing business, sells non-rate-regulated natural gas and related services to approximately 11,100 commercial, industrial, and wholesale customers located primarily in the eastern half of the United States.

### **Home Service Plus® (HSP)**

For over 80 years, HSP has provided heating and cooling solutions for Minnesota homeowners. HSP proudly offers expert repair, along with service and maintenance plans, and professional sales for both gas and electric equipment.

**PANDUIT®**



**Company:** CenterPoint Energy Inc.

**Country:** United States

**Industry:** Electrical Distribution, Gas Distribution, Competitive Gas Sales & Service, Home Service Plus

**Business Challenges:** To unify information and communication technology (ICT) physical infrastructure to ensure business continuity and a robust design capable of lasting for 30+ years.

**Panduit Solution:** Panduit's Converged Infrastructure Solution included:

- Fiber and copper cabling for 10/40/100Gb
- Dual Tier Overhead cable tray for fiber and copper pathways
- Dual 415 Volt 60 AMP Smart PDUs
- Above Cabinet Overhead Patching Units
- Cooling optimization solution
- Comprehensive telecommunication grounding and bonding system
- Thermal containment solution using vertical exhaust ducts that coordinates with CenterPoint's HVAC design

**Business Benefits:** A fully converged infrastructure solution that includes a resilient, reliable, adaptable physical infrastructure equipped with a comprehensive DCIM solution.

## Designing a future-proof, consistent platform across all business units and locations

Panduit empowers CenterPoint Energy to optimize uptime, efficiency, security, and capacity while achieving business continuity and resiliency for the next 30+ years

### Business Challenges

In 2013, CenterPoint Energy found itself struggling to unify its IT physical infrastructure platforms across all internal business units and within each facility. The company was working with multiple vendors at multiple offices in multiple cities. This approach led to several coordination and communication issues, which caused unnecessary delays and downtime.

CenterPoint Energy was using a DCIM solution to manage asset locations in its cabinets, but the solution was not integrated with any power or environmental data. Therefore, arranging server locations involved gathering additional information from other sources, which was extremely time-consuming.

Furthermore, power was not being managed in a comprehensive manner: power visibility depended on physical inspection of the power distribution units (PDUs) in a cabinet. This ensured that there would always be enough power in a cabinet by limiting the number of servers to a minimum.

In addition, environmental data was non-existent at the cabinet level, access to the cabinets was available to anyone allowed in the data hall, and there was no way to provide input to the Building Automation System (BAS) to automate and optimize airflow.

Finally, the cabling installation schedule was extremely aggressive. The entire data hall (12,000 square feet) needed to be completely cabled in less than six weeks with 12,000 feet of copper and approximately 12,000 feet of fiber custom trunks.

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*“We required a solutions provider that could deliver comprehensive technological advancements while helping us ensure business continuity.”*

– Tom Tanous  
Sr. Manager,  
Business Resilience & Data Center Management

## Strategic Objectives

CenterPoint's first priority was to implement a solution that would allow it to fully unify the physical infrastructure, enabling it to operate efficiently to its maximum potential. The company also required a resilient, reliable, adaptable solution that could support its business needs well into the future.

The solution needed to unify CenterPoint's ICT physical infrastructure across all business units and provide consistency among all its locations. The company also needed this solution to include a robust disaster recovery site to ensure long-term business continuity. To find one company that could bring these goals to fruition, CenterPoint appointed a task force to conduct a complete evaluation of all available vendors. During this process, Panduit's Professional Services team performed an informal peer review with CenterPoint's IT and Facilities groups and their related contractors. After this review, CenterPoint determined that the only way to ensure the unified, robust design it required was to hire Panduit Professional Services.



## Panduit Solution

CenterPoint Energy chose Panduit Intelligent Data Center Solutions, which include Data Center Infrastructure Management (DCIM) software, hardware, and infrastructure solutions to optimize its data center upgrade. The Panduit team worked in close collaboration with CenterPoint's network solution architect and mechanical, electrical and plumbing design consultants to implement this solution.

After careful consideration, Panduit and CenterPoint decided to implement the SmartZone™ DCIM Software Suite, including asset and connectivity tracking, power and thermal management, and environmental and cooling optimization modules. The software offers a holistic method to document, monitor, and plan for asset location, power capacity, environmental conditions, and security in CenterPoint's data center.

CenterPoint's initial goal was to implement a small primary cabinet containing PDUs by redesigning its overall structured cabling system at the existing data center. However, the company soon discovered that it also required a universal cabling architecture that would enable rapid growth without having to add new cables as the data center production expanded. This meant that the structured cabling system needed to be pre-installed in all open spaces along the rows where new cabinets would be pre-configured, then rolled into place. The new cabinets would have to be efficiently connected to the core services for immediate turn-up and commissioning. An overhead cabling and patching strategy was employed to accomplish this goal.

CenterPoint also needed to support network speeds of up to 40/100GbE as well as Out of Band management (OOB). The cabling infrastructure design would consist of OM4 and OS1 fiber and Category 6A copper. Panduit featured its QuickNet™ copper and fiber optic cabling system that employs pre-terminated cable trunks for both fiber and copper. Panduit specified the use of PanMPO™ connectors on all fiber trunks to enable CenterPoint to reconfigure the connector interface as needed.

Thermal management was added via vertical exhaust ducts that were installed on each cabinet within the data hall. These ducts provide efficient heat rejection into the overhead plenum return space for recirculation into the Computer Room Air Handler (CRAH) units located in the perimeter CRAH gallery outside of the data hall space. This strategy provides both adequate cooling and low noise.

The Intelligent Management Systems (IMS) team at Panduit focused on designing, implementing, and commissioning the SmartZone™ Solutions. Furthermore, the IMS team developed custom job aids with detailed instructions on how to install the hardware and worked alongside the installer on the initial cabinets to ensure a robust and efficient process. Over the course of several months, the software was installed and configured, and a follow-up visit was made to verify and validate the operation of the hardware and software. Throughout the process, IMS Services was fully focused on customer adoption of the solution, providing on-the-job and hands-on training followed by formal on-site training.

## Business Benefits

Panduit's Intelligent Data Center Solutions accelerated and simplified CenterPoint's design and deployment cycles, significantly optimized its operations, and greatly improved its total cost of ownership. Some highlights are:

- The SmartZone™ Asset and Connectivity Module produces and maintains rack elevation drawings of all rack-mounted assets, and provides cabinet capacity and availability data.
- The server deployment process changed from a spreadsheet and visual inspection process to a software-driven process, which locates available rack space in the Asset Module and available power and environmental conditions in the SmartZone™ DCIM Power Module.
- The SmartZone™ Cooling Module monitors all temperature and humidity sensors at the cabinet level and reports the values in near real time and in historical trending charts. It also provides a LiveImaging™ feature of the data hall, showing hot spots and providing temperature data points to the BAS so it can adjust air pressure/airflow.
- The Technology Systems Control Center (TSCC) now has access to the Enhanced Reporting Module (ERM) reports, which send an alert when the temperature or a PDU breaker current is too high.
- Cabinet access is now controlled via keypad code and unused PDU outlets are turned off, preventing other departments from installing servers without following the proper process.

*"We are pleased with the results and are moving forward on several additional projects with Panduit, including the installation of additional environmental monitoring for two data centers, including remote offices which have critical operations. Additionally, CenterPoint Energy is deploying Panduit Cabinet Solutions to all new and upgraded service centers around the country. All of which is monitored 7x24 within CNP's Technology Systems Control Center. Overall, Centerpoint Energy plans to implement Panduit's model across our corporate platform," said Tanous.*



# PANDUIT®

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