Calculation of the biogas injection into the existing natural gas pipeline distribution network of high-pressure by applying the software module TASI

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Abstract

The requirements for planning, design, operation, maintenance and management of gas pipeline systems and in particular gas pipeline distribution networks are increasing nowadays. Starting from the gas pipeline routing, maintenance of the pipeline network, hydraulic calculations, selection and arrangement of individual elements of the system, new conditions are constantly set up.

These requirements may be met by applying modern calculation software. The appliance of such software has become essential today, and the corresponding standard techniques. Just using this tool, it is possible to simulate the interaction of countless hydraulic conditions within complex systems.

This paper contains the results of a research, which was related to the injection of biogas into the existing distributive HVG - network of high-pressure by applying the calculation software STANET and the integrated module TASI (daily simulation). HVG is a gas supplier for about 30 municipalities with about 300.000 residents and industries in the vicinity of Stuttgart.

The research is referred to:

- The possibility of producing biogas,
- the process to convert biogas to the required quality level for injection into existing natural gas pipeline network and
- the possibility of biogas injection into the existing gas transmission network.

This paper gives a brief summary of the results related to the possibility of biogas injection into the existing gas transmission network with a hydraulic point of view.