



Perspectives on Natural Gas Demand

Ensuring Adequate Pipeline Capacity with Uncertain Gas Demand

Mike Katz
VP, California Gas Transmission
Pacific Gas and Electric Company

Natural Gas Technologies II: Ingenuity and Innovation

February 10, 2004

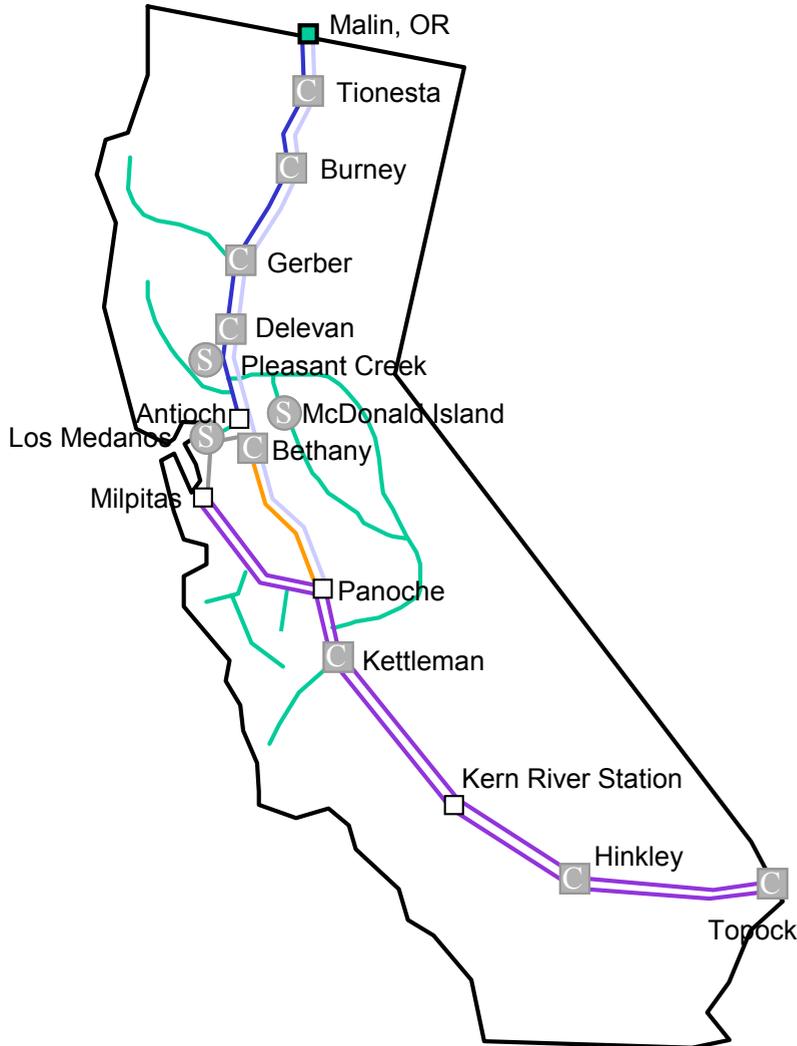


Overview

- ❑ PG&E's California Gas Transmission and Storage System
- ❑ Forecasting Gas Demand
- ❑ The Value of Slack Capacity
- ❑ Observations and PG&E's View



PG&E's California Gas Transmission and Storage System



LEGEND

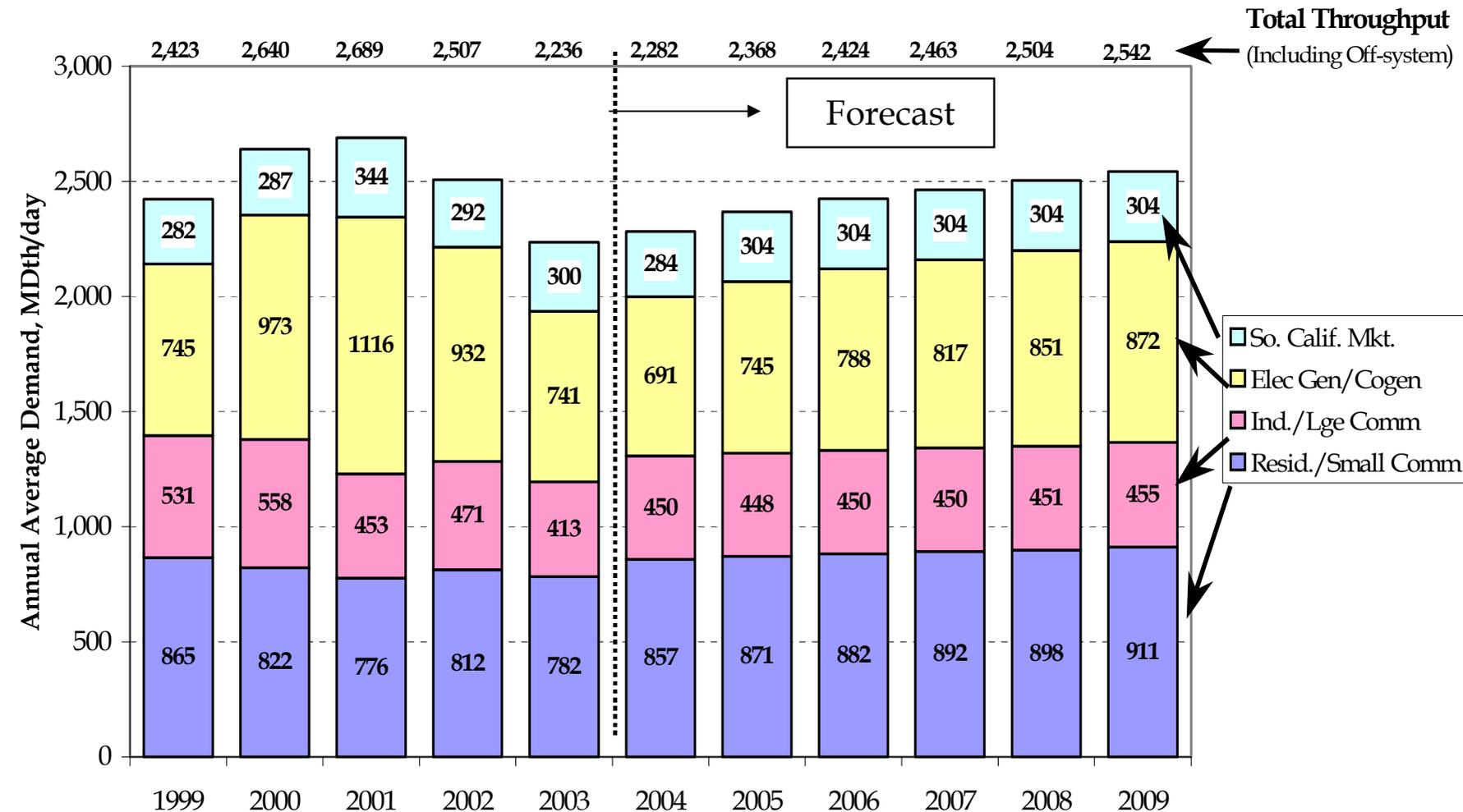
- Compressor Station
- Storage Facility
- Terminal / Station
- Line 300
- Line 400
- Line 401
- Bay Area Loop
- Line 2
- Local Transmission

Firm Receipt Capacity (MMcf/d)

Line 300	1,140
Line 400/401	2,021
California gas	150-200
Storage injection*	259-418
Storage withdrawal*	1,172-1,700
(* varies with field pressure)	
Firm storage cycle vol.	42.4 Bcf



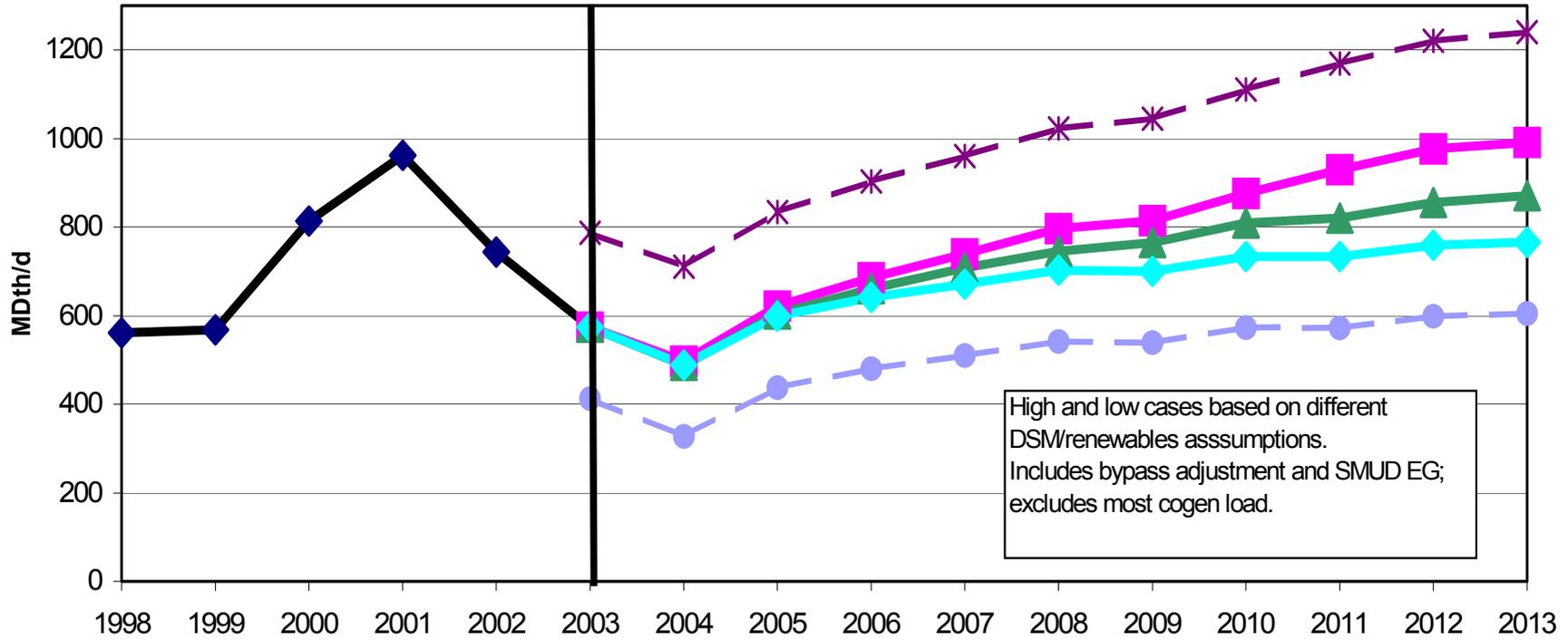
PG&E's California Gas Transmission Market Segments





EG Demand Forecast Uncertainty

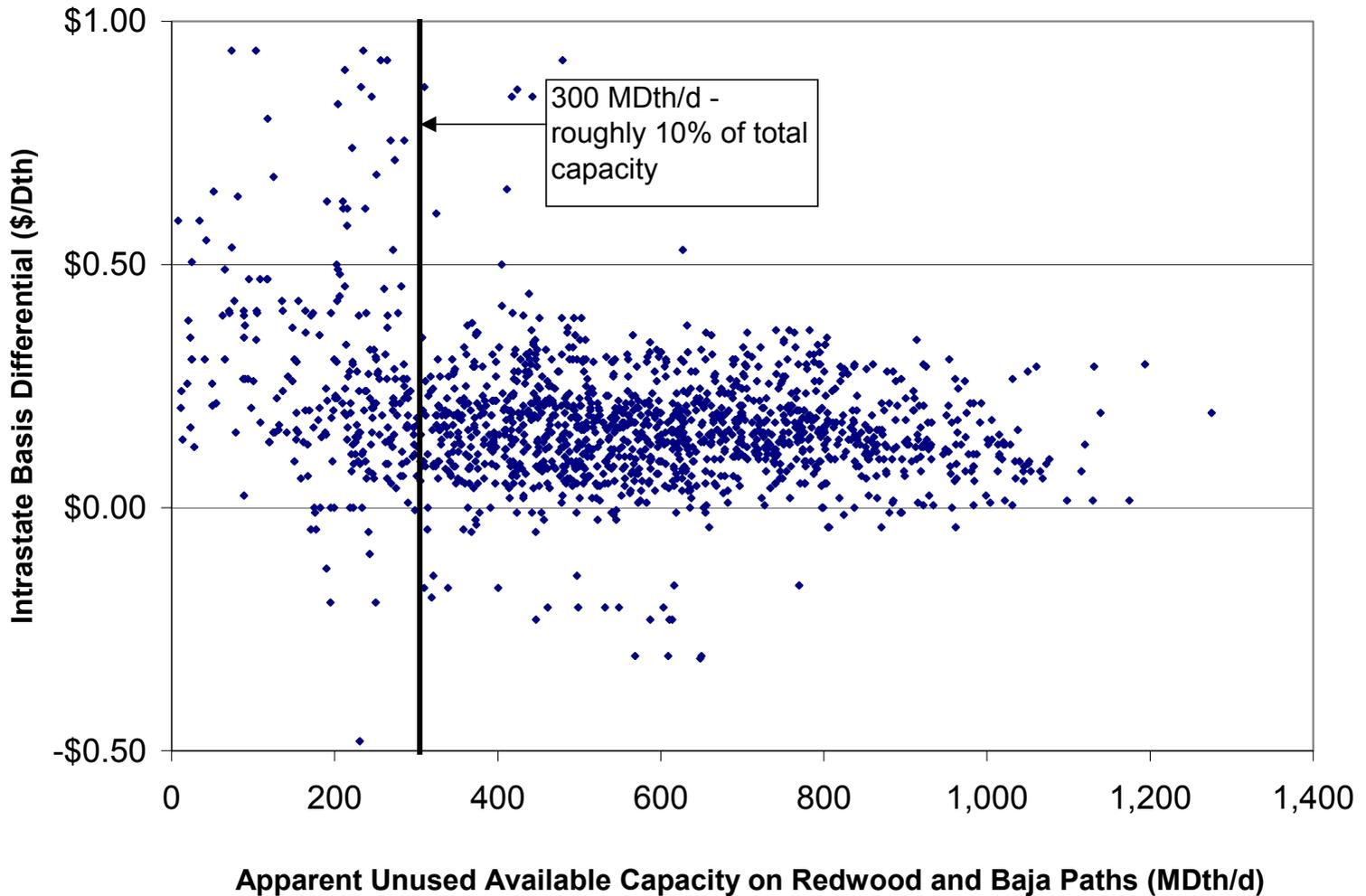
(data excludes most cogen volumes)



High and low cases based on different DSM/renewables assumptions. Includes bypass adjustment and SMUD EG; excludes most cogen load.

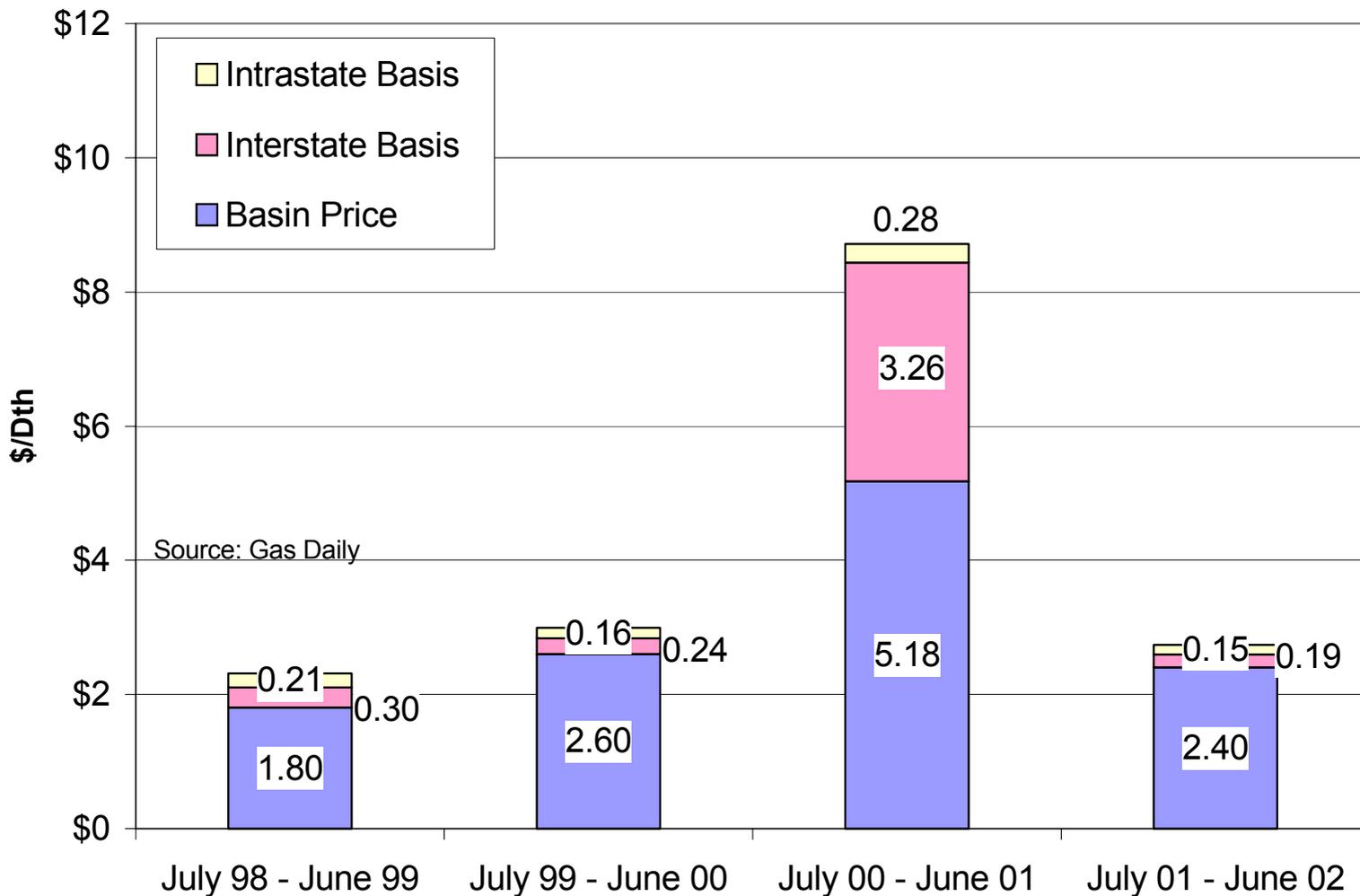


Value Proposition of Slack Capacity



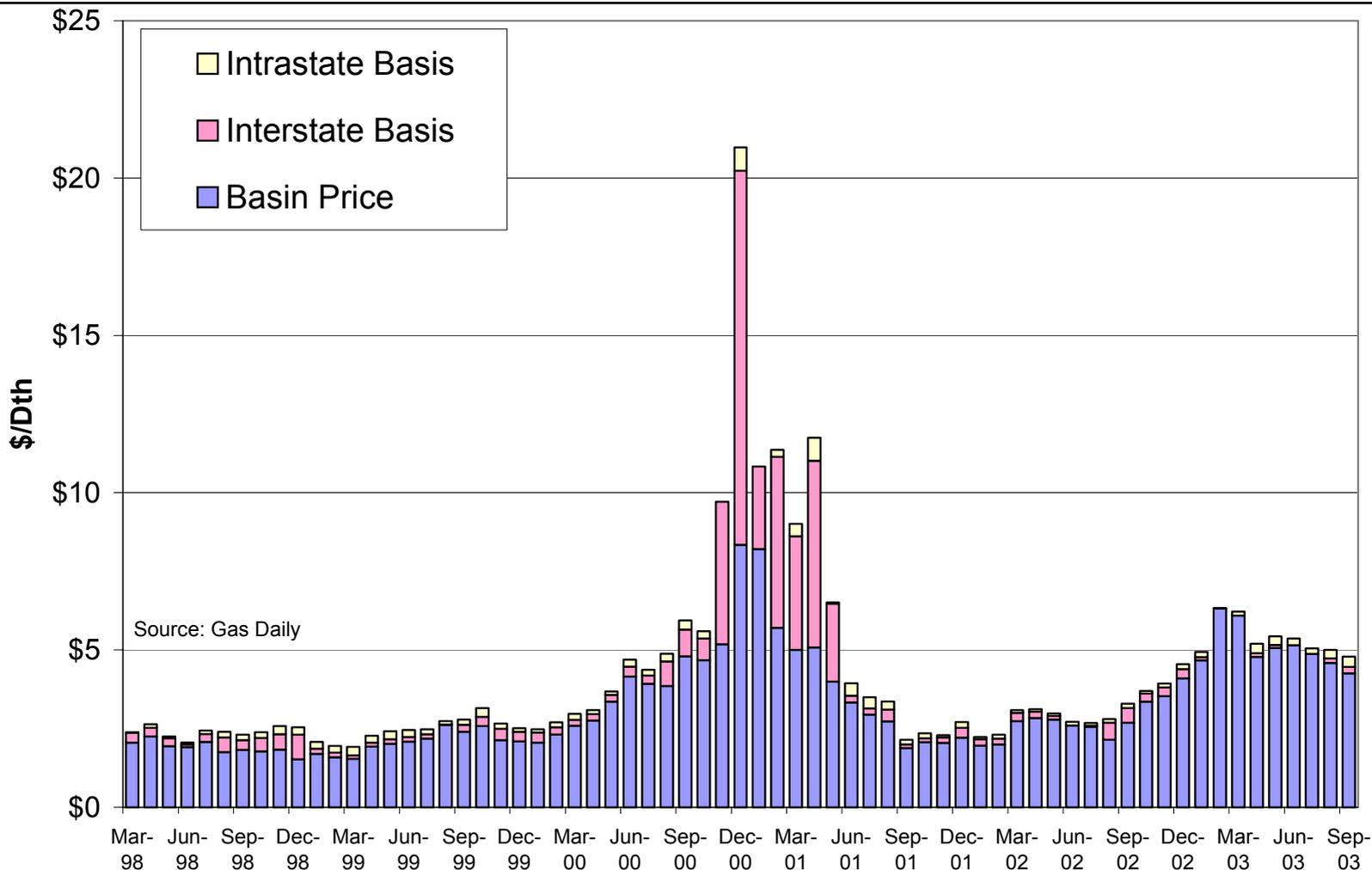


Components of Daily Gas Prices at the PG&E Citygate (12-month averages)



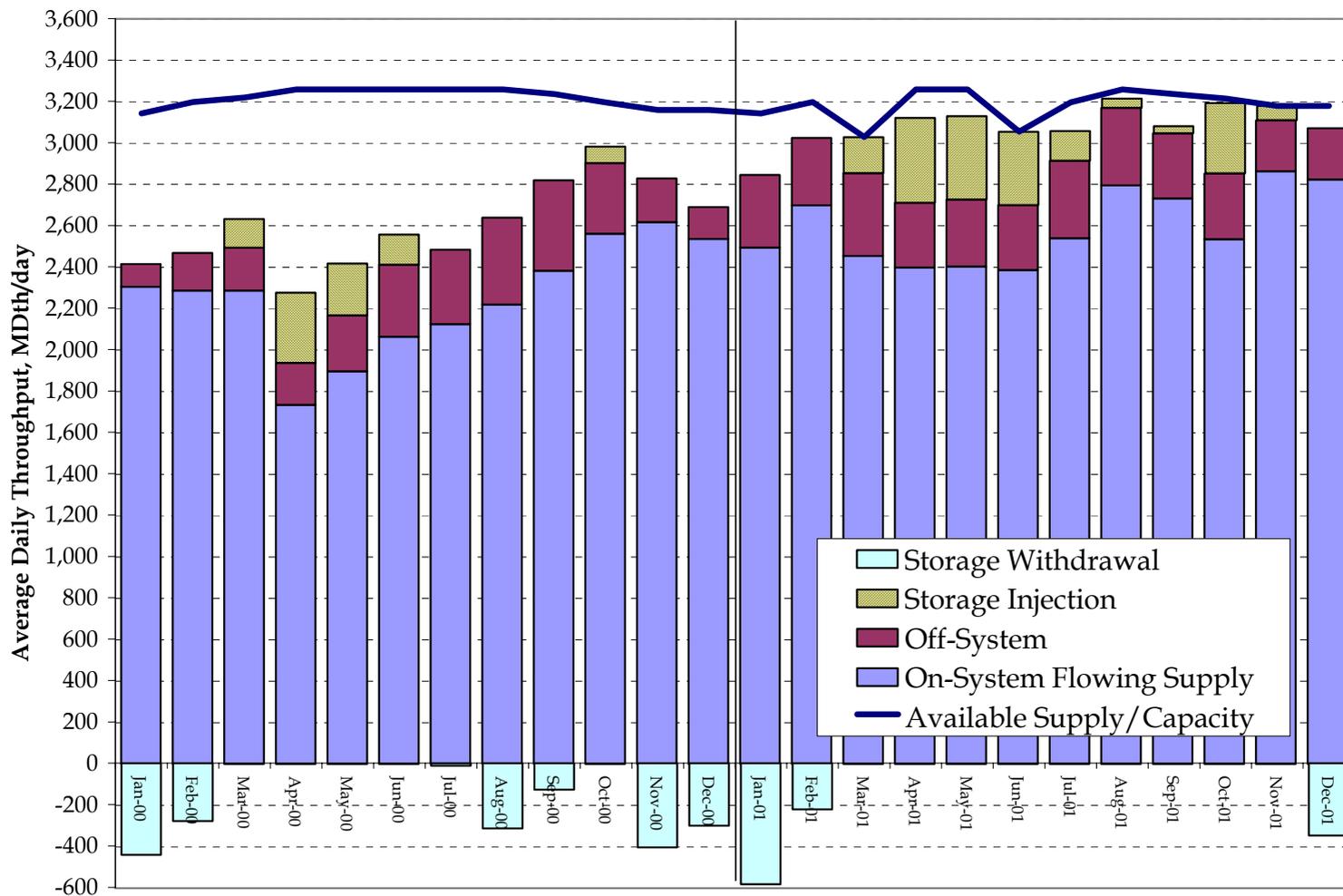


Components of Daily Natural Gas Prices at the PG&E Citygate (monthly averages)



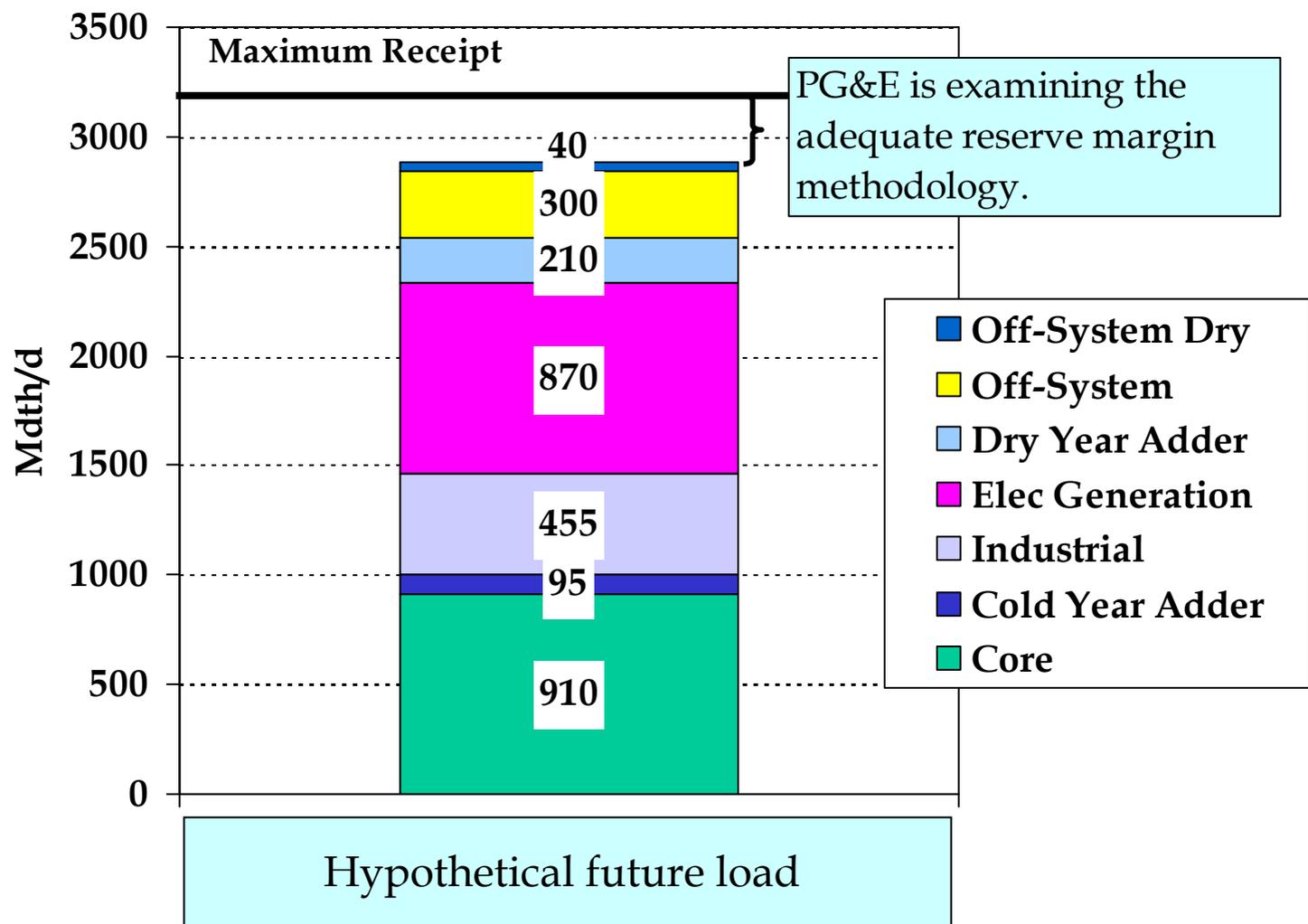


CGT Near Maximum Capacity in 2001 Due Largely to Dry Hydro Year





Slack Capacity and Demand





Current Situation

- ❑ Existing CPUC Policy
 - ⇒ “Let the market decide”
 - ⇒ However, a desire for 10-20% capacity above a cold year demand
- ❑ Market Participants
 - ⇒ Many in weak financial positions
 - ⇒ Will not contract for 1-in-10 year events
- ❑ CPUC OIR (Ongoing in 2004)
 - ⇒ Examining long-term infrastructure and supply needs



PG&E Views

- ❑ The value of slack capacity exceeds its “insurance” cost
- ❑ A market-based response will not ensure adequate capacity to meet extreme events
- ❑ Rate design based on a forecast of load can provide a mechanism for constructing adequate capacity for customers and recovery of investment for utilities