##### August 27, 2019

**TO:** NAESB Board of Directors and All Interested Parties

**FROM:** Elizabeth Mallett, NAESB Deputy Director

**RE: Wholesale Gas Contracts Distributed Ledger Activities**

During its October 17, 2019 meeting, the Wholesale Gas Quadrant (WGQ) Executive Committee will vote on one of two recommendations that will be developed in order to draft a standard digital representation of natural gas trade events consistent with the NAESB Base Contract for Sale and Purchase of Natural Gas (NAESB Base Contract) in order to capitalize on smart contract and distributed ledger technologies (Blockchain). As you may recall, there are three WGQ Subcommittees jointly working on this effort – the WGQ Contracts, and WGQ Electronic Delivery Mechanisms (EDM) Subcommittees and the WGQ Business Practice Subcommittee (BPS) (the joint WGQ Subcommittees). Early on, the joint WGQ Subcommittees Co-Chairs developed a work paper that explained that this standards development effort would be split into two parts. Part One will contain the Contracts Data Dictionary, the Contracts Code Values Dictionary, and standards implementation language to be included in the WGQ Contracts and Standards Models. Part Two will see the development of the transaction confirmation and invoice datasets. The joint WGQ Subcommittees now anticipate voting out a recommendation for Part One of the effort during its September face-to-face meeting in Houston, Texas and will continue its work on Part Two during subsequent meetings.

Last year, Standards Request R18007 was received from Big Data Energy Services, Adjoint Inc., Pariveda, American Electric Power Service, Tennessee Valley Authority, and JKM Energy & Environmental Consulting. As explained in the text of R18007, a blockchain is a distributed ledger used for recording transactions and tracking assets in blocks. Smart contracts are protocols embedded into blockchain platforms to facilitate the automatic self-execution of a transaction if agreed upon terms are met. The distributed ledger is maintained by a group of peers, or several computers, instead of a centralized authority that may be vulnerable to attacks. Through the peer-to-peer network, each group of transactions, or blocks, are verified by consensus on the performance of a computer algorithm or permission, before they are added to the blockchain. The requestors of R18007 emphasized that the NAESB Base Contract is settled on a cumbersome process that may include emailing a PDF invoice each month. Other delivery mechanisms are used, but less than five percent use electronic transactions, EDI. Also, according to the R18007, the invoices must be reconciled and paid in a short period of time. In some cases, a preliminary invoice is sent for reconciliation before the final invoice is sent. The invoices are also large monetary amounts that can be very costly if errors are not caught or if payment is late. R18007 concluded that the NAESB Base Contract and settlement process are good candidates for blockchain technology.

Spurred by the R18007, NAESB issued a press release in September to announce the industry effort and provide information on the joint WGQ Subcommittees kick-off conference call on October 24, 2018. During that October meeting, ConocoPhillips, representing the U.S. Oil & Gas Operator Blockchain Forum, presented a blockchain presentation and the requestors of R18007 also provided presentations on the goals of the R18007 and the basics of distributed ledger technology. To date, the joint WGQ Subcommittees have held ten meetings, some on multiple days, to review and discuss the NAESB Base Contract, the, the WGQ EDM Standards, and the supporting documents for the sales settlement and reconciliation process that result from the NAESB Base Contract. As stated above, the next face-to-face meeting will be hosted by the NAESB office in Houston, Texas on September 11-12, 2019.