

Pressure Reduction Impact Analysis

Natural Gas Modeling Results Workshop
California Energy Commission

Sacramento, CA

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Staff Analyzed Four General Issues

1. Pressure Reduction scenario in WGTM
 - Staff using model in annual mode which effectively looks at AVERAGE DAY demand
 - Monthly or daily granularity could show different result
 - Performed additional analysis to cover this limitation
2. Projected End-Use Demand by Month vs. Constrained Delivery Capability
3. Projected End-Use Demand on Peak Day vs. Constrained Delivery Capability
4. Storage Refill Capability

WGTM Pressure Reduction Scenario

Changes Two Key Assumptions

- PG&E backbone capacity lower to recognize
 - MAOP reductions on specific lines ordered by CPUC
 - results of Class Location Study
 - hydrostatic testing/replacement
- Reduced PG&E Backbone capacity by 500 MMcfd
 - Redwood 2050 => 1850 Baja 1140 => 830
 - based on Pipe Ranger mid-July as “available” through year-end
 - switched off capacity expansion

WGTM Scenario Shows Nothing Exciting or Unusual

- All load served – DAILY ANNUAL AVERAGE
- Some annual price changes (perturbations)
 - Not consistent in direction year to year
 - Small on a percentage basis
 - Occur across entire US, including Henry Hub, not just California
- Additional small shift in flows from Redwood to Baja given that Baja was less utilized before the constraint

Serving Cold Day Demand May Require Independent Storage Use

MMcf/d	Dec 8 2009 Recorded	Dec 9 2009 Recorded	Winter Peak Day Demand from 2010 California Gas Report	Expected Deliverability for Average Day
<i>Demand</i>				
Core	2,840	2,926	2850	
Industrial	677	692	420	
Electric Generation	551	528	1000	
Off-System	27	68	0	
Total	4,095	4,214	4,270	
<i>Capacity & Supply</i>				
Redwood	901	809	1,800	1,800
Baja	1,031	1,051	733	733
Silverado (CA Production)	120	120	130	130
PG&E Storage	1,344	1,228	1,100	350
Independent Storage	699	1,006	507	0
Total	4,095	4,214	4,270	3,013

Storage Refill for Core Looks OK

- Early question was what impact reduced capacity would have on the storage refill
 - Looked first are refill to core customers
 - adding daily injections/withdrawals reported on Pipe Ranger got to reasonable Nov 1 core inventory
- Independent storage harder to assess since 0 inventory start point unknown
 - noncore customers need to be diligent in filling storage
 - noncore may need gas from storage on days when demand is higher than **average**