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Lost and Unaccounted-for Gas:
Practices of State Utility Commissions

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Gas Flows from Receipts to Deliveries

Receipts – (LAUF Gas + Adjustments) = Deliveries, or
LAUF Gas = (Receipts – Deliveries) – Adjustments

LAUF% = LAUF Gas/Receipts
# Sources of LAUF Gas and Mitigative Actions

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<thead>
<tr>
<th>Source</th>
<th>Problem</th>
<th>Mitigative Action</th>
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| Pipe leaks          | ▪ High levels or dramatic change in LAUF gas might indicate a safety threat | ▪ Continuous monitoring of leaks  
▪ Detailed leak surveys  
▪ Repair or replace at-risk pipes in a timely fashion |
| Measurement error   | ▪ Inaccurate gas volumes at customer meters                               | ▪ Testing and calibration of meter accuracy  
▪ Replacement or maintenance of malfunctioning meters  
▪ Installation of automated meter-reading devices to compensate for temperature and pressure differences |
| ▪ Temperature and pressure difference  
▪ Heat value conversion  
▪ Meter inaccuracies |                                                                                       |                                                                                                                                   |
| Accounting error    | ▪ Inaccurate calculations and misinterpretation of meter data  
▪ Improper accounting for gas receipts and deliveries | ▪ Periodic internal audits  
▪ Proper staff training  
▪ Well defined standard practices |
| Third party damage  | ▪ All customers paying for gas losses and repairs  
▪ Safety threat leading to incidents | ▪ Proactive program that informs the public of the dangers of digging and calling 811 before digging  
▪ Strict penalties (usually imposed by a state agency) for the guilty party  
▪ Charges to the guilty party for gas losses and repairs |
| Cycle billing       | ▪ Timing mismatch between gas receipts and deliveries                    | ▪ More frequent meter reads (e.g., monthly)  
▪ Less accounting lag |
| Stolen gas          | ▪ All customers subsidizing delinquent customers  
▪ Safety threat for local community | ▪ Inspection of meters for signs of tampering  
▪ Follow-up investigation  
▪ Strict penalties for delinquent customers |
| “Blowdown”          | ▪ Released gas into the atmosphere during maintenance, inspections or emergency procedures | ▪ Inject “blowdown” gas into low-pressure mains by adding piping from compressors to the mains |
Regulatory Concerns

- **The incentive problem**
  - One concern is weak incentives for utilities to manage LAUF gas
  - Typically a marginal area of review by commissions

- **Higher purchased gas costs for customers**
  - Commissions typically consider LAUF-gas costs as part of a utility’s cost of service
  - Commissions have a duty to evaluate the prudence of utility actions or non-actions in determining whether customers should pay for those costs

- **Safety concerns from excessive pipe leaks**
  - Gas leaks typically do not pose a safety threat
  - Commissions have particular concerns over upward trends in LAUF gas, since they might “red flag” a pipeline safety threat
  - Other factors may account for this trend, but it is hard for a utility to know if the problem is gas leakage, an increase in measurement error or something else
Major Challenges for Commissions

• Definition
  o No single definition of LAUF gas across utilities, even those located in the same state

• Measurement
  o Little empirical evidence on the effects of individual factors on LAUF gas

• Multiple Causes
  o Several causes accounting for LAUF gas

• Annual Variability
  o High year-to-year variability for some utilities
Major Challenges for Commissions (continued)

- **Unique Determinants**
  - Large differences in LAUF gas, as a percentage of sendout, across utilities

- **Degree of Control**
  - Some factors of LAUF gas within the control of a utility, others are not

- **Recognition of Patterns**
  - Difficulty in forecasting LAUF gas for an individual utility, as year-to-year levels can fluctuate widely
NRRI sent out 14 survey questions to state utility commissions in mid-January 2013 inquiring into their policies and practices on LAUF gas

We received 41 responses

The questions covered:

- The incentive they give utilities to manage their LAUF gas
- The importance they place on LAUF gas
- Their perceptions on the effectiveness of utilities in managing LAUF gas, and
- How they evaluate LAUF-gas levels and what criteria they apply
Current Regulatory Practices  □ continued

- **Highlights of responses**
  - Commissions normally review LAUF gas as part of an audit of a utility’s gas purchasing practices, either in a rate case review or PGA reconciliation.
  - Several commissions expressed concerns when LAUF gas dramatically increases from one year to another.
  - The strongest incentive for utilities to manage LAUF in most instances appears to lie with the increased likelihood of a pipeline incident if they ineffectively repair or eliminate leaks.
  - Almost all state commissions allow the recovery of LAUF-gas costs in a PGA mechanism.
  - Many gas utilities have recently embarked on accelerated pipeline replacement programs that should lower the amount of LAUF gas in the future.
  - While the vast majority of survey respondents expect utilities to reasonably manage their LAUF gas, few have an opinion as to whether utilities could do a better job.
  - Utilities generally do not break down LAUF gas by source, at least in quantitative form.
  - Several commissions monitor LAUF gas in a rate case, or a PGA filing.
Regulatory Options to Manage LAUF Gas

- **Regulatory tools**
  - **Monitoring**
    - Utility reports to the commission, who reviews the information and takes appropriate action
  - **Target setting**
    - Commission sets a standard that triggers (a) further investigation, (b) a utility explanation or (c) a direct penalty
  - **Incentive mechanism**
    - Commission rewards or penalizes a utility based on actual performance relative to a prespecified benchmark
Considerations for Commissions

- For benchmarking, tracking an individual utility’s LAUF percentage over time may offer the best metric.
- Commissions might consider taking a proactive stance in assessing the performance of utilities in managing LAUF gas, especially in making sure that utilities are exploiting all prudent actions to manage LAUF gas.
- Commissions should consider requiring utilities to compile better information on the individual sources of LAUF gas.
- Utilities can influence LAUF-gas levels in different ways (a major point in the paper).
- An effective commission tool is to monitor and assess utilities’ LAUF-gas levels.
Future Projects

- Gas/Electricity Interdependency
- Gas Infrastructure Needs
- Updated Natural Gas Vehicle Study
- Specific Ratemaking Issues
- Bolstering Demand for Natural Gas
- High Pipeline ROEs