Abstract

The global environmental community recognizes global warming as one of the major serious threats to the planet. The emissions of methane from natural gas transportation pipeline are an important factor for global warming. While being transported by pipeline, natural gas is often emitted to the atmosphere, either for depressurization (venting emissions) or leak through the pipeline (fugitive emission). Emissions of methane are of particular concern since the methane represents the major component of natural gas and a powerful greenhouse gas. The present study investigates the feasibility of gas venting mitigation, from the Algerian natural gas transportation network with pipeline pump-down technique, prior pipeline maintenance activities. First, we calculate the amount of methane released during venting operation from GZ3 40″ pipeline based on the weighted average pipe diameter and pressure in the pipeline section being repaired. We then estimate quantity of cost value of the gas recovered. We, thereafter, suggest a mobile compressor for saving this gas. The results obtained showed that using pump-down technique with portable compressor solution instead of venting mainly saves 54.873 million m^3 of gas with gain net cost saving about 11.628 million USD. Avoiding the release of gas to the atmosphere during venting operations will be crucial to mitigating greenhouse gas emissions. For the developing countries, including Algeria, mitigating these emissions can provide green investments for the joint implementation Kyoto Protocol flexibility mechanism. This will contribute to sustainable development and additional economic benefits through carbon credit revenues and technology transfer from industrialized countries.