



Municipal Technical Advisory Service
INSTITUTE *for* PUBLIC SERVICE

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Natural Gas Process Described

Dear Reader:

The following document was created from the MTAS website ([mtas.tennessee.edu](http://www.mtas.tennessee.edu)). This website is maintained daily by MTAS staff and seeks to represent the most current information regarding issues relative to Tennessee municipal government.

We hope this information will be useful to you; reference to it will assist you with many of the questions that will arise in your tenure with municipal government. However, the *Tennessee Code Annotated* and other relevant laws or regulations should always be consulted before any action is taken based upon the contents of this document.

Please feel free to contact us if you have questions or comments regarding this information or any other MTAS website material.

Sincerely,

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Reference Number: MTAS-585

Agent

Most small to medium LDCs (Local Distribution Companies) use an agent to manage their gas purchases, nominations, daily balancing, allocations and other pipeline/supply issues. The LDC signs formal documents with the pipeline and suppliers that allow the agent to conduct business using the transportation contracts, supply rights, storage rights and other rights. The agent charges a monthly fee, which normally consists of a small fixed fee per month plus a cost per MMBtu purchased or managed for the month. This may be 2 cents to 10 cents or more per MMBtu, or it may be based on some other mechanism agreed upon in the agent/supplier contract.

The agent monitors the LDC's gas activities at the city gate, storage activities, storage amounts versus predicted levels for the gas year, contracts balancing and gas pricing on NYMEX.

The agent remains in contact with the pipelines, suppliers and other parties involved in natural gas deliveries. They should act as the watchdog for the LDC. The agent should alert the LDC of market trends or industry actions that may be detrimental to the system.

The LDC staff must work closely with agents in forecasting future gas needs, current usage trends and how to prepare for them, when and how to purchase gas and other issues. Communication should be frequent and frank between the LDC and the agent.

A Tennessee municipal gas system may choose a municipal energy acquisition corporation or a municipal gas authority for its gas supply and to act as the agent for the LDC. The corporation or authority may work in several states.

Fuel Percentage

The LDC must purchase more natural gas than it needs because a portion of the gas purchased is used to provide fuel for the pipeline turbines that push the gas through the pipes. This fuel percentage is normally two to nine percent of the amount needed at the city gate. The farther the gas pumped from the supply the higher the percentage. In some cases it can exceed 10 percent.

Example

The LDC wants 100 MBtus delivered. Its firm transport contract requires five percent for fuel so the LDC purchases 105 MMBtus from its supplier, and the gas is injected into the system. The pipeline keeps 5 MMBtus for fuel and delivers 100 MMBtus to the city gate.

Transportation Contracts

The two most common types of transportation contracts used by municipal gas systems are firm transport contracts and no-notice transport contracts. There are other types of transportation contracts that a pipeline has available. An interruptible transportation contract is normally used by large manufacturers to move gas due to the lower cost associated with the contract. These customers must have a propane or liquefied natural gas backup system on site if the contracted gas is not allowed to flow due to the low contract priority. A municipal system normally does not use an interruptible contract due to the lower level of security for delivery of the gas and the additional cost of having a backup system.

A *firm transport contract* delivers a specific amount of gas to the city gate. It does not have any storage rights on the pipeline. Most small and medium LDCs do not use these types of transportation contracts because penalties are assessed against the LDC if it incorrectly estimates the gas needed and has an imbalance. Each transportation contract has a daily maximum number of MMBtus that can be delivered. Depending on the type of contract, an LDC may have an imbalance with either under-deliveries or over-deliveries of gas. The firm transport contract must deliver the amount nominated. If it varies, it creates an imbalance on the pipeline. At the end of the month if the agent or LDC has not corrected the imbalance the pipeline can assess penalties to the LDC. If the LDC used more gas than it nominated, the pipeline also will charge the LDC for the gas at a market-cost-plus price. If the LDC used less gas than it nominated, the pipeline will pay for the gas usually at less than market cost. The imbalance penalties and costs are explained in the pipeline contract and tariffs.

Examples

A. The LDC wants 100 MMBtus delivered. Its firm transport contract requires five percent for fuel so the LDC purchases 105 MMBtus from its supplier, and the gas is injected into the system. The pipeline keeps 5 MMBtus for fuel and delivers 100 MMBtus to the city gate. The LDC used 100 MMBtus during the gas day and there is no imbalance.

B. The LDC wants 100 MMBtus delivered. Its firm transport contract requires five percent for fuel so the LDC purchases 105 MMBtus from its supplier, and the gas is injected into the system. The pipeline keeps 5 MMBtus for fuel and delivers 100 MMBtus to the city gate. The LDC uses 80 MMBtus during the gas day. This is an imbalance. The pipeline has 20 MMBtus that the LDC nominated, and the gas has nowhere to go.;

C. The LDC wants 100 MMBtus delivered. Its firm transport contract requires five percent for fuel. so the LDC purchases 105 MMBtus from its supplier, and the gas is injected into the system. The pipeline keeps 5 MMBtus for fuel and delivers 100 MMBtus to the city gate. The LDC uses 135 MMBtus during the gas day. This is an imbalance. The LDC used 35 MMBtus that it did not nominate or purchase.

Examples B and C will trigger penalties and other costs at the end of the month if the LDC or agent does not correct the imbalance before the end of the month. The pipeline will *not* correct the imbalance. The agent or LDC must monitor deliveries and work to correct imbalances before the end of each month.

A *no-notice contract transport contract* delivers a specific amount of gas to the city gate, and it has storage rights on the pipeline. Thus, if the LDC does not use all the gas nominated on the contract for the gas day, the unused amount automatically is credited to the storage account associated with the contract. On a day that the LDC consumption is greater than the nominated amount, the difference is automatically subtracted from the storage account. The contract establishes the set amount of MMBtus that can be stored.

During the winter months the no-notice contract gas delivery mechanism is different than in other months. There is a daily maximum amount for purchased and nominated gas, and there is a separate maximum amount of gas that can be withdrawn from the storage account. These two amounts added together specify how many MMBtus can be delivered on the no-notice contract for a gas day.

Examples

A. The LDC nominated 100 MMBtus to be delivered on a no-notice contract with a five percent fuel rate during June. The LDC purchased 105 MMBtus, and the pipeline used 5 MMBtus for fuel leaving the LDC with 100 MMBtus available at the city gate. The LDC used 85 MMBtus during the gas day. Fifteen MMBtus were automatically credited to the storage account associated with the no-notice contract.

B. The LDC nominated 100 MMBtus to be delivered on a no-notice contract with a five percent fuel rate during January. The no-notice contract has a daily maximum of 175 MMBtus, of which 100 may be nominated and 75 may come from storage. The LDC purchased 105 MMBtus, the pipeline used 5 MMBtus for fuel, and the LDC had 100 MMBtus available at the city gate. The LDC used 165 MMBtus during the gas day. The nomination was 100, which is 65 MMBtus greater than the gas used. The pipeline automatically debited the storage account associated with the no-notice contract 65 MMBtus to balance the delivery.

Storage

Natural gas can be stored in a depleted natural gas field, a salt cavern or a liquefied natural gas storage facility. When needed on the pipeline to balance demand, the gas is removed from the storage area and pumped into the system. Storage accounts are matched to gate deliveries and nominations to track storage activity. A no-notice contract normally has storage rights associated with it. An LDC may contract for additional storage if needed.

DISCLAIMER: The letters and publications written by the MTAS consultants were written based upon the law at the time and/or a specific sets of facts. The laws referenced in the letters and publications may have changed and/or the technical advice provided may not be applicable to your city or circumstances. Always consult with your city attorney or an MTAS consultant before taking any action based on information contained in this website.

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