In order to save maintenance and running costs the client wished to modify their existing facility. A large tank that once fed surrounding plants was no longer needed and was to be replaced by a smaller one.

To comply with legislation, plant procedures and health and safety the client looked to ABB to ascertain whether the existing equipment could cope with the change in fuel composition.

Existing valves, pilots etc. would need to be tested to ensure that they would cope with the new denser fuel being passed through them. This was done using PEL software.

Solution
The PEL software suite from ABB is a highly effective solution for generating and managing process design data.

The following components were used to complete this project:

**PhysPack**
This element of PEL was used to generate the physical properties of the new gas, i.e. boiling points, freezing points and composition of the vapour, to determine what the conditions would be within the tank.

**Cvalve**
The control valve sizing software enabled users to enter conditions and flow rates to get the new control valve (cv) value. This was then compared with the existing cv value on the datasheet. The two values did not match so to ensure that the existing valve could safely cope with the new gas the equipment vendor was contacted. Ratings were compared to give an independent 3rd party verification of the information provided by the vendor.
PEW
Process Engineers Workbench. This tool was used to assess pressure drops across the pipeline. The new operating conditions were entered into the software to choose the suitable pipework sizes. The correct and validated new pipework sizes were passed onto the piping team.

Provue DB
Provue DB is a database management system which allowed datasheets to be created to enable the implementation of the new pipework and change of process on the site. The online version supported collaborative working by allowing the datasheets to be shared electronically with the onsite team.

Benefits
- Calculations were carried out efficiently, allowing engineers to be more productive
- Allowed plant modifications to be carried out to save maintenance and running costs
- 3rd party verification to give peace of mind
- Opportunities for human error in the complex calculations were reduced