

## Enhancing Environmental Impact Assessment for Natural Gas Pipeline Systems: Lessons in Water and Wastewater Management

**Authors :** Kittipon Chittanukul, Chayut Bureethan, Chutimon Piromyaporn

**Abstract :** In Thailand, the natural gas pipeline system requires the preparation of an Environmental Impact Assessment (EIA) report for approval by the relevant agency, the Office of Natural Resources and Environmental Policy and Planning (ONEP), in the pre-construction stage. As of December 2022, PTT has a lot of gas pipeline system spanning around the country. Our experience has shown that the EIA is a significant part of the project plan. In 2011, There was a catastrophic flood in multiple areas of Thailand. It destroyed lives and properties. This event is still in Thai people's mind. Furthermore, rainfall has been increasing for three consecutive years (2020-2022). Moreover, municipalities are situated in low land river basin and tropical rainfall zone. So many areas still suffer from flooding. Especially in 2022, there will be a 60% increase in water demand compared to the previous year. Therefore, all activities will take into account the quality of the receiving water. The above information emphasizes water and wastewater management are significant in EIA report. PTT has accumulated a large number of lessons learned in water and wastewater management. Our pipeline system execution is composed of EIA stage, construction stage, and operation and maintenance phase. We provide practical Information on water and wastewater management to enhance the EIA process for the pipeline system. The examples of lessons learned in water and wastewater management include techniques to address water and wastewater impact throughout the overall pipelines systems, mitigation measures and monitoring results of these measures. This practical information will alleviate the anxiety of the ONEP committee when approving the EIA report and will build trust among stakeholders in the vicinity of the gas pipeline system area.

**Keywords :** environmental impact assessment, gas pipeline system, low land basin, high risk flooding area, mitigation measure

**Conference Title :** ICESH 2024 : International Conference on Environmental Safety and Health

**Conference Location :** Prague, Czechia

**Conference Dates :** March 11-12, 2024