

ExxonMobil Flare Reduction Study

Background

ExxonMobil reviewed existing technology within their portfolio for potential application in flare reduction. A Downstream technology was identified with the potential to be reconfigured for flare gas chemistry. This study measured the process yields and reviewed the feasibility of installing the related equipment on the Hibernia platform as a flare reduction method.

Experimental lab research was conducted to determine if the proprietary reactor technology configuration can validate a reduction in Hibernia's flare gas emissions. The study considered the spacing limitations associated with the existing offshore facility, equipment design and sizing to ensure viability and applicability of the technology for Hibernia.

Researching innovative options for equipment sizing on Hibernia could lead to development of the technology. If successful, it could lead to reduction in flare gas emissions.

Project Objectives

- (1). Complete an assessment on the technical and economic feasibility of adapting the technology to reduce flare gas on the Hibernia platform
- (2). To assess the feasibility of installing the equipment on the Hibernia platform to support such technology adoption

Funding Amount

\$866,141

Summary of Key Results

ExxonMobil Canada Properties investigated the feasibility of adopting refinery-based technology to the offshore Hibernia production facility.

The study increased the knowledge of implementing flare reduction technology to an offshore brownfield development. Additionally, the research demonstrated the refinery-based technology's capacity to convert light-end gas into liquid products as a flare reduction technique.

The research demonstrated the technology reduces flare gas, however at this stage there is no net gain in emissions reduction potential due to the additional power requirements. Further research would be required to adapt the technology for offshore application.

Benefits and Next Steps of this Project

This study advanced the Technology Readiness Level from Level 3 to Level 5 demonstrating potential applicability for use in offshore flare reduction.

Further research is needed to optimize this technology for practical offshore usage. To advance the technology options to optimize equipment sizing and mitigate power consumption need to be considered.

The collaboration and knowledge transfer between ExxonMobil, Imperial Oil and Memorial University of Newfoundland enriched the local innovation ecosystem.