



# **Can CNG serve to expand the distribution system of a natural gas utility?**

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The abundance of natural gas production in North America and resulting low natural gas prices make it significantly economical for industrial, commercial, institutional and residential customers of oil and propane to switch to natural gas. Often, these customers are too far from existing pipeline distribution mains to economically serve these potential new customers. Line-extension policies of the local distribution company (“LDC”) must follow guidelines of the state public utility commission (“PUC”), many of which are currently being promulgated, which are meant to balance the interests of new customers, existing customers, LDC shareholders and public policy. These guidelines can include need for upfront costs associated with LDC main extension and service construction to be entirely borne by the new customer or set of customers. These costs can be significant and are in addition to the cost the potential customer must bear associated with conversion of their furnace or boiler at their residence or company from the current oil or propane system to natural gas.

Compressed Natural Gas (“CNG”)<sup>1</sup> could allow an LDC to expand natural gas services to customers that are not currently within economical extension distance of existing pipeline systems. These customers can be within a current franchise area of an LDC but be beyond the existing distribution pipeline reach or can even be outside the current franchise area of the LDC.

A distributed CNG system generally starts with a common interest by a customer or set of geographically clustered customers to switch to lower cost natural gas. Interest can come from the customer itself (or themselves in the case of a cluster of customers), the LDC operating in the franchise area or wishing to operate in a new franchise area, or a third party supplier of distributed fuels offering natural gas.

Industrial, commercial and institutional customers can serve as an “anchor tenant” in distribution system expansion planning by having consumption significant enough to improve the LDCs’ economics of the main extension and/or reducing the level of customer contribution necessary to finance construction.

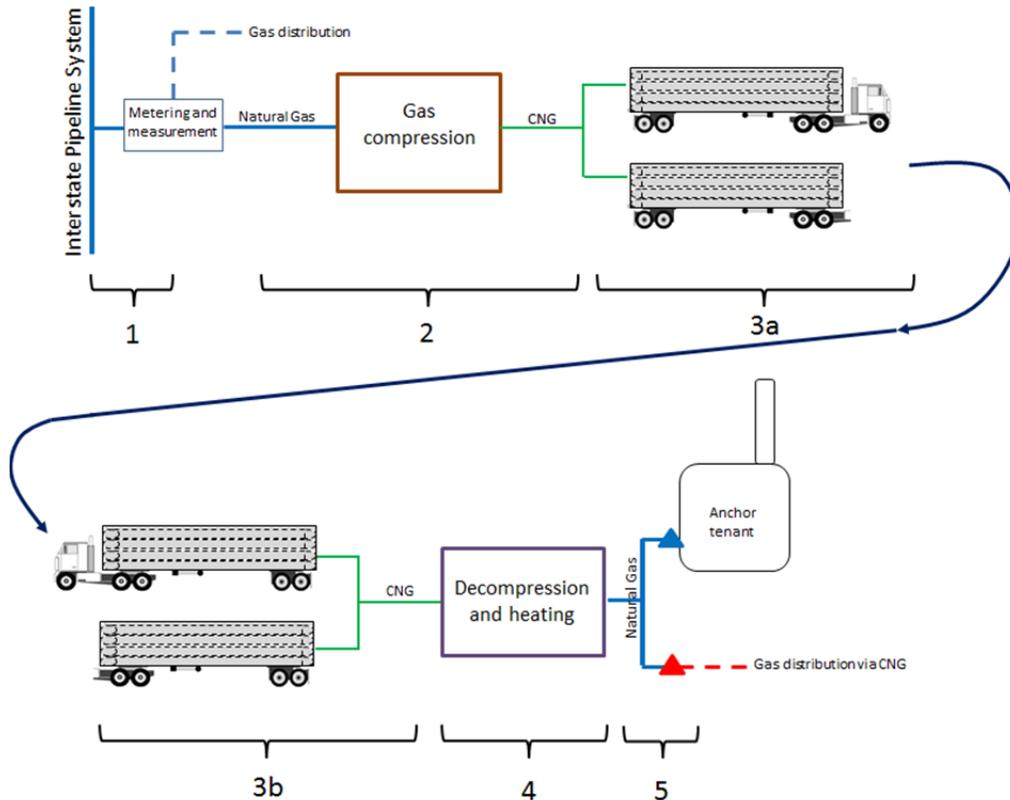
The regulatory treatment of the CNG infrastructure would likely depend on whether or not the CNG is delivered to captive customers via pipeline or simply delivered to a stand-alone industrial, commercial or institutional customer. The ownership of the assets that make up the distribution chain between the source gas for the production of CNG and the ultimate delivery of CNG to the customer will also determine the level of involvement of the regulatory authority. The CNG distribution chain is comprised of the following:

1. Natural gas delivered to meter of CNG production facility
2. CNG production and truck loading facility
3. CNG trailers and tractors

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<sup>1</sup> LNG and propane could also be used to expand services to new clusters of customers. LNG and propane, while more costly alternatives than CNG with longer lead times for construction of satellite storage and vaporization, have the advantage of on-site fuel storage which could add reliability to gas supply in the event of weather and other trucking related delays or unanticipated disruption of feed gas to the CNG production facility.

4. CNG decompression unit
5. Pipeline to customer – this can be i) the short pipeline between the decompression unit and the anchor customer, ii) the short pipeline between the decompression unit to the anchor customer plus a pipeline to the LDC distribution system, or iii) the short pipeline between the decompression unit and the LDC distribution system (no anchor tenant).



In order to serve gas distribution customers with decompressed CNG, it is important that the delivery of natural gas to the gas compression station (area 1 above) is firm. Local distribution companies have an obligation to serve its firm customers<sup>2</sup>. As such, any agreement that an LDC might reach to serve a portion of its customers (whether in an existing franchise area or in a new franchise area) with CNG (shown by the red dotted line above), the public utility commission will look to see if the gas supply is adequately reliable to serve the LDCs firm customers. In addition, the CNG supplier may include certain redundancy on the receiving end of the trucked CNG (3b), perhaps by placing a laden CNG trailer on site at all times or advancing trailer replacement time to protect against certain operating or travel conditions that might delay inventory replenishment. This may make the delivered cost of CNG slightly more expensive (but still well below the alternative oil

<sup>2</sup> As natural gas merchants, LDC's have a mandated obligation to supply firm customers with reliable, reasonably priced gas supply.

price) but would meet or exceed the reliability requirements of the LDC in serving the firm needs of its customers.

Examples of potential agreements between CNG suppliers and LDCs are as follows:

- a. LDC can sell natural gas to the CNG supplier under a tariff arrangement
- b. LDC can sell CNG to the CNG distributor at the outlet of the gas compression facility
- c. CNG supplier can sell CNG to LDC at the inlet of the decompression and heating facility
- d. CNG supplier can sell natural gas at the outlet of the meter station leading to the gas distribution pipeline (red triangle above)
- e. Direct to end user using services of CNG haul company (basically the LDC contracts with a CNG hauling company to perform the service)
- f. Equipment rental and leasing