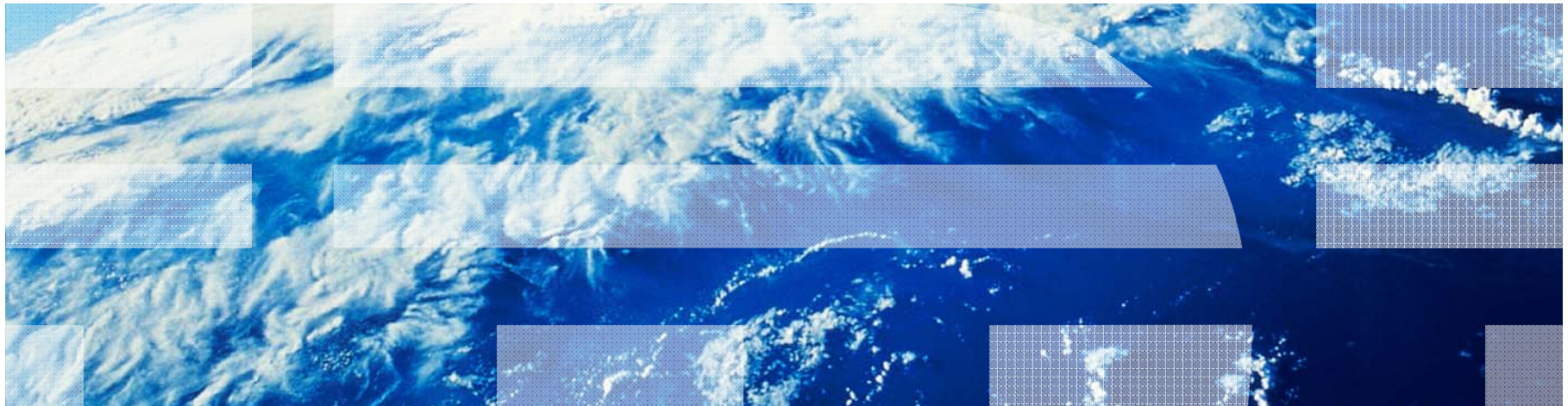


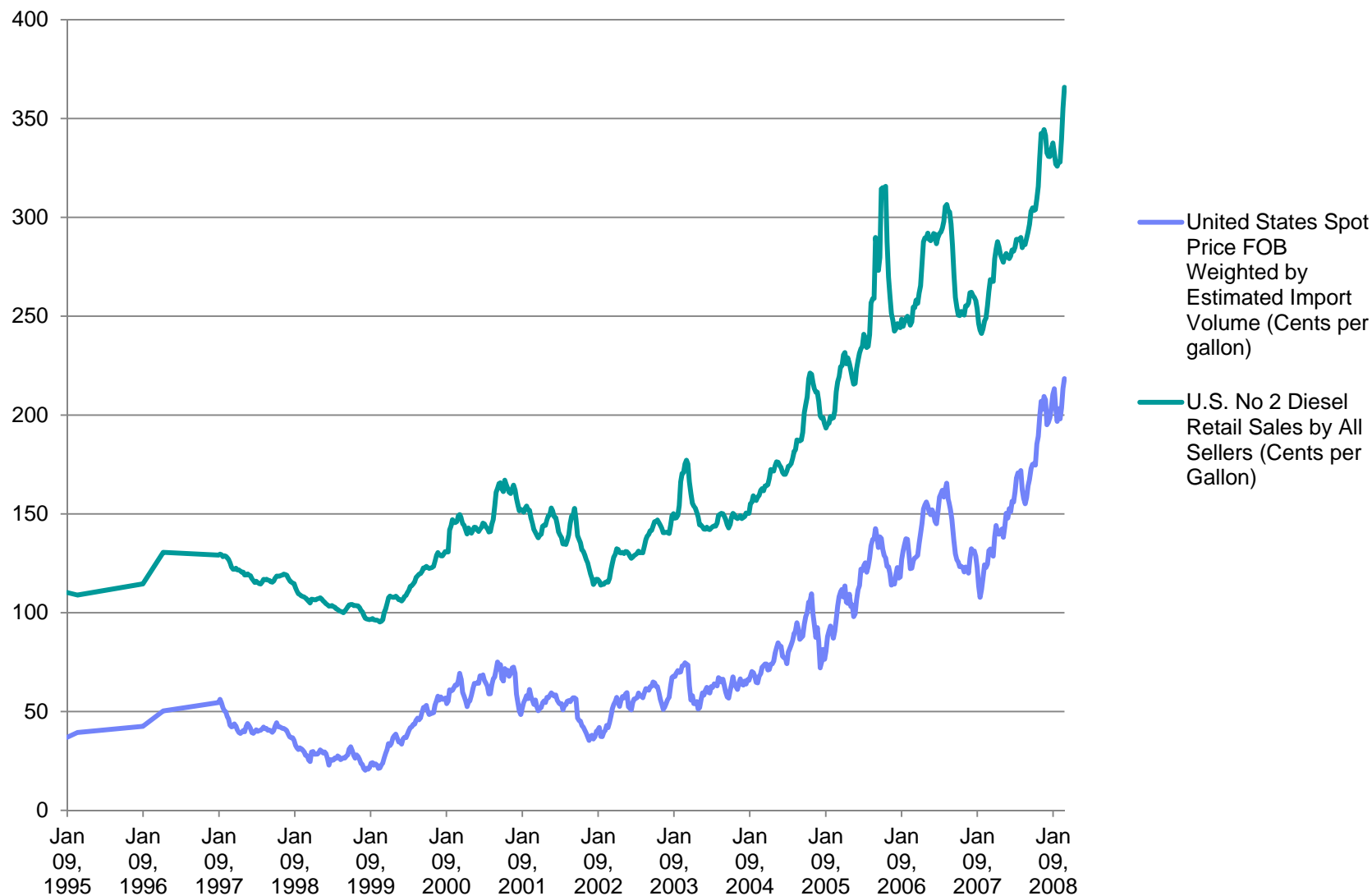
2011



IBM ILOG Oil Case Study



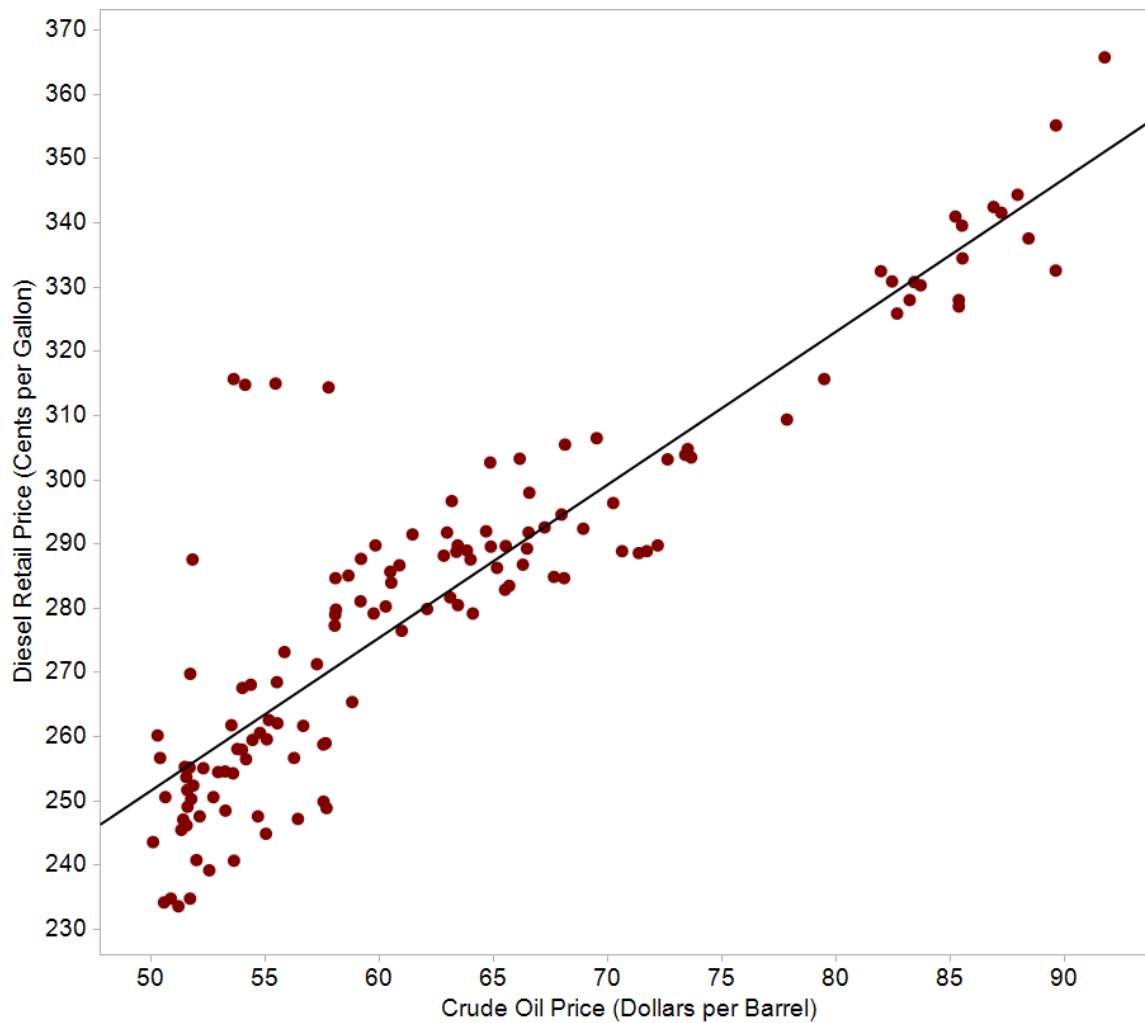
US Diesel and Crude Oil Prices over time



Relationship between Crude Oil price and Diesel Fuel Price (filtered above \$50/barrel)

Trend Line Model

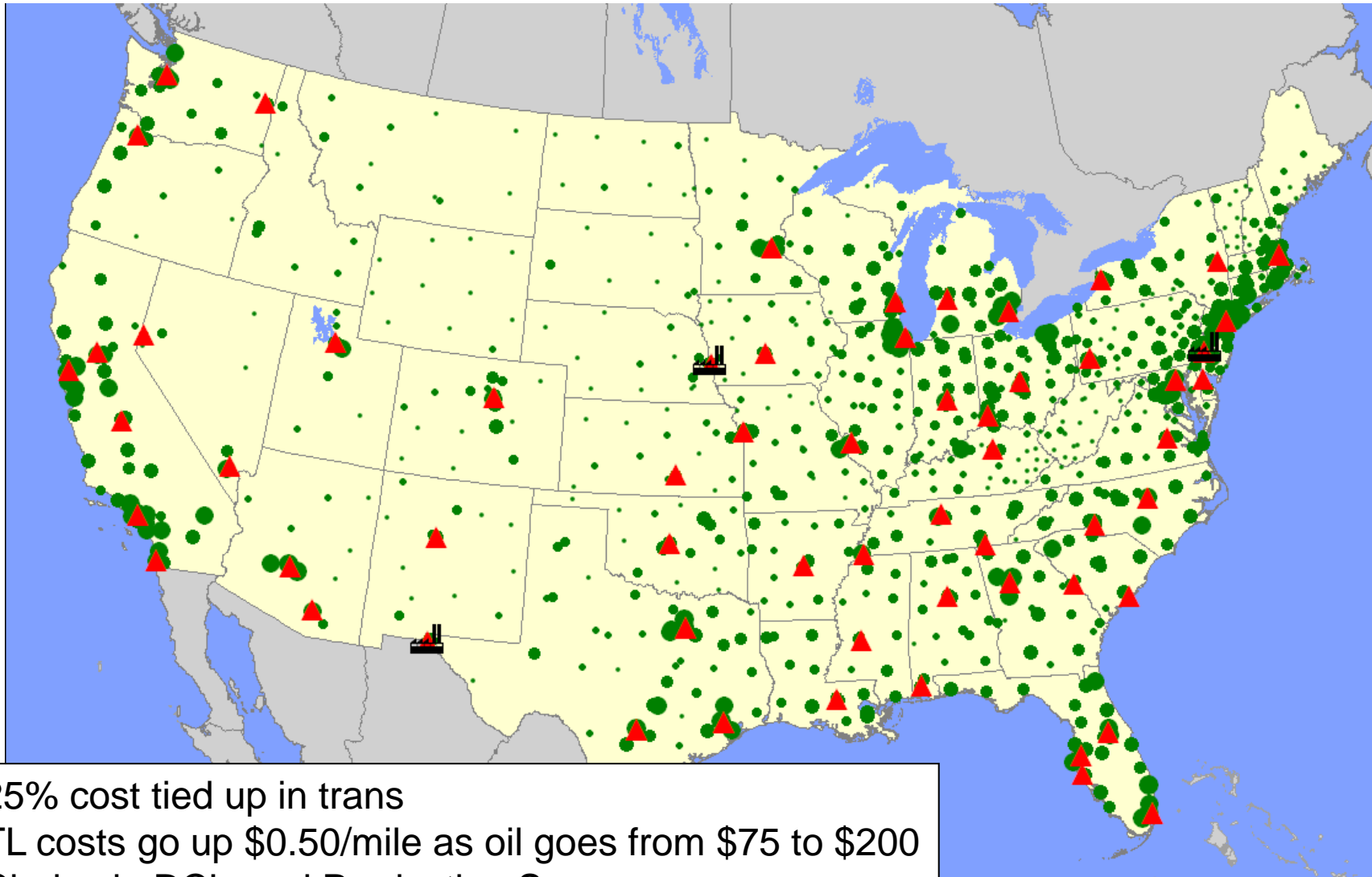
$$\text{Diesel Retail Price (Cents per Gallon)} = 2.38515 * \text{Crude Oil Price (\$/barrel)} + 132.292$$



Implications on crude oil price to transportation rates

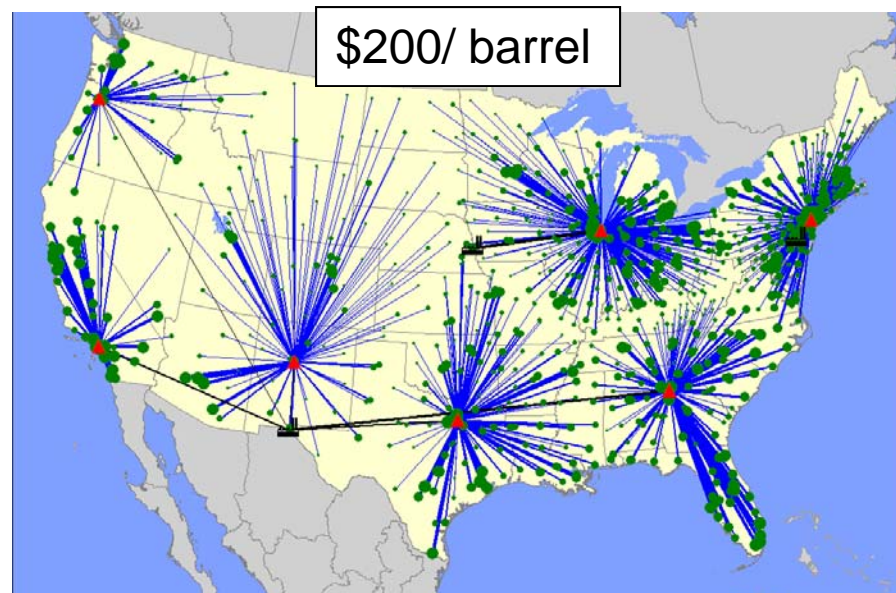
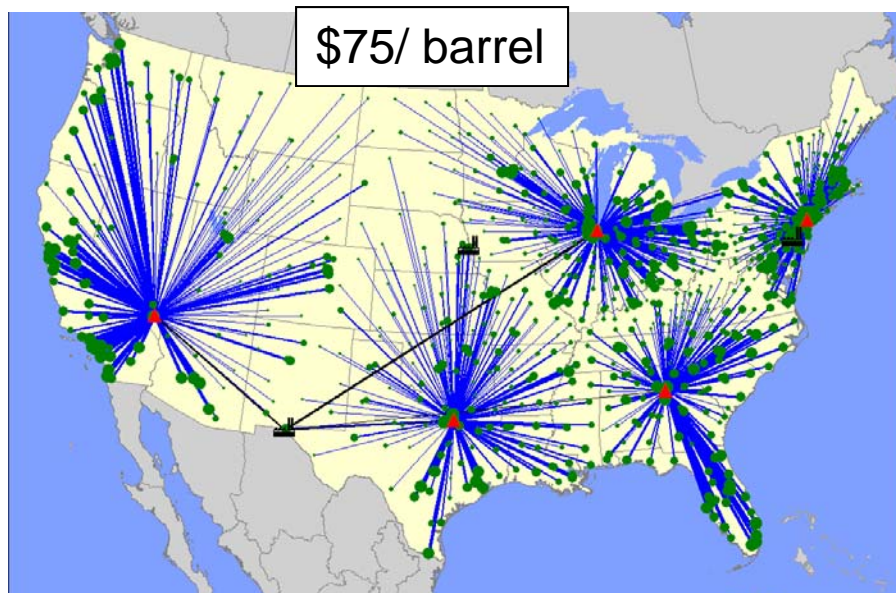
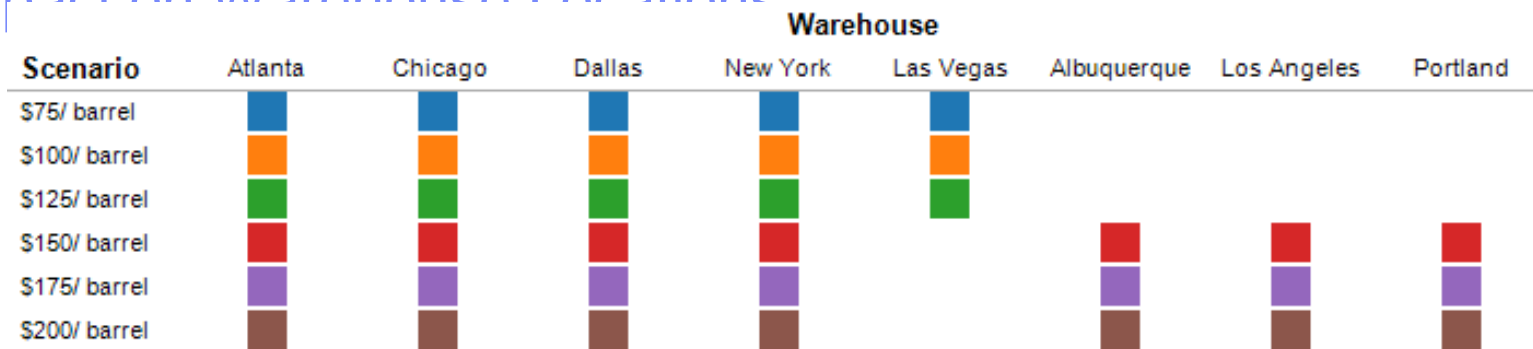
- Given the relationship in the previous slide, we see that a \$10/barrel increase in crude oil will result in ~\$0.24/gallon increase in diesel fuel
- Standard fuel surcharge methodology is to increase surcharge \$0.01/mile for every \$0.06 increase in diesel fuel
- Therefore we conclude that for every \$10 increase per barrel of crude oil price, we will see an additional \$0.04/mile increase in transportation rates.

Sample Impact on Network



- 25% cost tied up in trans
- TL costs go up \$0.50/mile as oil goes from \$75 to \$200
- Choice in DC's and Production Source

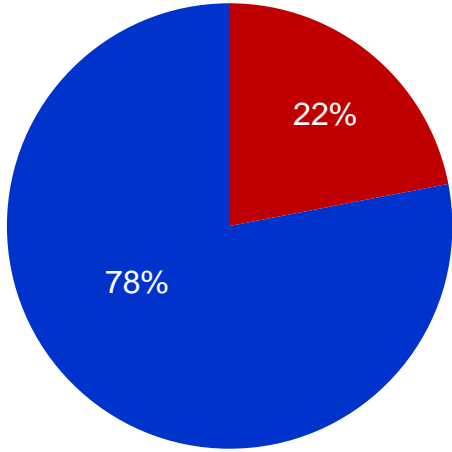
Impact on Warehouse Locations



Impact on Production Sourcing

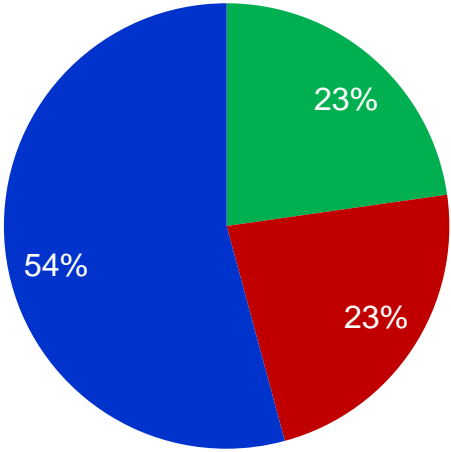


\$75/ barrel



- Philly Plant
- Juarez Mexico

\$200/ barrel



- Omaha Plant
- Philly Plant
- Juarez Mexico

