



Minnesota Public Utilities Commission  
***Winter 2013-2014 – Cold Weather Recap***

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# Description of Winter!

- It was cold!
- It was windy!
- It was snowy!
- It was long!
- It's finally OVER!



# U.S. Energy's Role

- Manage the delivery of natural gas to thousands of customers nationwide and hundreds in MN
- Manage roughly 5% of natural gas used by industrial customers in the U.S. each day
- Actively engaged in all elements along the natural gas supply chain (production, transportation and distribution)
- Have customers on all major pipelines and utilities in State
- Manage transportation/supply for several private and municipal utilities in the State

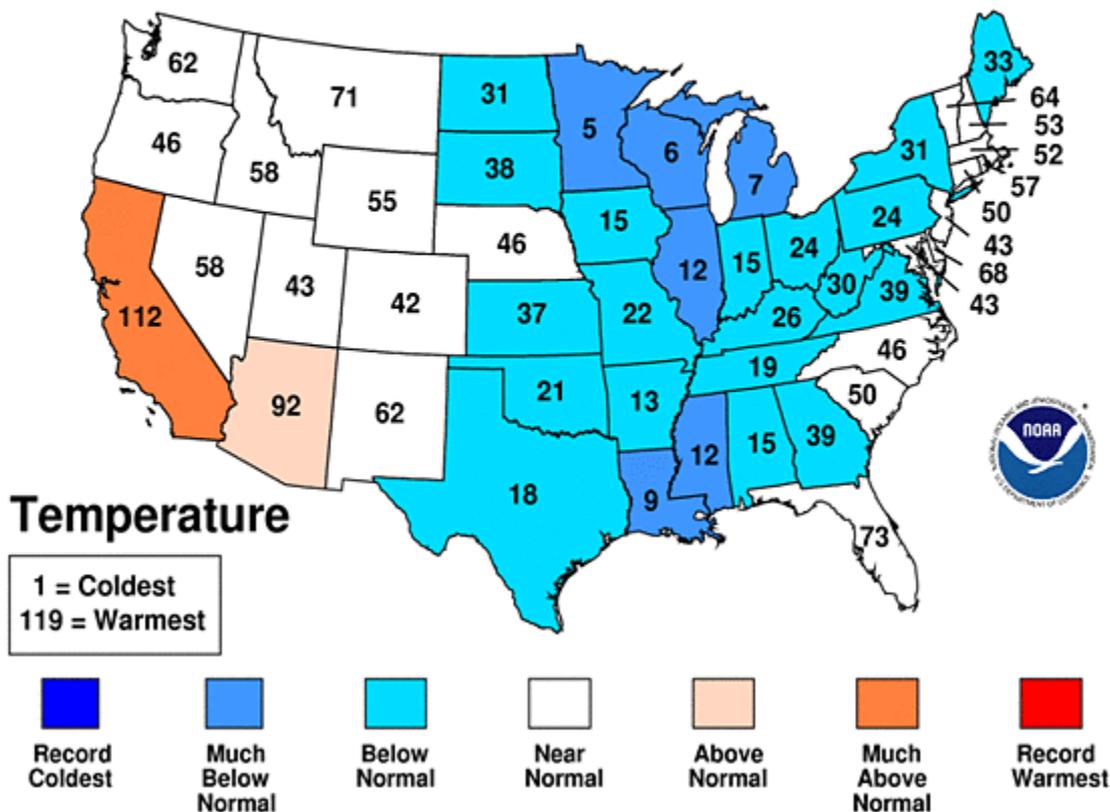
# General Observations

1. Overall, the market performed as it should by rationing supply based on price
2. Price spikes late in the season driven by reduced storage availability levels caused by diminished production and high demand
3. Extreme prices in part driven by pipeline penalty structures
4. Some market participants were not prepared to manage through cold weather periods, with high prices and extreme penalties
5. Some U.S. Energy customers suffered financially due to #4 (reduced production, penalties)
6. TransCanada outage was managed very well

# How Cold Was It?

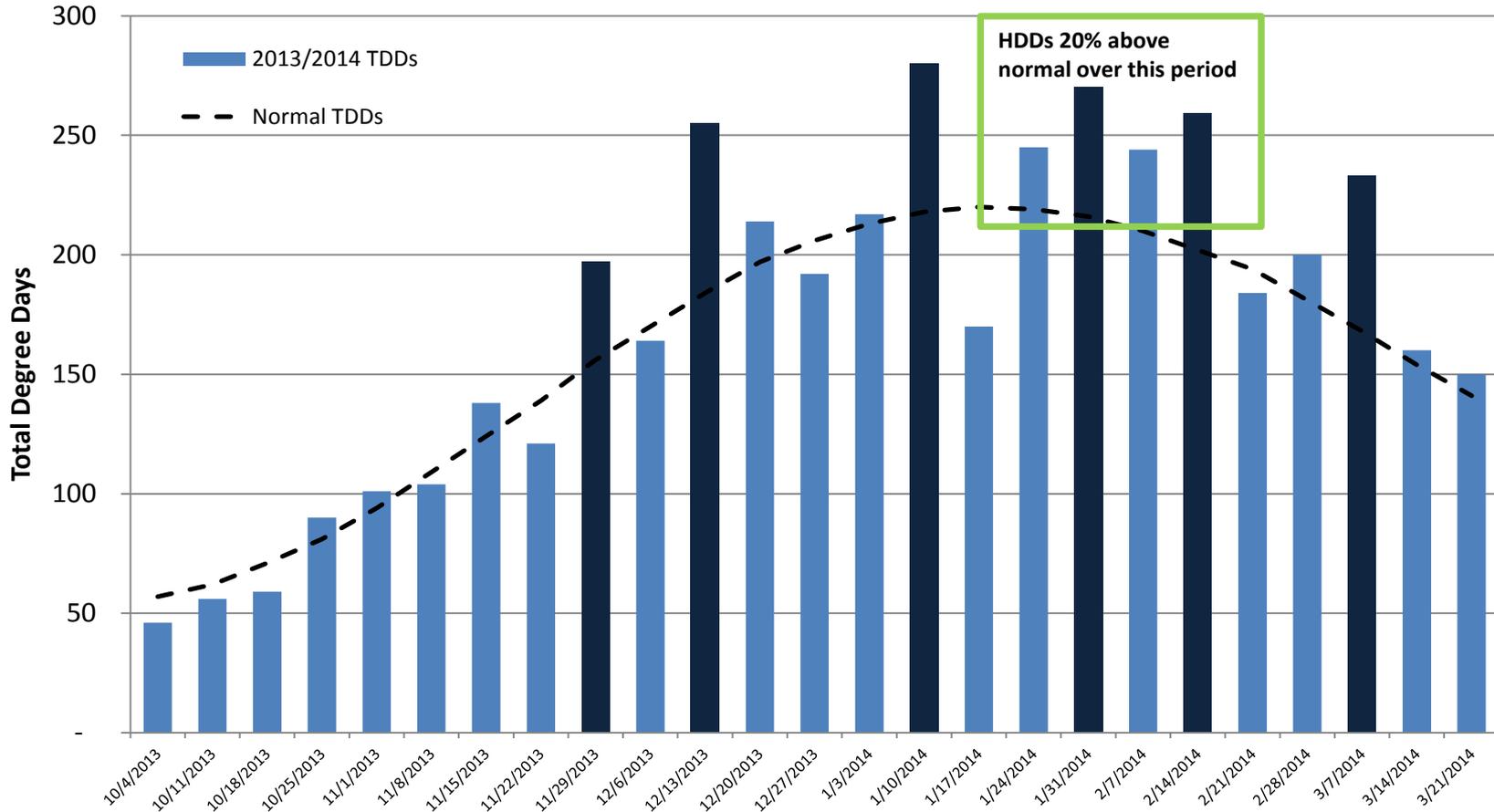
## Dec 2013-Jan 2014 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



## Population Weighted Total Degree Days vs. Normal

(Navy bars indicate greater than 25% higher than normal TDDs )

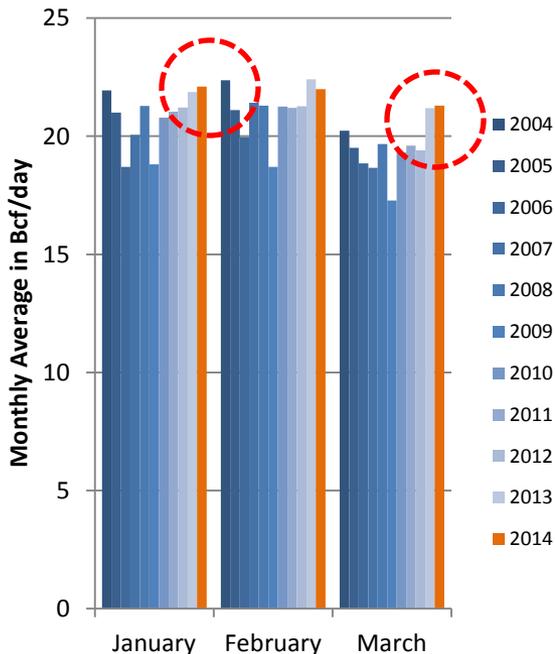


- Storage Withdrawals have been extreme

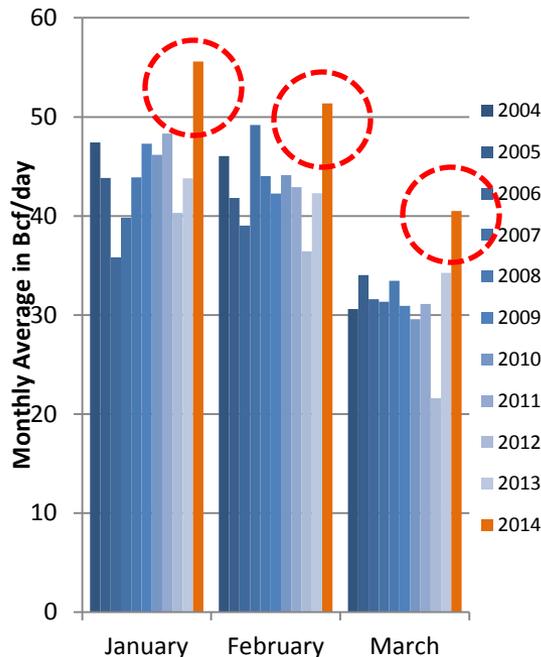
- This winter saw the two largest weekly withdrawals on record, and three of the top five in history
- From the week ending January 24<sup>th</sup> through the week ending February 14<sup>th</sup>, the average weekly withdrawal was 245 Bcf. The next highest average withdrawal over a four week period was 223.5 Bcf
- Only four weeks since end of November have been warmer than normal

- Residential and Commercial Demand set new records for consumption in all three months in 2014
- Industrial Demand set new monthly records in January and March, and may well have set a third in February as well, if not for curtailments
- Power Generation Demand set a new high for January and exceeded all prior years in February and March with the exception of 2012 and 2013, years which had unique price related circumstances

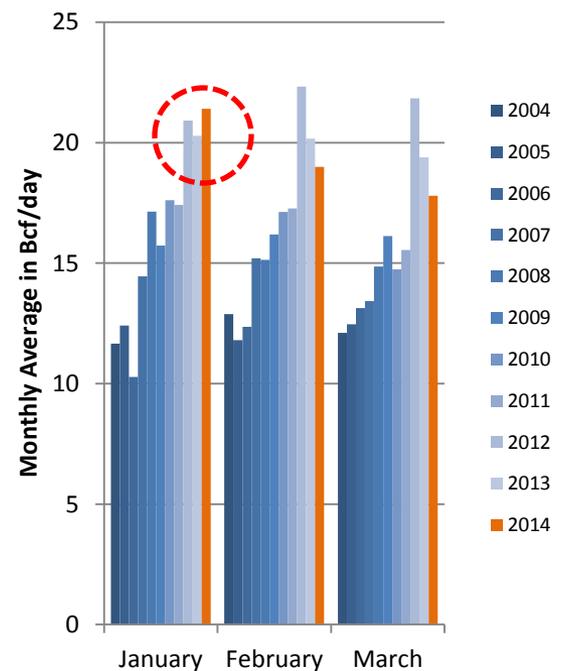
### Industrial Demand



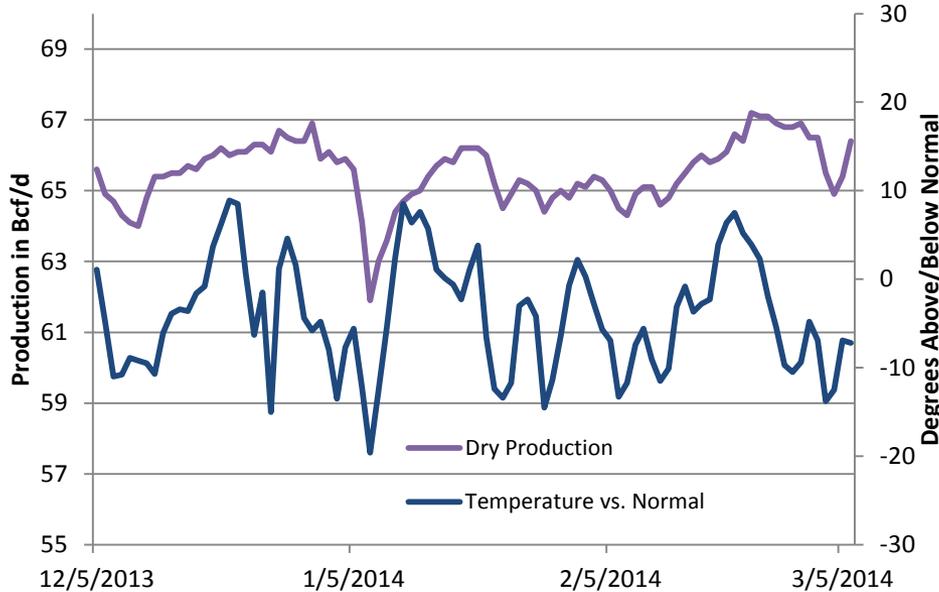
### Residential and Commercial Demand



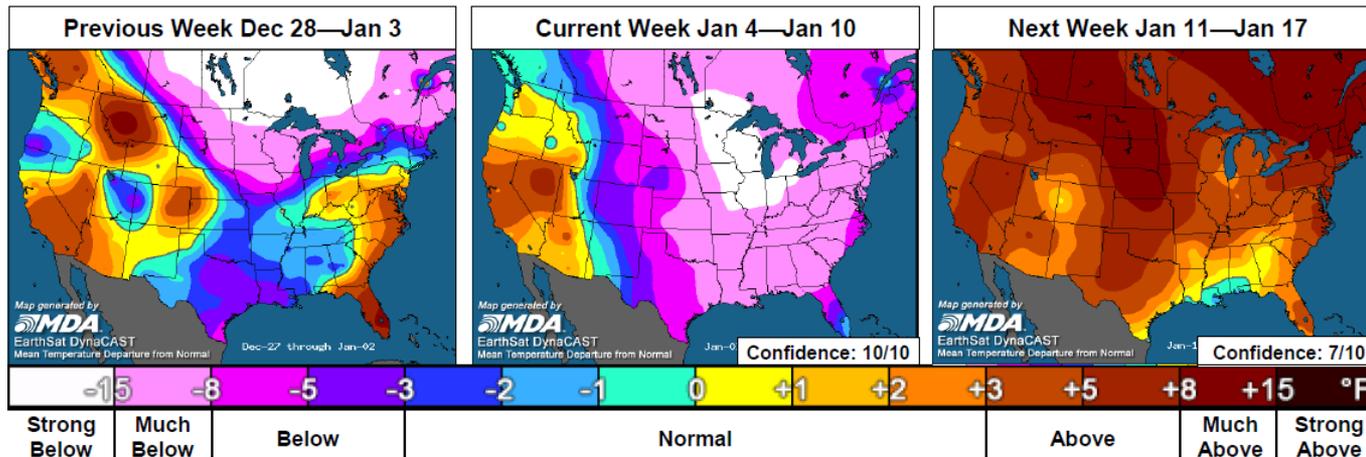
### Power Generation Demand



## Weather Influence on Domestic Production



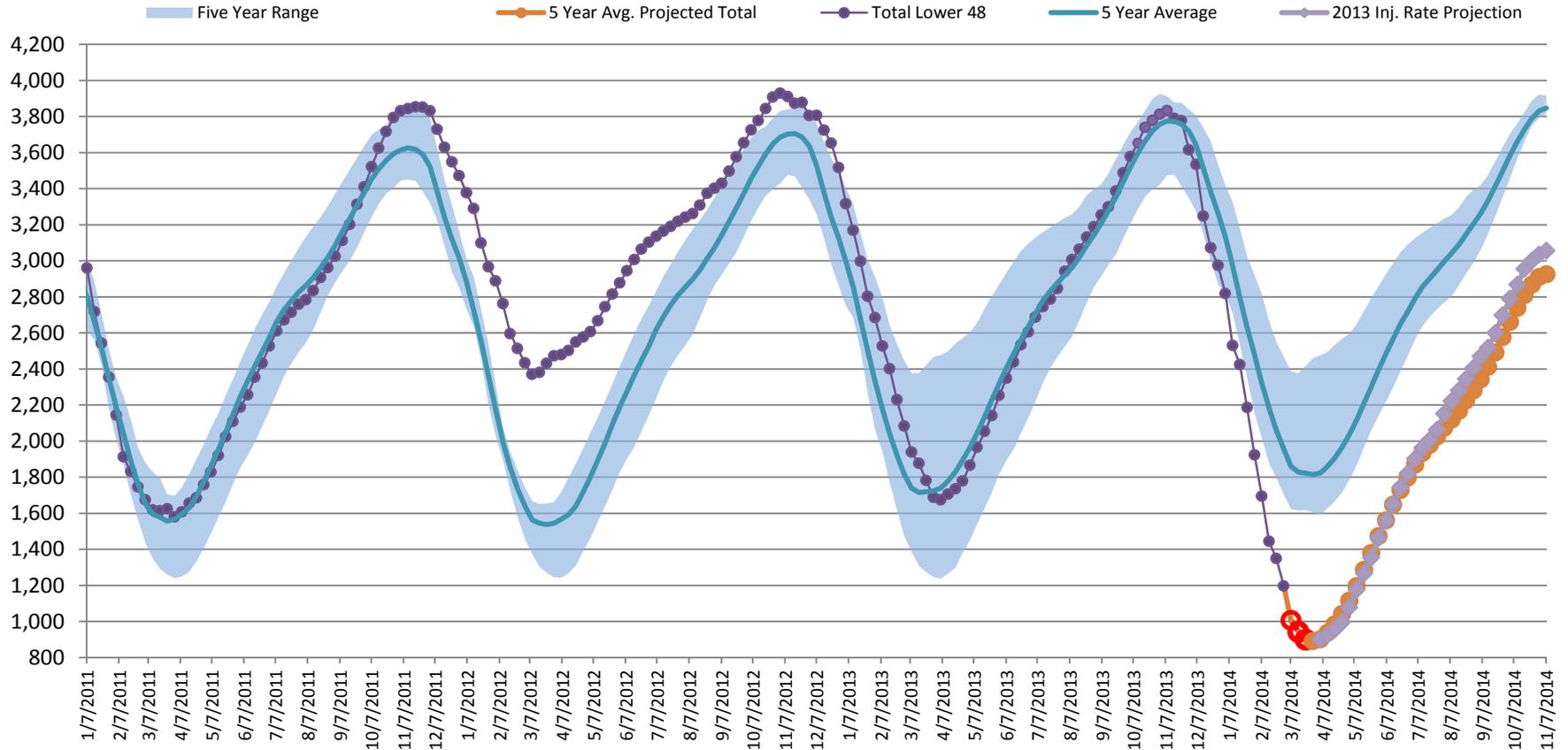
- Heading into the winter, domestic dry production had been averaging over 67 Bcf/d per EIA data
- Cold temperatures penetrating into the southern tier of the U.S. east of the Rocky Mountains is a recipe for curtailed production
- Cold shots in early December slashed production by more than 4 Bcf/d, and persistent cold in January and February regularly trimmed 2 Bcf of production



Above maps compare anomalies against a 10 year normal (2004-2013)

## US Storage Balance in Bcf

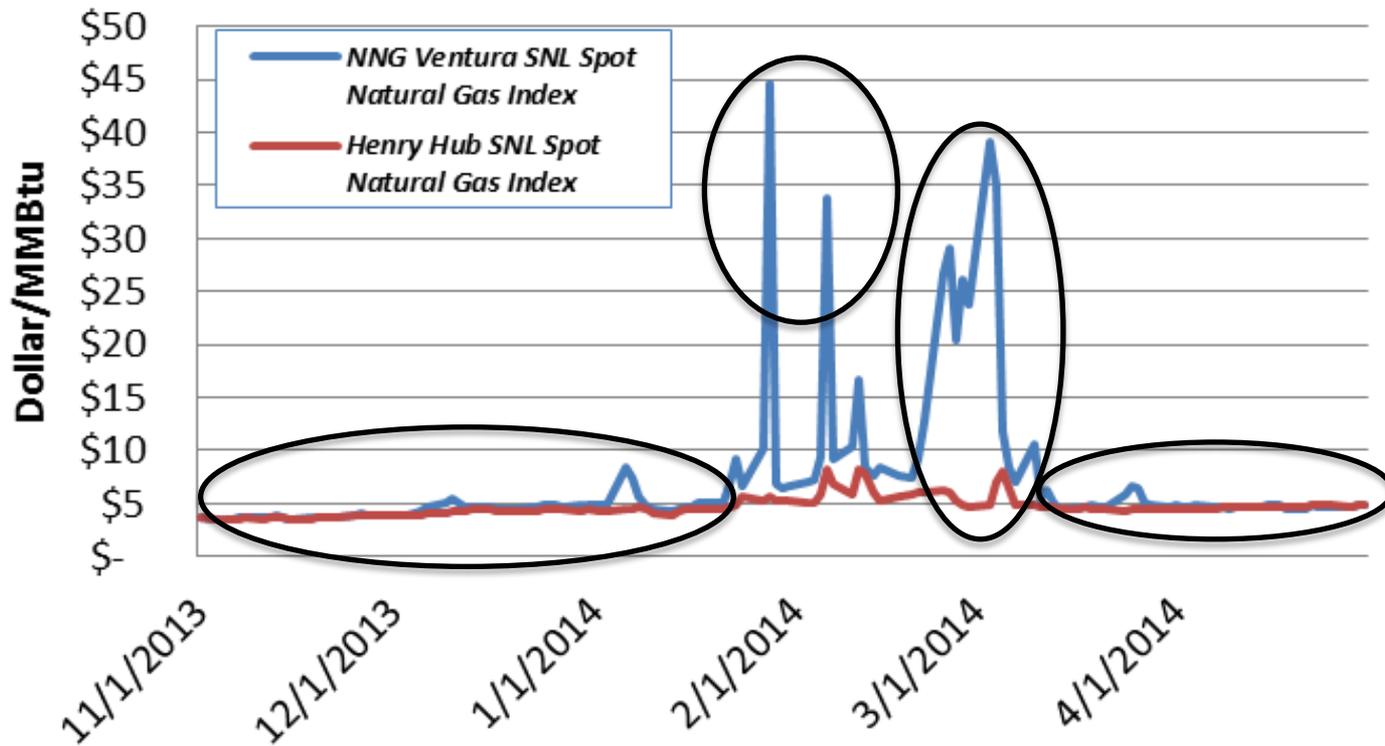
Red circles are estimated based on short term HDD outlook, remaining projections are done based on the 5- year historical average for injections and withdrawals and the 2013 injection rate.



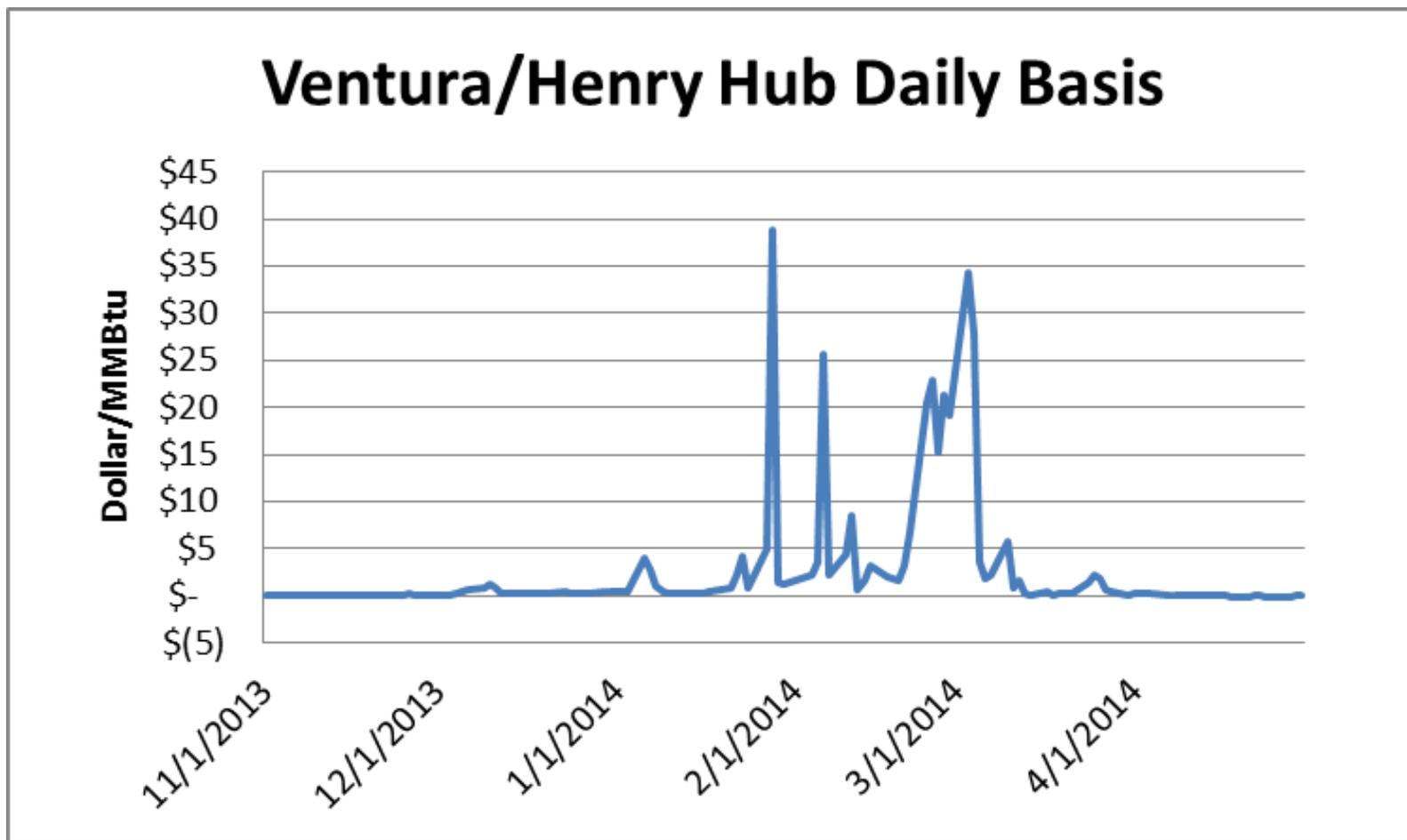
- Inventory dropped below the five year minimum as of January 10<sup>th</sup>
- Presently more than 50% below the five year average - nearly a 1000 Bcf differential
- Forecast season-ending inventory down to 824 Bcf

# Pricing Dynamics

## Ventura/Henry Hub Daily Prices



# Pricing Dynamics



# Specific Issues

- Curtailment notification failures
- Curtailment of gas delivered to “city gate” when no distribution problem existed (gas confiscated w/minimal or no compensation)
- Pipeline penalty structures that encourage over purchase of supply (NGPL – 3X Chicago Index)
- Some failure of delivery by suppliers (not force majeure)

# Recommendations

- Separation between sales service and transportation customers when supply related curtailments are required
- Testing of curtailment technology before winter season starts so there are no “surprises”
- Some level of accountability for utility performance during curtailments.