



May 31, 2018

## Energy

**Linda Brandl**  
Vice President Marketing &  
Sales – Energy

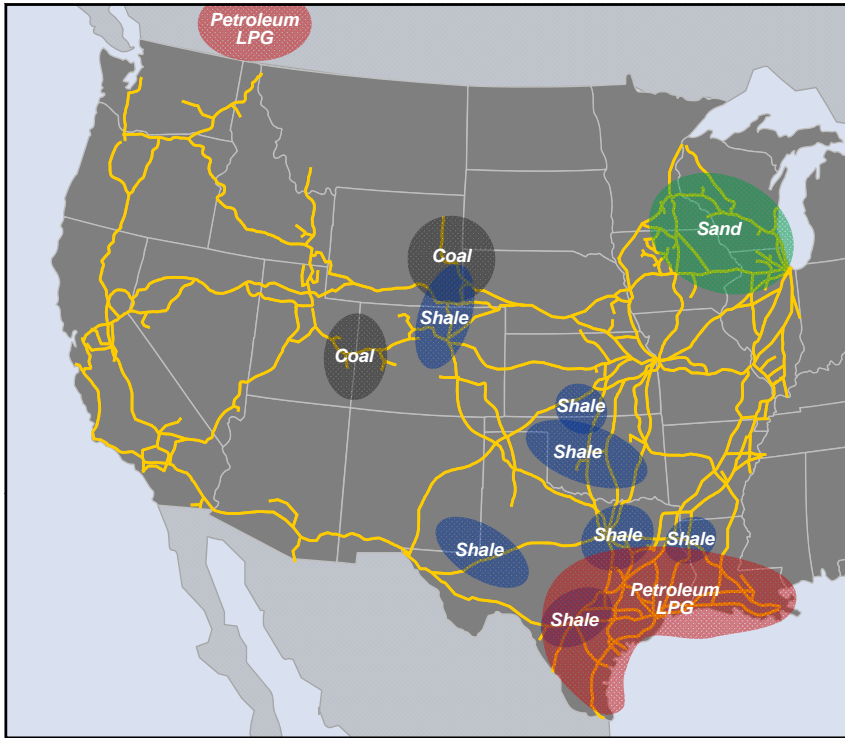
### **Linda Brandl** Vice President Marketing & Sales – Energy



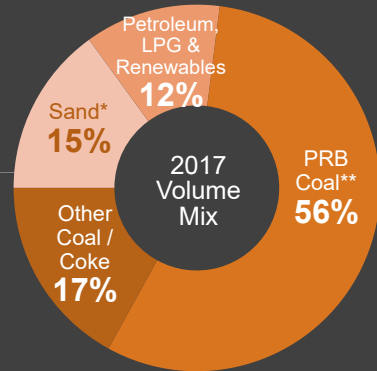
Linda Brandl was named vice president marketing and sales-Energy in September 2017. She is responsible for managing Union Pacific's coal, petroleum coke, frac sand, LPG, petroleum and renewables shipments.

Brandl has held various positions during her tenure with the railroad including recent assignments as vice president and general manager-Coal, vice president and general manager-Automotive and vice president of Union Pacific's National Customer Service Center. She was also president of Union Pacific Distribution Services (UPDS), a wholly owned subsidiary of Union Pacific Railroad, and held management positions in Chemicals, Coal, Automotive, and Premium Operations.





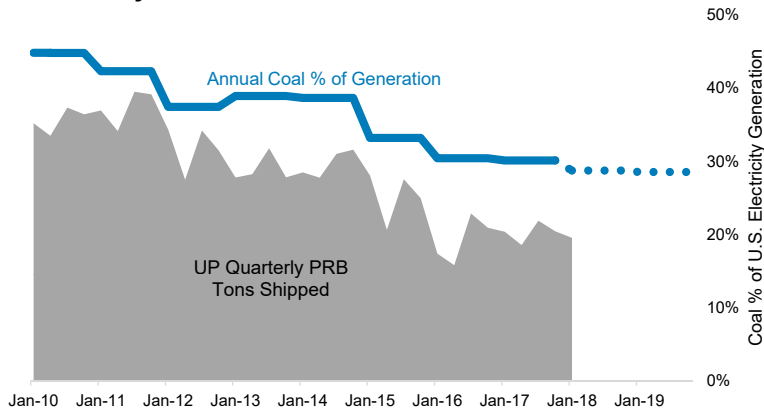
**Energy**  
2017 Revenue  
**\$4.5 B**



\* Sand includes Barites  
\*\* PRB includes SPRB and NPRB

## Coal Coal Headwinds Continue

UP PRB Tons Shipped vs. Coal Share of U.S. Electricity Generation



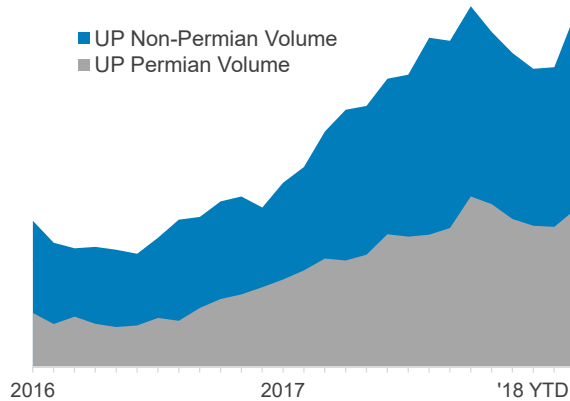
\*PRB includes SPRB and NPRB  
Source: U.S. Electricity Generation by Fuel Type provided by EIA Short-Term Energy Outlook May 2018

- Market conditions, policy and age drive the structural decline in coal
- Fuel alternatives and weather will continue to drive cyclical variability
- Challenging competitive environment



# Sand

## Growing Proppant Demand in an Evolving Supply Chain



- Positive oil market outlook supporting shale drilling activity
- Interest, but uncertainty around in-basin sand
- Timing and adoption rate is unfolding
- UP is well positioned to serve multiple destination markets



## Energy Growth Opportunities

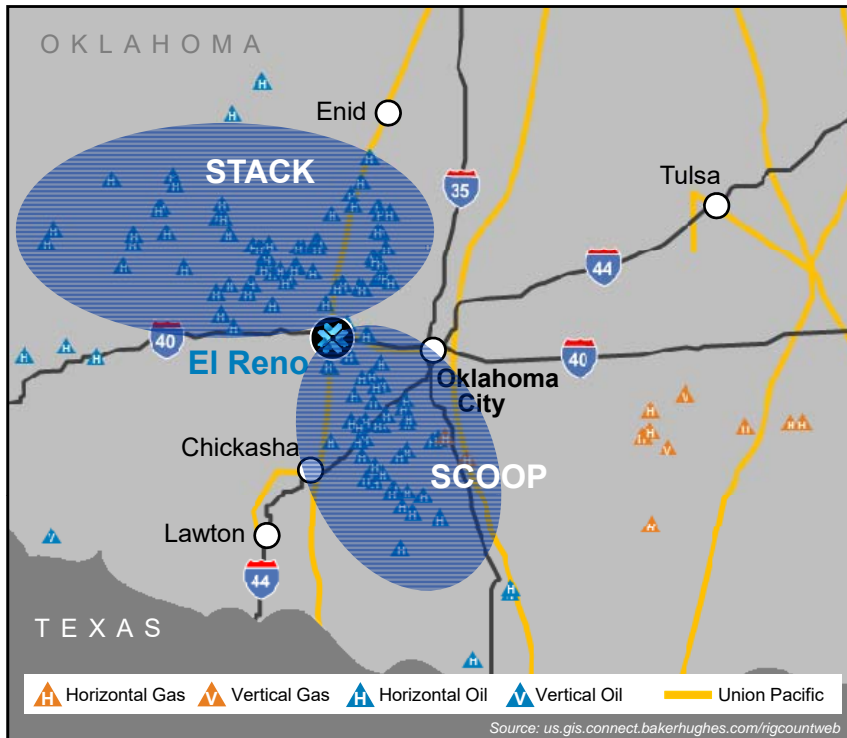
Global Demand for Coal

Oil Prices and Proppant Demand

Crude Takeaways in Canada and Permian

Mexico Energy Reform

Export Biomass



## El Reno, Oklahoma Transload Facility

Repurposed an underutilized asset to take advantage of a market opportunity

Oklahoma shale market is growing

Speed to market critical

Expanded the reach of rail through a joint effort with LOUP

Established a multi commodity facility that can adjust as markets change