



## Raman Spectroscopy for inline analysis of LNG Quality



### Objectives

Fluxys and Shell intend to test the performance of Raman technology for composition measurement of LNG. For this a Raman analyser is being installed on one of the Fluxys LNG terminals LNG discharge lines, with the already approved Fluxys LNG method using gas chromatography as reference. For a period of six months the results of both systems will be collected and handed over to a third party for evaluation.

To further optimize the quality and transparency of this test, a project is underway in which GERG members and interested parties can participate in providing input to the final evaluation, draw final conclusions and share recommendations to advance this new technology as well as to participate in an industry workshop to present the final results to the wider LNG community and regulators.

### Benefits

Direct liquid analysis provides an excellent opportunity to enhance the continuous LNG composition measurement and calculation of physical properties required to prepare a "Certificate of Quality".

Raman technology would allow for a simpler, sensor based composition measurement directly in the LNG providing the following benefits:

- Reduce the need to invest in complex vaporiser technology and experienced specialist maintenance staff to operate and maintain them.
- Improve reliability and reduce errors introduced by phase transition of LNG, this way improving reputation and reduce disputes on gas quality for the trading of LNG.
- Reduce operating costs for consumables, maintenance and calibration.

These benefits will contribute to enable deployment of composition measurement in small bunkering stations and accelerate the use of LNG as a commercial fuel.



