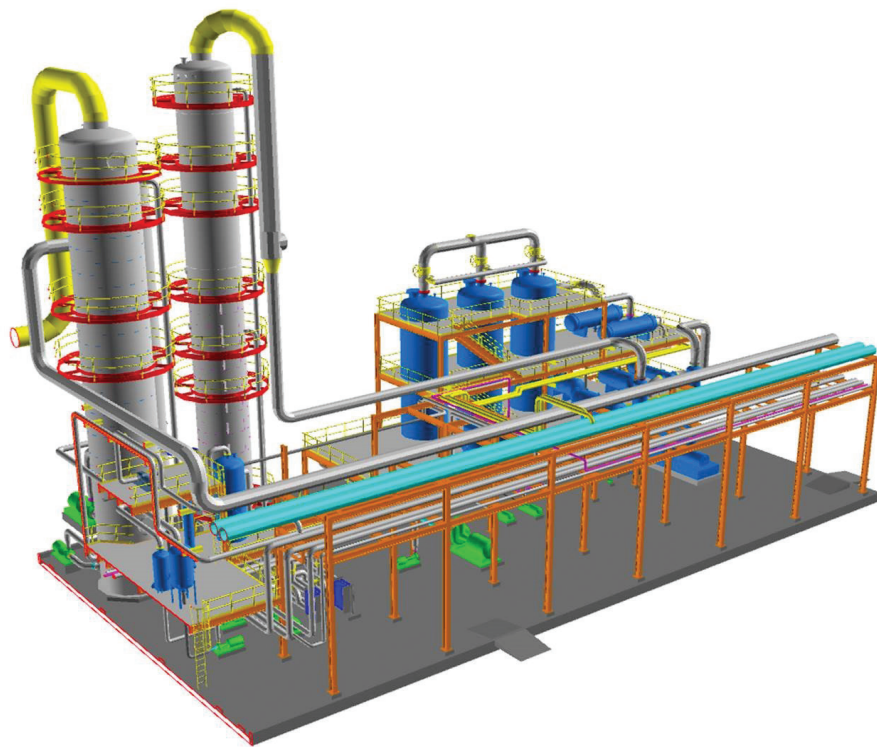


# LOW ENERGY DISTILLATION

Low Energy Distillation™ (LED) is FQT's distillation solution to significantly reduce energy usage and downtime. The patented LED technology can be used to upgrade both pressure and vacuum distillation systems. The system eliminates the need for direct inject steam in distillation by utilizing more efficient equipment setup reducing overall energy load.

An additional benefit of the LED system is full rate evaporator and reboiler CIP which reduces plant downtime. This increase in uptime helps facilities to achieve higher throughput, lowering OPEX per gallon. LED can reduce a plant's steam usage by as much as 40%, resulting in lower energy consumption than any traditional pressure or vacuum design. LED energy savings and lower OPEX help to drive a plant's CI score lower.

Lower temperature vacuum distillation reduces column fouling, thus reducing CIP frequency. The increased plant uptime allows operations teams to limit shutdown frequency to as little as annually.



- Lower CI
- Eliminate downtime for CIP
- Reduce steam usage by:
  - up to 40%
  - as low as ~8.6lbs/gal
- Industry leading OPEX for any distillation type
- Increase throughput
- Reduce water load
- New beer column, case by case
- New reboilers



# HIGH-PURITY ALCOHOL

Produce High-Purity Alcohol with energy-efficient distillation that is integrated with existing plant designs. Fluid Quip Technologies' patented low-energy distillation system allows flexibility for new and existing ethanol facilities to produce high-value alcohol products while reducing overall energy load. The FQT system produces High-Purity Alcohol including **Grain Neutral Spirits (GNS)** products that have some of the lowest impurity levels across the industry. The integrated system also requires significantly lower energy than competing distillation technologies. Diversify revenue while lowering CI with FQT's industry leading distillation systems.

## BOLT-ON PROVEN TECHNOLOGY AND EQUIPMENT

- Replacement/modification in-kind to all plant designs
- Compatible with vacuum or pressure distillation designs
- Design modification to existing beer column, rectification and stripping column; increases capacity up to 10-20%



## FULL PLANT BENEFITS

- Up to 40% lower energy than competing systems
- Potential reduced overall CI score
- Lowest product impurity levels
- No additional water required
- Reduced backset/water

## GNS ALCOHOL

- Ultra pure quality levels
- Beverage grade
- A greener alternative

Scan to learn more  
about GNS



*FQT has installed a High-Purity Alcohol system at the Three Rivers Energy Coshocton, Ohio biofuel plant. The installation enables Three Rivers Energy to produce high quality and high purity GNS alcohol for the global sanitizer and disinfectant markets.*