

Ethylene Recovery Unit (ERU)

UNRIVALED EXPERIENCE

Over 100 EO / EG Plants
delivered into the
Petrochemical Industry



Scientific Design Company, Inc.

Getting the Right Results

Optimal Plant Design

Scientific Design's (SD) vast experience gained through designing and starting up over 100 EO/EG plants makes us uniquely suited to offer EO/EG customers an optimized and fully integrated Ethylene Recovery Unit (ERU) for new or existing plants. Other manufacturers only maximize Ethylene recovery through the membrane which also sends Ethane back into the process. This excess recovery must then be purged in the Ethane purge and takes additional ethylene with it, increasing total ethylene losses. SD considers both the Ethane and Argon purges to arrive at the optimum ERU size so no excess Ethane is recycled back into the process. While other suppliers refer to recovery across their membrane (permeate/feed), SD recovery rate is the true amount of Ethylene saved in the process ((Ethylene Purged without ERU – Ethylene Purged with ERU)/ Ethylene Purged without ERU). When both the Ethane and Argon purges are considered the SD design consistently gives the maximum overall Ethylene recovery over competitors.

SD process knowledge and experience ensures correct design decisions and seamless integration into your process

Schedule Advantage

Scientific Design's ability to execute Basic Engineering and Detailed Design in parallel and to fabricate in a qualified shop under optimum working conditions enables fast-track delivery, quality assurance and compliance with specifications. SD Equipment is designed, fabricated and shop tested which reduces site labor constraints, installation time and reduces startup complications all which can impact project schedule.

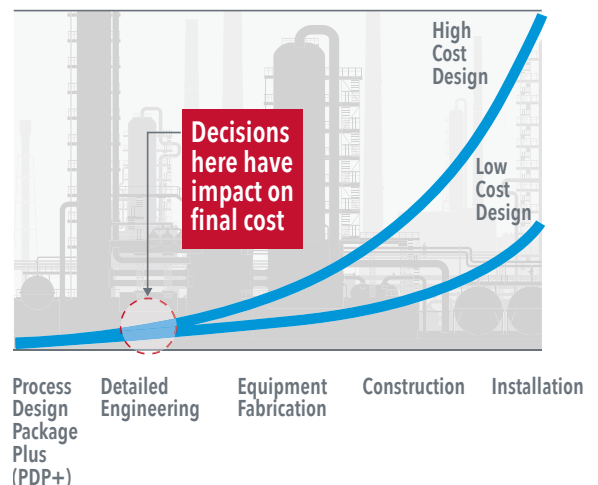
First Class Quality

Scientific Design's equipment projects follow a detailed Quality Plan which guarantees productivity, safety, and quality. SD uses rigorously qualified vendors to guarantee superior quality products, delivered on time to ensure seamless equipment assembly. All equipment and fabrication is inspected and quality checked by SD experts who are intimately familiar with both process and mechanical requirements of the design and operation of the product.

Capital Cost Savings

Scientific Design's approach to design and fabrication is a proven cost effective method which increases plant reliability. Working with SD from the Basic Engineering phase through commissioning ensures that you have a single entity that maintains focus on the project's most important aspects:

- Cost effective investment
- Timely project completion
- Built to licensor design specifications
- Meets process guarantees



Featured Equipment

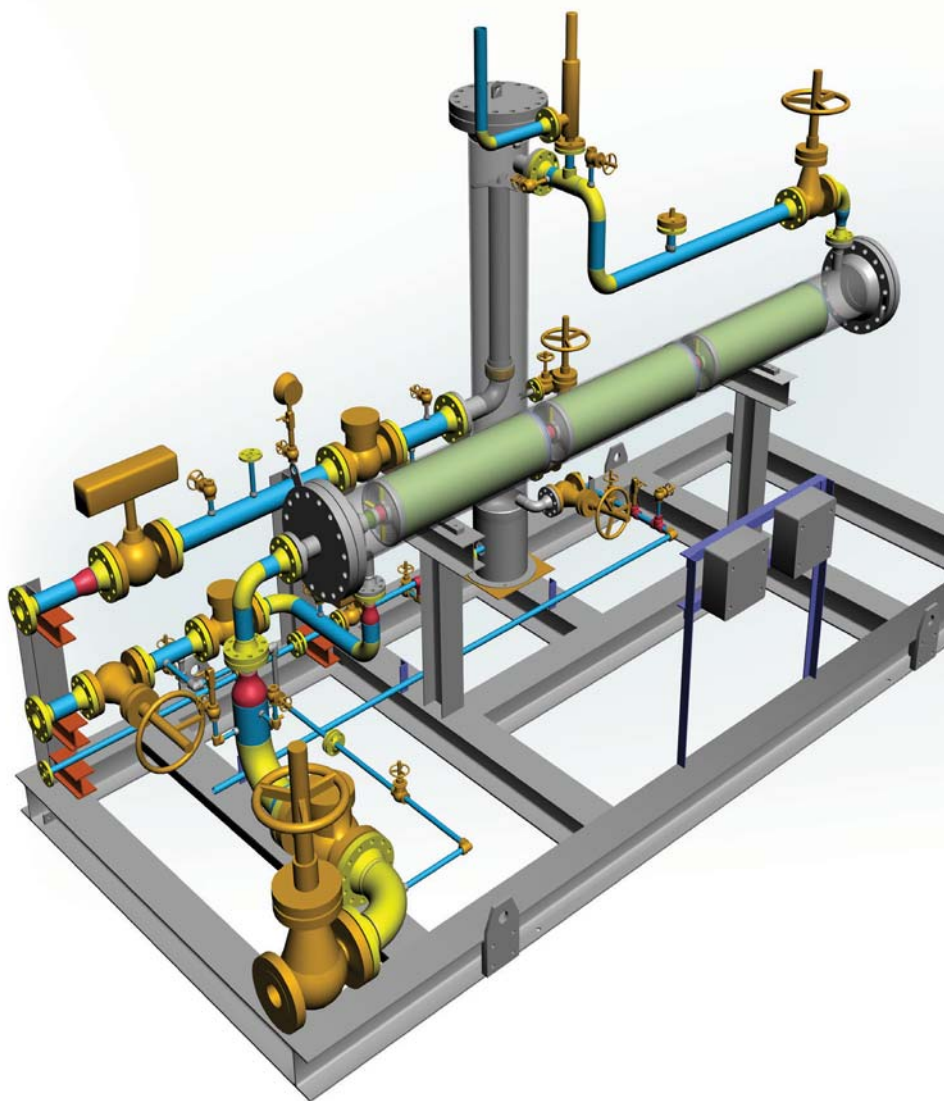
ERU Skid

The ERU Skid is designed to recover ethylene from the cycle gas argon purge. The ERU uses a hydrocarbon-selective membrane to recover Ethylene which can then be sent to an existing reclaim/ residual compressor to be recycled back into the process. From the ERU the Ethylene depleted Argon rich purge is sent to your waste gas handling facility.

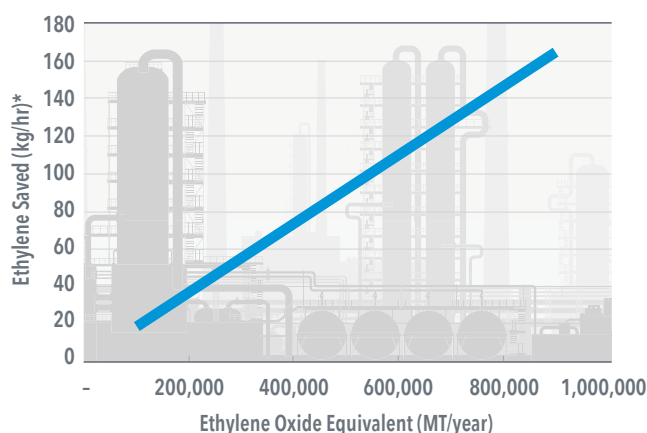
The SD ERU is designed to maximize Ethylene and Methane recovery while reducing operating costs. Instead of burning expensive ethylene for heat recovery, with the ERU in place, the ethylene can be recycled back into the process. Ethylene savings at common feedstock purities can be found in the figure below. The typical payback on an ERU is less than one year.

Proven Design

The SD ERU Skid is operating in multiple SD licensed plants. It is a demonstrated safe way to recover Ethylene from the Ethylene Oxide process gas purge. This application can be incorporated within your existing configuration which minimizes the need for additional power consumption or rotating equipment. It is designed to fit seamlessly into your process and is built under optimum conditions guaranteeing productivity, safety, and quality. The ERU is designed & fabricated entirely within a Skid that has its own steel structure for support. Access for maintenance and operability are not compromised in the ERU Skid layout and design. SD's ERU design incorporates lessons learned from the design, startup and operation of 100+ EO/EG plants. The Skid contains all the necessary piping, vessels, control valves, instrumentation & wiring and is shipped to your location by truck or barge transport. The ERU skid mounted design allows for a drop in place site installation.



EOE vs Ethylene Saved



*At typical Ethylene & Oxygen Feed Compositions

SD Equipment Solutions

Scientific Design is a world leader in the development and licensing of proprietary processes for the production of ethylene oxide and glycol (EO/EG), ethylene oxide derivatives, polyols and maleic anhydride. In addition to process licenses and catalysts, SD offers world class proprietary and nonproprietary equipment for use in its processes and similar processes. With over 350 patents, and significant investment into Research and Development, SD continues to innovate and provide solutions as a technology based company.



Scientific Design Company

Email us at: SDInfo@Scidesign.com

USA Headquarters Office

49 Industrial Avenue
Little Ferry, NJ
U.S.A. 07643-1922
Eric Pudimott
Phone: +(201) 641-0500

Middle East Office

Office 401, Building 3W
Dubai Airport Free Zone
P.O. Box 372016, Dubai, U.A.E.
Suresh Narayan
Phone: +(971) 4228-6313

China Office

1905 Westgate Tower
1038 West Nanjing Road
Shanghai 200041, China
Jane Chen
Phone: +86 (21) 6271-1010



www.scidesign.com

©Copyright 2018 Scientific Design Company, Inc. All Rights Reserved.

01-2018 SDCI-4

