

# **Lost-and-Unaccounted-for Gas: State Utility Commission Practices**

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**NARUC Subcommittee on Gas**

**Orlando, Florida**

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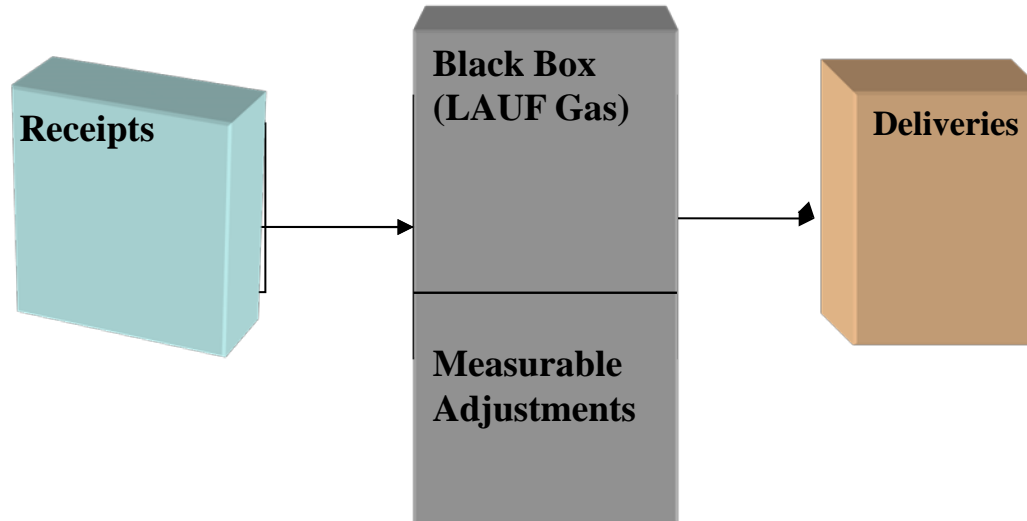
# Topics

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- Definition of lost and unaccounted-for (LAUF) gas
- Regulatory concerns and questions
- Current regulatory practices (NRRI survey)
- Regulatory options to manage LAUF gas
- Considerations for state utility commissions

# Gas Flows from Receipts to Deliveries

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

**LAUF Gas = (Receipts – Deliveries) – Adjustments**

**LAUF% = LAUF Gas/Receipts**

# Sources of LAUF Gas and Mitigative Actions

Source	Problem	Mitigative Action
<b>Pipe leaks</b>	<ul style="list-style-type: none"> <li>▪ High levels or dramatic change in LAUF gas might indicate a safety threat</li> </ul>	<ul style="list-style-type: none"> <li>▪ Continuous monitoring of leaks</li> <li>▪ Detailed leak surveys</li> <li>▪ Repair or replace at-risk pipes in a timely fashion</li> </ul>
<b>Measurement error</b> <ul style="list-style-type: none"> <li>▪ Temperature and pressure difference</li> <li>▪ Heat value conversion</li> <li>▪ Meter inaccuracies</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inaccurate gas volumes at customer meters</li> </ul>	<ul style="list-style-type: none"> <li>▪ Testing and calibration of meter accuracy</li> <li>▪ Replacement or maintenance of malfunctioning meters</li> <li>▪ Installation of automated meter-reading devices to compensate for temperature and pressure differences</li> </ul>
<b>Accounting error</b>	<ul style="list-style-type: none"> <li>▪ Inaccurate calculations and misinterpretation of meter data</li> <li>▪ Improper accounting for gas receipts and deliveries</li> </ul>	<ul style="list-style-type: none"> <li>▪ Periodic internal audits</li> <li>▪ Proper staff training</li> <li>▪ Well defined standard practices</li> </ul>
<b>Third party damage</b>	<ul style="list-style-type: none"> <li>▪ All customers paying for gas losses and repairs</li> <li>▪ Safety threat leading to incidents</li> </ul>	<ul style="list-style-type: none"> <li>▪ Proactive program that informs the public of the dangers of digging and calling 811 before digging</li> <li>▪ Strict penalties (usually imposed by a state agency) for the guilty party</li> <li>▪ Charges to the guilty party for gas losses and repairs</li> </ul>
<b>Cycle billing</b>	<ul style="list-style-type: none"> <li>▪ Timing mismatch between gas receipts and deliveries</li> </ul>	<ul style="list-style-type: none"> <li>▪ More frequent meter reads (e.g., monthly)</li> <li>▪ Less accounting lag</li> </ul>
<b>Stolen gas</b>	<ul style="list-style-type: none"> <li>▪ All customers subsidizing delinquent customers</li> <li>▪ Safety threat for local community</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inspection of meters for signs of tampering</li> <li>▪ Follow-up investigation</li> <li>▪ Strict penalties for delinquent customers</li> </ul>
<b>“Blowdown”</b>	<ul style="list-style-type: none"> <li>▪ Released gas into the atmosphere during maintenance, inspections or emergency procedures</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inject “blowdown” gas into low-pressure mains by adding piping from compressors to the mains</li> </ul>

# Regulatory Concerns

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- **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 typically 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

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- **Definition**

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

- **Measurement**

- Little empirical evidence on the effects of individual factors on LAUF gas

- **Multiple Causes**

- Several causes accounting for LAUF gas

- **Annual Variability**

- High year-to-year variability for some utilities

# Major Challenges for Commissions $\pm$ *continued*

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- **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

# Current Regulatory Practices

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- NRRI sent out 14 survey questions to state utility commissions in mid-January 2013 inquiring into their policies and practices on LAUF gas
- 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 $\pm$ *continued*

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- NRRI received responses from 41 states
- Commissions vary widely in their vigilance toward monitoring LAUF gas:
  - ✓ Some commissions devote little effort to reviewing LAUF gas; they allow recovery of their costs with minimal oversight
  - ✓ Other commissions place a cap on allowed cost recovery or apply an explicit incentive mechanism
  - ✓ A third group of commissions routinely scrutinizes levels of LAUF gas to determine cost recovery or to identify any potential safety or other problems; these commissions tend to act when levels of LAUF-gas are abnormal or deviate far from historical averages

# 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
- A strong 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 well 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

# Selected State Practices

State/Utility	Practices
<b>Chesapeake Utilities</b>	<ul style="list-style-type: none"> <li>▪ Unaccounted for Gas Incentive Mechanism, whose purpose is to reduce LAUF gas below a predetermined benchmark</li> </ul>
<b>Atlanta Gas Light</b>	<ul style="list-style-type: none"> <li>▪ Minimum LAUF-gas standard of 1.41% to 1.81% for the 16-year rolling average</li> </ul>
<b>Idaho</b>	<ul style="list-style-type: none"> <li>▪ Temporary commission cap on LAUF gas because of abnormal increase in LAUF gas</li> <li>▪ Periodic utility reporting on improvements in LAUF-gas performance</li> </ul>
<b>Indiana</b>	<ul style="list-style-type: none"> <li>▪ <u>NIPSCO</u>: Cap at 1.04% with all LAUF-gas costs recovered in the PGA mechanism</li> <li>▪ <u>Vectren</u>: Change in the recovery of LAUF-gas costs from base rates to the PGA mechanism, in addition to capping cost recovery at LAUF-gas percentage of 0.8%</li> </ul>
<b>Michigan</b>	<ul style="list-style-type: none"> <li>▪ All of LAUF-gas costs recovered in the base rate</li> </ul>
<b>New York</b>	<ul style="list-style-type: none"> <li>▪ White paper on LAUF gas</li> <li>▪ Targeted incentive mechanism</li> </ul>
<b>Ohio</b>	<ul style="list-style-type: none"> <li>▪ The commission can disallow a portion of the costs if LAUF gas exceeds 5%, pursuant to the Ohio Administrative Code</li> </ul>
<b>Oklahoma</b>	<ul style="list-style-type: none"> <li>▪ Each utility has a Safe Harbor provision limiting the percentage of LAUF gas recoverable from customers through the PGA mechanism; LAUF gas above the allowed levels triggers a review</li> <li>▪ Performance Based mechanism for LAUF-gas</li> </ul>
<b>Pennsylvania</b>	<ul style="list-style-type: none"> <li>▪ Commission rule on uniform definition of LAUF gas and more stringent LAUF-gas targets over time</li> </ul>
<b>Texas</b>	<ul style="list-style-type: none"> <li>▪ 5% cap on LAUF gas with exceptions</li> </ul>

# Regulatory Options to Manage LAUF Gas

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- **Guiding principles on performance measurement and evaluation**
  - Two distinct factors (management efforts, outside factors)
  - Different applications of performance measures
  - *Ex post* and *ex ante* performance measures
  - Standard for performance
- **Benchmarking**
  - Addressing information asymmetry
  - Criteria for benchmarking a specific utility function

# Six Observations on Benchmarking

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- A benchmark can establish a point of reference for measuring and judging the performance of an individual utility
- Benchmarking is generally best applied in “red flagging” potential problems and as a supplemental source of information in determining a utility’s performance
- A lax benchmark for a utility can have a perverse effect
- An overly stringent benchmark can unfairly penalize a utility for prudent behavior
- Benchmarking quantifies past performance and establishes a baseline for gauging improvements and making comparisons across utilities
- The nature of LAUF gas makes it difficult to allow for setting a cap that is compatible with well-accepted industry practices

- **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*

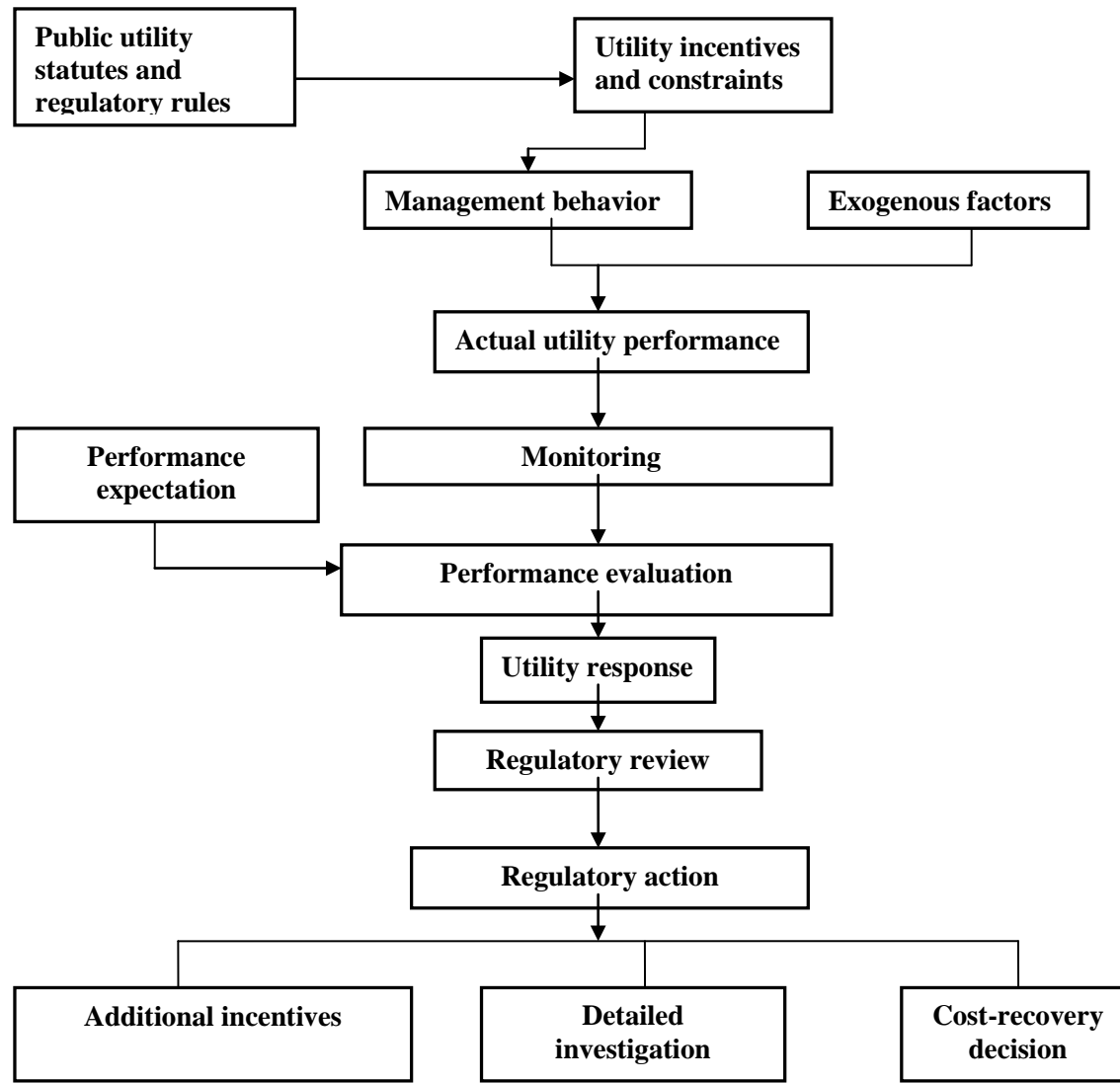
- Commission rewards or penalizes a utility based on actual performance relative to a prespecified benchmark

# A Multi-Step Regulatory Review

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- Recognition of regulatory influence on utility performance
- Cursory performance assessment
- Post-review action
- The end result of accountable regulation

# Regulatory Benchmarking, Monitoring and Action





# Considerations for Commissions

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- Comparing LAUF percentages across utilities at a given point in time for determining cost recovery and utility prudence could lead to inappropriate action
- The best benchmark arguably comes from tracking an individual utility's LAUF percentage over time
- Utilities can influence LAUF-gas levels in different ways
- 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
- Commissions should exercise caution in executing an incentive mechanism for LAUF gas
- An effective commission tool is to monitor and assess utilities' LAUF-gas levels

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- Presentation adapted from Ken Costello, *Lost and Unaccounted-for Gas: Practices of State Utility Commissions*, NRRI-13-06, June 2013