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National Association of Regulatory Utility Commissioners

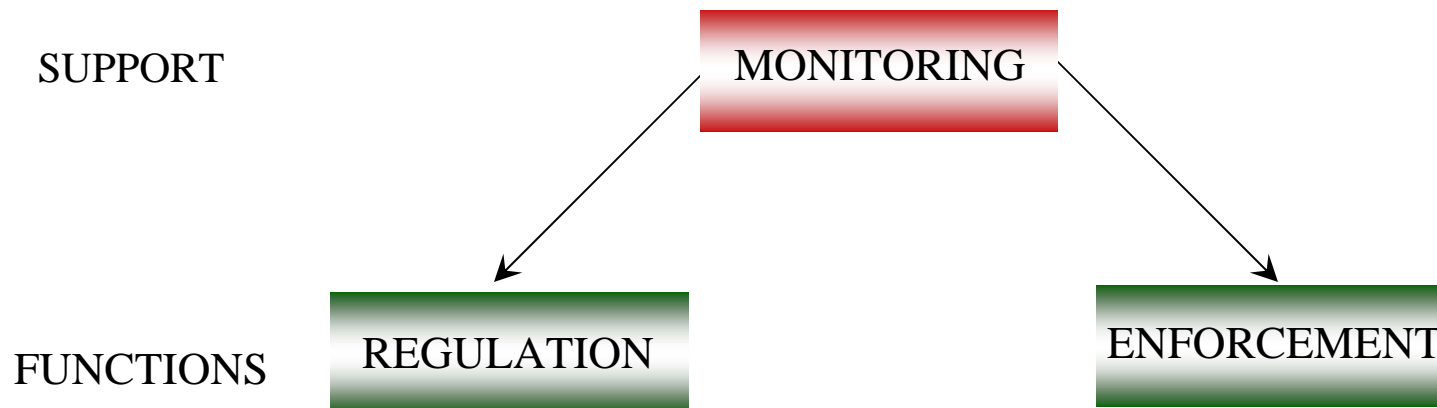
Zambia Partnership: Monitoring of the Electricity Sector

Lusaka, Zambia
March 20-24, 2006

Chairman Wendell F. Holland

Objective of Monitoring

- **The primary objective of monitoring activities is to provide the necessary information and support for the Regulatory Commission to perform both its regulatory and enforcement functions.**



Filings and Reports

- Quarterly financial statements are filed by companies
- Annual Rate Comparison Report
 - all rate elements from all gas and electric companies
 - the Commission and the State Legislature get reports
- Annual reports, compliance tariffs, quarterly revenues, utility operations, supplier bonding monitored and forwarded to Law Bureau for prosecution when deficiencies occur or violations detected



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Contents in a Report

- Summary of Equity Returns
- Summary of Returns
- Definitions and Explanations
- Summary of Company Adjustments
- Allowed Rates of Return on Common Equity
- Market Based Returns on Equity
- Formulas Used in DCF Calculations
- Formulas Used in CAPM Calculations
- Formula Used in Risk Premium Calculations
- Secretarial Letter to All Parties of Record



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Contents in a Report

- Follow-up Recommendation Number
- Staff's Follow-up Finding And Conclusion
- Staff's Follow-up Recommendation
- Recommendation Status
- Implementation Status
- Implementation Date
- Action
- Responsible Person (in the utility)



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Contents in a Report

- Introduction
- Summary of Management Effectiveness and Operating Efficiency
- Executive Management
- Customer Services
- Management Information Services
- Materials Management
- Diversity
- Affiliate Relations
- Corporate Governance
- Acknowledgements



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Market Monitoring Report

- Average Electric Wholesale Prices at Major Hubs
- NYMEX prices
- PJM Daily and Monthly Capacity Market
- Proposed Generation Summary
- Generation Air Permit applications
- Power Plant Outages
- Quarterly Average Retail Price comparisons for state, region, and country



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Market Monitoring Report

- Electric Customer activity
- Coal spot prices
- Wholesale Natural Gas, Crude Oil, Propane, and Fuel Oil prices
- Natural Gas Storage & Futures
- Natural Gas Customer Activity
- EIA Natural Gas and Crude Oil Short Term Forecast
- Gulf of Mexico storm recovery



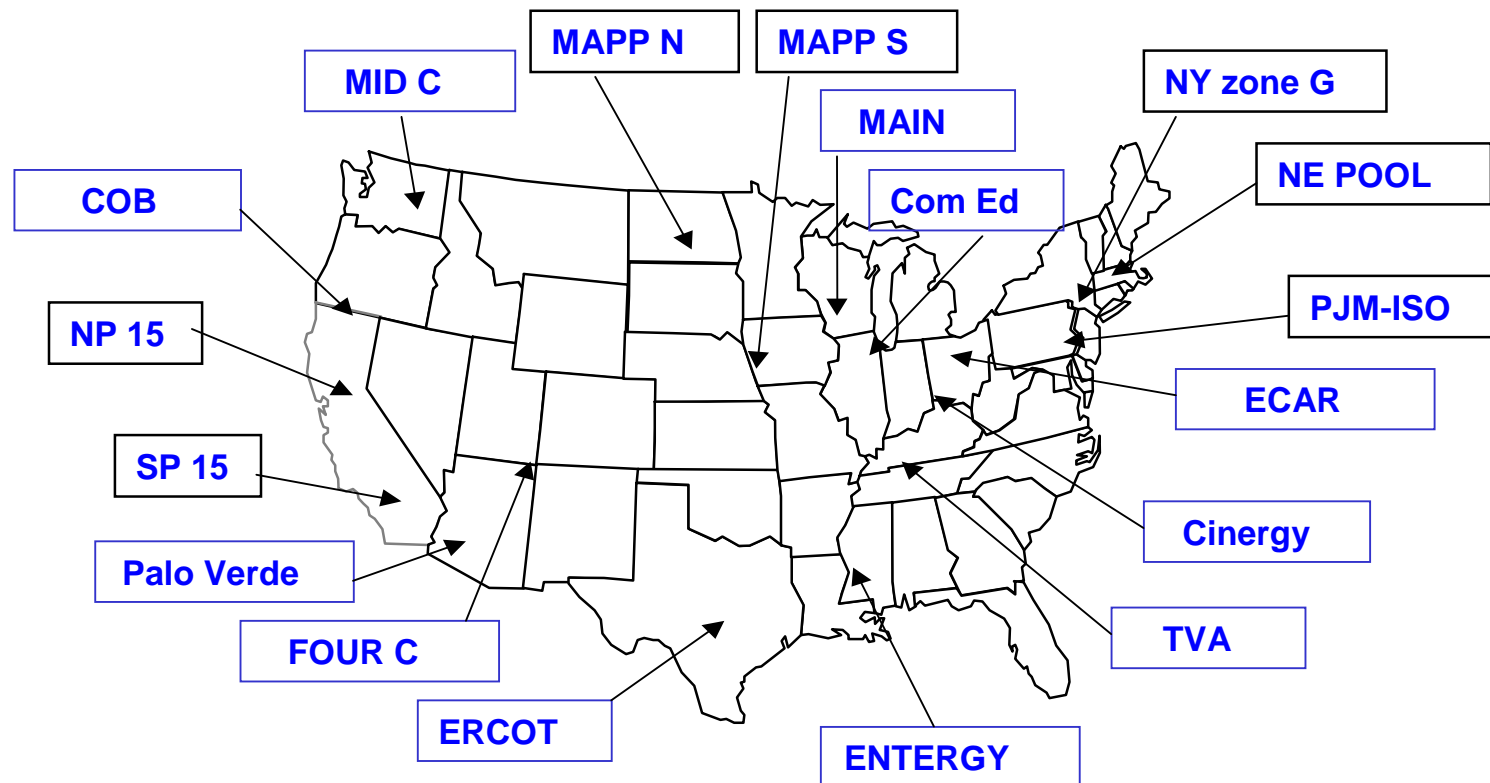
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Resources

Electric Market Hubs

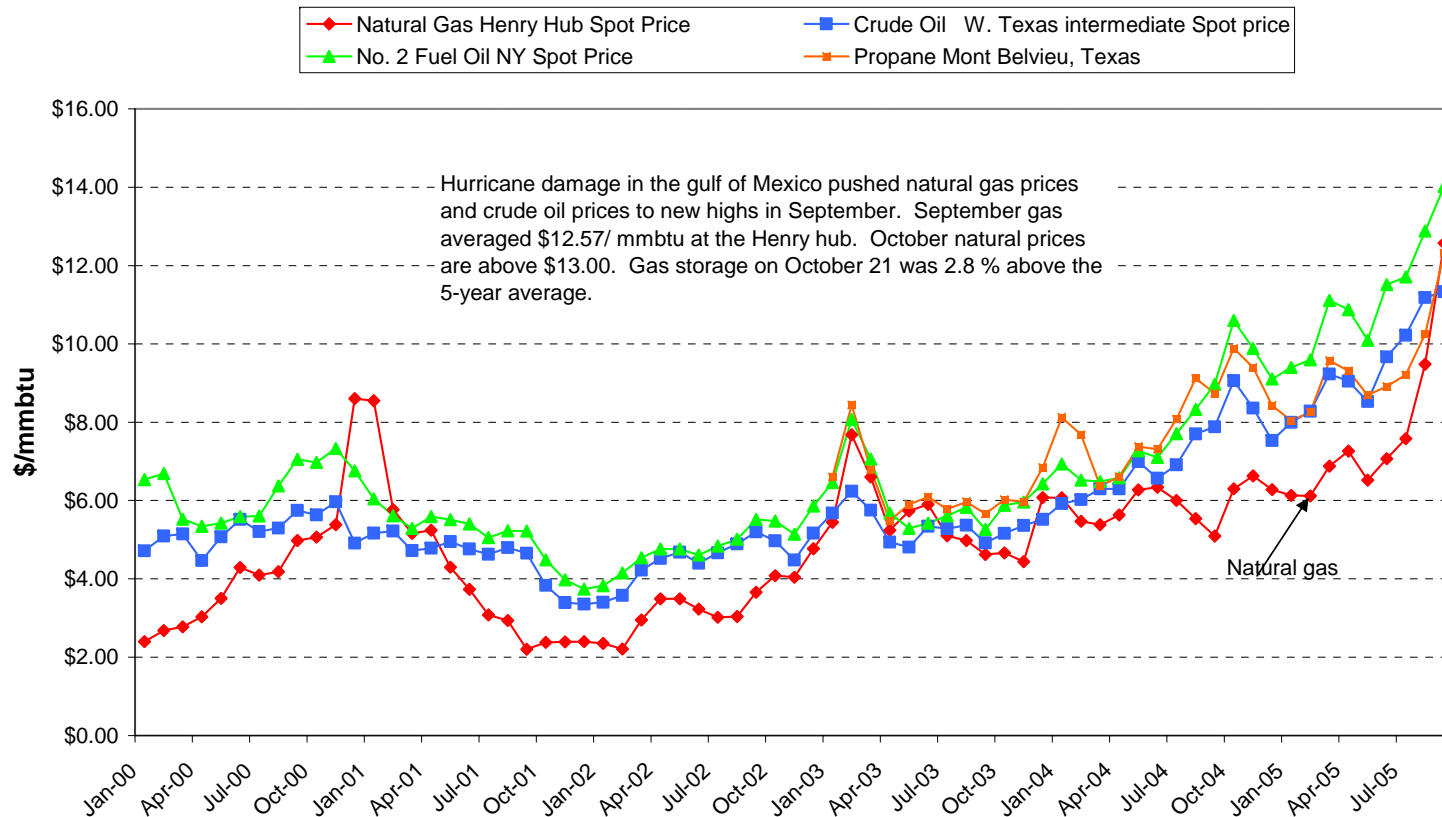


Resources

Wholesale Fuel Prices by Heat Content

Data from EIA *Weekly Gas Report* and EIA *Weekly Petroleum Status Report* (unweighted average)

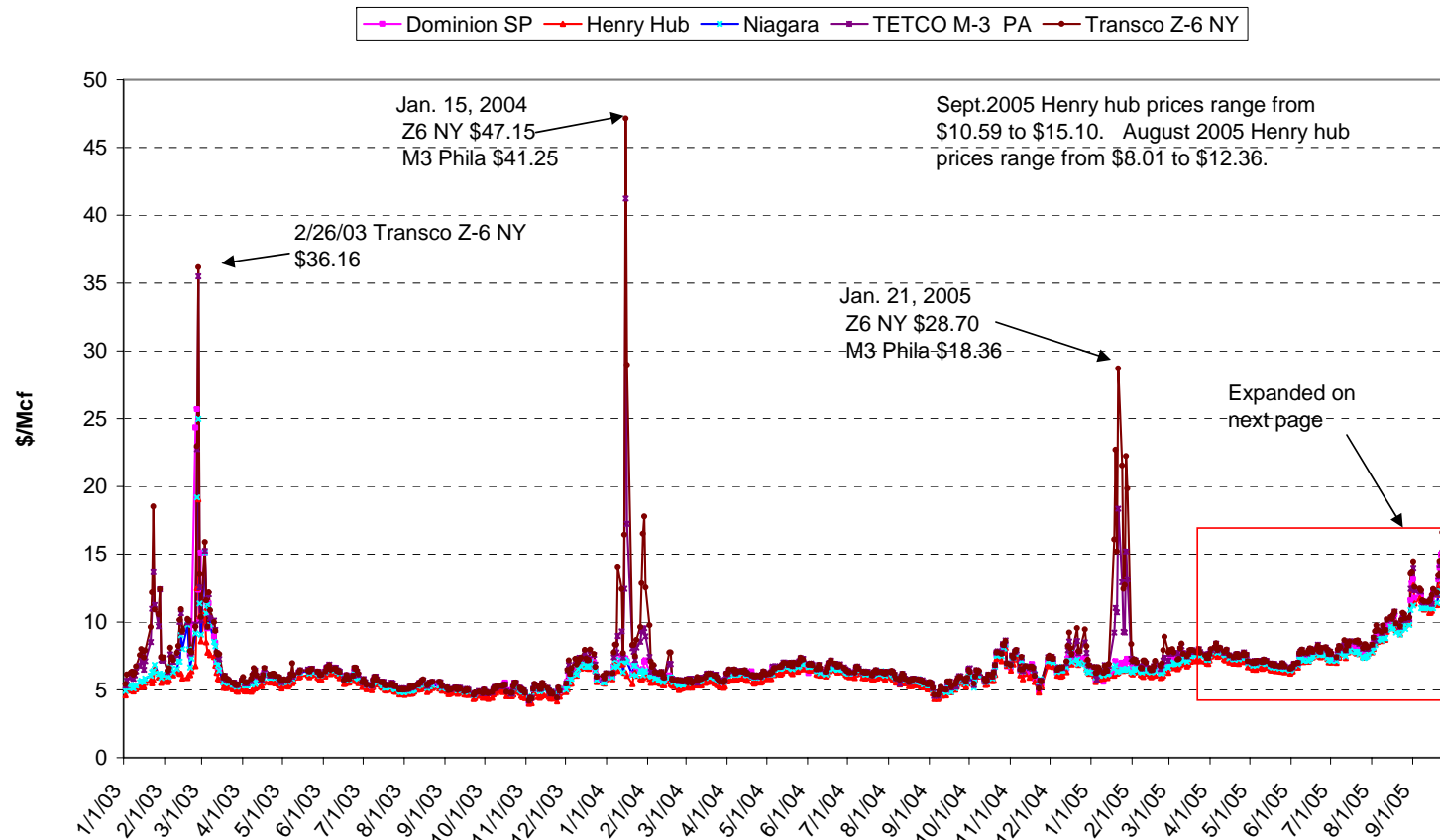
Contact Bill Hall 3-1547, docs 311132



Resources

GAS WHOLESALE PRICES AT SELECTED HUBS

Data from Enerfax Daily. Additional charts available in DOCS 529094, 227770. Contact Bill Hall 3-1547





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Examples of data resources

(please note the following resources are NOT endorsed by the presenter and are for information purposes only)

- www.doe.gov
- www.eia.doe.gov
- www.ferc.gov
- www.nymex.com
- www.bloomberg.com
- www.pjm.com
- Wall Street journal



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Reliability Performance Measures

- Benchmarks and standards established by PUC
- Based on 4 indices adopted by the Institute of Electrical and Electronic Engineers (IEEE)
 1. Customer Average Interruption Duration Index (CAIDI)
 2. System Average Interruption Frequency Index (SAIFI)
 3. System Average Interruption Duration Index (SAIDI)
 4. Momentary Average Interruption Frequency Index (MAIFI)
- Submitted by EDCs on quarterly and annual basis
- EDCs required to report on analysis of outage causes
- Provide analysis of worst performing 5% of circuits

Major Events

- To analyze and set measurable goals, major events are excluded from calculation
- Major events are defined as:
 - **Interruption** beyond control of EDC which affects at **10% of customers** for **5 minutes** or more
 - Unscheduled interruption by an EDC to maintain adequacy and security of system
- In 2004,
 - 24 requests for exclusion of major events
 - Commission approved 21