

#BetterTogether: **GRID MODERNIZATION ENGINEERING**



OVERVIEW

Working across sectors at ENTRUST is essential for fostering innovation, efficiency, and overall success. When our different departments collaborate and share knowledge, they bring diverse perspectives and skill sets to the table. This cross-functional approach enables us to tackle complex challenges from various angles, leading to more comprehensive and well-rounded solutions. Ultimately, this collaborative approach empowers us to remain agile and cutting-edge for our customers. We are #BetterTogether.

WORKING TOGETHER FOR THE FUTURE

Grid modernization programs face many challenges in the rapidly evolving energy landscape. The need for grid modernization stems from factors such as generation interconnection, regulatory pressures, electric vehicle adoption, and the pursuit of net-zero goals. AEP, recognizing these challenges, embarked on a collaborative effort with EN Engineering and EN Consulting to develop a turnkey approach that integrates engineering planning, environmental analysis, field data collection, design, public communications, and public relations, right of way acquisition, permitting, and jobsite staking.

DESIGN AND ENGINEERING CHALLENGES OF GRID MODERNIZATION

The project identified various engineering challenges, including the coordination of existing substations, regulators, capacitor banks, and smart devices. It emphasized the importance of utilizing the existing communication backbone and considering future needs. Localized requirements and understanding the future state of each feeder or scheme were crucial aspects. The turnkey approach seeks to tackle these challenges comprehensively.

Permitting complexities, accessibility for smart device installation, and considerations for upstream control power were key design challenges highlighted in the project. Smart decisions on device installation locations, anticipation of potential complaints, and the requirement of right-of-way or easements were also crucial. The turnkey approach ensures that both engineering and design considerations are integrated, reducing the likelihood of errors.



BENEFITS OF OUR TURNKEY APPROACH

The integrated approach eliminates potential errors arising from siloed engineering and design processes. The collaboration ensures that engineers and designers understand each other's challenges, leading to a more efficient and error-free outcome. Traditional issues such as decommissioned devices, improper settings, and customer dissatisfaction are minimized. The singular team approach maximizes efficiency and reduces the need for extensive project management.

At ENTRUST, the foundational elements of innovation, efficiency, and overall client success stem from collaborative endeavors spanning across sectors. Leveraging diverse perspectives and skill sets from our various departments, we approach complex challenges from multiple vantage points, leading to comprehensive and well-rounded solutions. Our commitment to being **#BetterTogether** is reflected in our one-stop-shop approaches, ensuring unparalleled service for our customers.

**#BETTER
TOGETHER**

