

227-MILE 345-kV CREZ TRANSMISSION PROJECT

Blattner Energy managed and executed the construction of 227 miles of a 319-mile Competitive Renewable Energy Zone (CREZ) transmission project in Texas.

PROJECT OVERVIEW

Completed in 2013, the 227-mile CREZ transmission line project in Texas included installation of more than 190 miles of double circuit and 35.5 miles of single circuit transmission on horizontal double bundle core conductors. Structure installation included the direct embed of more than 1,800 concrete and steel poles plus 34 steel poles on caisson foundations.

A line construction of this size would typically require more than two years to complete. Blattner Energy built the line in just 14 months—one of the shortest schedules ever achieved for a project of such magnitude.

Blattner's complete scope of work on the project included: right-of-way clearing, access development, erosion control, fence and gates, pole off-loading, foundation installation, grounding and bonding of poles, framing, pole installation, anchors/guys, stringing/clipping (conductor, OHGW, and OPGW) and reclamation. Blattner's success hinged on its proven construction management expertise and ability to self-perform work with a commitment to speed, safety and quality.

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CHALLENGES

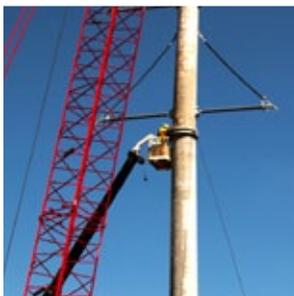
Blattner navigated typical challenges for a large transmission project, including geotechnical conditions ranging from unconsolidated wet silt to 25,000 psi rock, extreme precipitation, as well as regulatory and permitting delays. In addition, several unique challenges allowed Blattner to demonstrate its ability to adapt quickly.

- Due to engineering and landowner issues, Blattner was forced to begin construction on the opposite end of the line than was planned. The new starting point included land with the most challenging geotechnical conditions on the line. Combined with low elevations and wet spring weather, it created immediate problems with drilling. However, Blattner did not delay the start of the project. Instead, the company brought in special equipment to keep the project timeline on track.
- Coupled with a compressed timeline, changes in alignment required a complex logistics plan to coordinate the framing material acquisition and delivery of 27 additional poles types above the 13 originally bid. To ensure schedule adherence, Blattner added crews throughout the project for civil, drilling, unloading, framing and setting.
- To accomplish the stringing within the schedule, five additional stringing crews were employed, supplemented by Blattner resources, to achieve production of up to 35 miles per month with an average of 20 miles per month throughout the project
- For more than four months, and at any given time, Blattner Energy had crews working every discipline of construction and installation on 150 miles of the project.

“We were proactive.
We worked with
the owner to make
recommendations.

They trusted us to bring
solutions, and that’s
what we did.

- Nik Maeder, Director, Power Delivery
Blattner Energy



SOLUTIONS

To overcome challenges, Blattner Energy relied on its proven project management practices including a series of quality and safety procedures, reporting processes and frequent communications with the client, subcontractors and vendors.

- The project management plan had to be flexible, as some aspect of approximately 55 percent of the route changed throughout the project. Rather than tracking linear feet and miles of construction, Blattner utilized a pull plan for the project that included conductor reel management. This innovative approach made it easier for Blattner to track progress against the timeline and employ resources where required.
- As the alignment changed or permitting was delayed, Blattner had to skip miles of the project and return later to perform the installation work. The company adapted to keep civil, drilling, foundation, pole framing and installation ahead of six pulling crews. They used three-week look-ahead scheduling with the pole manufacturer to determine exactly what type of poles needed to be delivered for the given day and hour.
- Weekly and often daily communication and coordination meetings were held with the client and subcontractors.
- Blattner ensure the safety of all project team members and subcontractors by employing its proven behavior-based safety program. Frontline employees focused on specific safety issues for several weeks at a time, which raised the level of safety consciousness across the project. The approach was ultimately adopted by some subcontractors.
- To raise the bar for quality, Blattner developed and implemented new standards that significantly exceeded the industry baseline, including a dedicated site quality manager, work process checklists, detailed auditing, higher compression inspection requirements, photo documentation and fly-over inspections.

“We knew we had to think outside of the box.

We developed new project management practices that allowed us to track the progress of crews and materials more accurately.

- Rick Christensen, Project Manager
Blattner Energy

RESULTS

Blattner Energy installed 227 miles of the 319-mile 345-kV CREZ project in just 14 months. The company beat the project timeline and continued its record of never missing a commercial operation date.

“Our work on the CREZ line showcases our ability to handle extreme challenges and our commitment to project success,” said Nik Maeder, director, power delivery, for Blattner Energy. “We believe these qualities will serve clients well as we continue to expand our construction and project management expertise in the power delivery market.”

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EPC & BOP CONTRACTOR

Blattner has served the power industry for over 30 years with more than a century of experience building large, complex projects across the country. As a transmission and substation contractor, we have the expertise to successfully deliver projects of any voltage including extra high voltage. Above all, Blattner works as an advocate for our clients to ensure the highest levels of safety, quality, reliability, and overall environmental stewardship on every project.

Pre-Construction

- Surveying
- Permitting procurement
- Land use and route layout optimization
- Geotechnical investigation

Engineering and Design

- Civil
- Geotechnical
- Structural
- Electrical
- System protection and communications
- Technical studies and interconnect support

Material Procurement

- Specification, purchasing and management
- Transportation, receiving and inspection
- Inventory control
- Onsite logistics

Transmission Line Construction

- Site civil work, access, ROW, erosion control, and reclamation
- Soil and rock drilling, caisson installation, and direct bury
- Foundations installation
- Structure framing and setting
- Structure grounding
- Conductor/OPGW stringing, splicing, sagging, and clipping-in

Substation Construction

- Site preparation, civil work, and foundations
- Fencing and gravel installation
- Ground grid installation
- Control and power cables
- Steel erection
- Equipment installation: transformers, breakers, switches, capacitor banks and reactors, switchgear, and bus systems
- Testing and commissioning
- Energization

Construction Management



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