

# PG&E Gas Management for Electric Generation within the CAISO

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**06/21/2023**



Together, Building  
a Better California

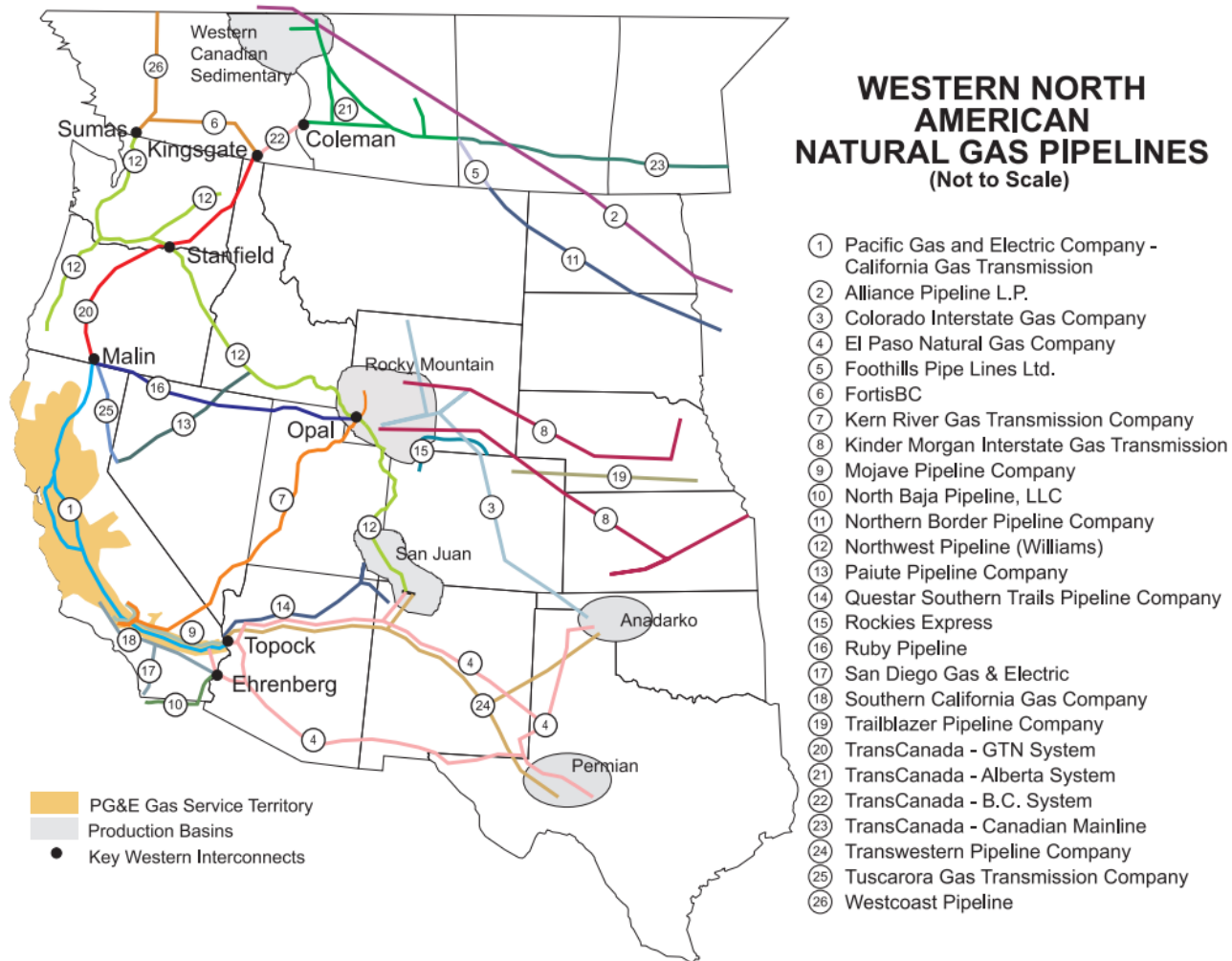


# Natural gas lines of business at PG&E

- **PG&E California Gas Transmission**
  - Owns and operates PG&E's gas pipelines and storage facilities inside California
- **Core Gas Supply**
  - Procures natural gas on behalf of PG&E's bundled gas customers (residential and small businesses)
- **Electric Gas Supply a.k.a. Electric Fuels**
  - Procures natural gas for PG&E owned and PG&E contracted electric generating facilities



# Western Pipeline Map and Market Locations





# PG&E's electric portfolio forecasting

- CAISO Demand
- Transmission Availability at CAISO  
interties
- Power prices at WECC trading Hubs
- Wind and Solar forecasts
- Recent Day Ahead Award vs. Realtime  
Dispatch variances



# CAISO Integrated Forward Market Timeline

- ISO Integrated Forward Market (IFM) results announced around 1:00 pm day ahead
  - The IFM awards give a better—but not perfect—idea of which units will be dispatched
- Most gas trading is concluded by 7:00 a.m. for the next day
- CAISO redispatch in Realtime may be different than IFM results



# Natural gas trading to meet demand

## Day Ahead (Before CAISO Market runs)

- While meeting demand, PG&E utilizes tools to meet its electric demand:
  - Market purchases and sales (Day Ahead market closes at 10:30 AM)
  - Market Center Services (Parks & Lends, Short term storage)
  - Independent storage provider contracts
  - Pipeline transportation capacity contracts
  - Pipeline balancing (Daily/Monthly)