



It's getting harder and harder for hydrocarbon industry companies, contractors, and equipment manufacturers to find talented and experienced process engineering personnel.











We've got plenty.

Process Support of Capital Projects

In recent years, the hydrocarbon industry has undergone major personnel changes. As a result, companies generally have lower manpower and average experience levels than they had ten years ago. This is true at owner companies, contractors, and equipment manufacturers.

This situation presents a major challenge to the refiners advancing major capital projects. Carmagen Engineering, Inc. (CEI), with its large pool of exceptionally experienced specialists, can provide expert process support to the clients in all phases of project development and implementation.

Key CEI project-related process follow-up activities include, but are not limited to, the following:

-  Preparation and/or review of the refinery inputs to process licensors
-  Technology selection assistance
-  Participation in the kick-off meeting with the licensor/engineering contractor
-  Basic Design Review in contractor's office (mid-point review)
-  Basic Design Review (final)
-  HAZOP review of the Basic Design
-  Preparation and/or review of the Operating Guides
-  Review of the Operating Manuals
-  Start-Up Assistance
-  Performance and/or Guarantee Test participation

Our Experience

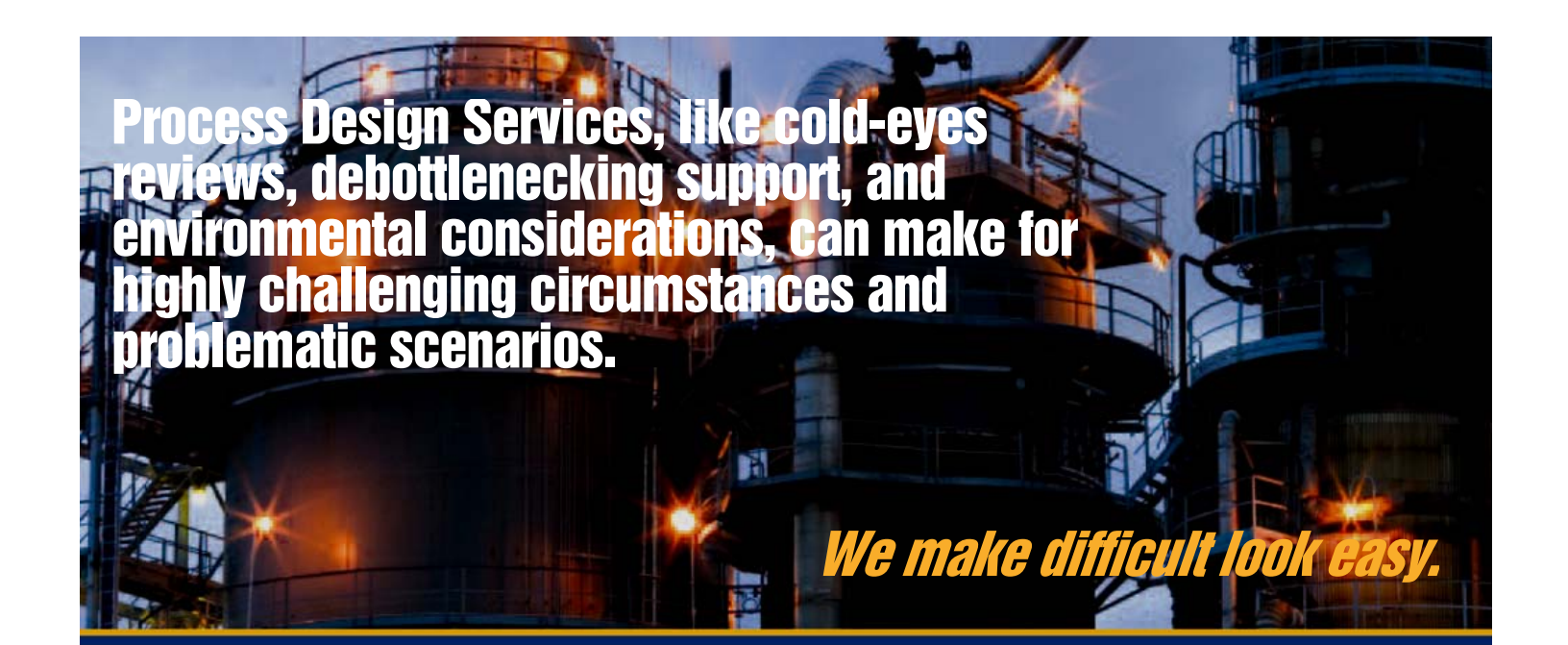
Carmagen Engineering has provided extensive process follow-up assistance for many capital projects worldwide. These include multiple projects in the USA and Europe.

All the right people in all the right places.™

CARMAGEN
Engineering, Inc.

4 West Main Street, Rockaway, NJ 07866
Telephone: (973) 627-4455 • Fax: (973) 627-3133
E-Mail: carmagen@carmagen.com

www.carmagen.com






















Process Design Services, like cold-eyes reviews, debottlenecking support, and environmental considerations, can make for highly challenging circumstances and problematic scenarios.

We make difficult look easy.

Carmagen Engineering, Inc's. (CEI) chemical engineering experts have all the process design skills necessary to tackle those difficult design tasks, unique system or high-value problems that may require more specialization and experience. Our staff is highly motivated, efficient, and focuses on end results with a client's ultimate viewpoint and objectives in mind.

Process Design Services offered to the refining, petrochemical, and chemical industries include:

 Feasibility and preliminary designs for technical option evaluation or budgetary assessment	 Technology screening and licensor evaluation
 Front end engineering design (FEED) studies	 Plant performance optimization and energy conservation studies
 Process design packages for new and revamped facilities	 Cold eyes reviews (CER) of third-party designs
 Process design development for novel or proprietary technology	 Cost reduction task force (CRTF) studies
 Pilot plant design and operation	 Plant operations/unit debottlenecking support and troubleshooting
 Process modeling, heat and material balances	 HAZOP and process safety support
 Hydraulics, fluidization, and multi-phase separations	 Operating guidelines, performance test procedures
 Safety, utility, and environmental considerations	 Mentoring and process design training
 Process equipment specifications	 Litigation support
	 Research and Development support

Carmagen has a wealth of process experts with an average of over 30 years experience in virtually all aspects of the process plant industries. Therefore, we can offer fit-for-purpose consultation that results in practical solutions, and gets the job done right the first time.

To find out more about what Carmagen can do for you, check out our website or contact Jerry Lacatena at jlacatena@carmagen.com.

All the right people in all the right places.SM

CARMAGEN
Engineering, Inc.

4 West Main Street, Rockaway, NJ 07866
Telephone: (973) 627-4455 • Fax: (973) 627-3133
E-Mail: carmagen@carmagen.com







www.carmagen.com

Alternative Energy & Green Technologies

We make difficult look easy.



Carmagen Engineering, Inc.'s (CEI) chemical, mechanical, and materials engineering experts have worked on alternative energy and renewable fuels investigations, technical studies, pilot plants, and actual plant design. Process development of "Green Technologies" requires technical skills, focus, environmental sensitivity, and more specialization and experience than is typically required for more conventional processes. Our staff, having an average experience of 30+ years, has worked in novel areas, such as:

-  Cellulose to ethanol
-  Recovery of liquid fuels from used tires
-  Biodiesel
-  CO₂ capture
-  Non-conventional processes (Synfuels, GTL, Fischer-Tropsch, shale, oil sands)
-  Clean coal & coal liquefaction

Process services offered to the refining, petrochemical, and chemical industries include:

-  Feasibility and preliminary designs for technical option evaluation or budgetary assessment
-  Process research & development for novel or proprietary technology
-  Hydraulics, fluidization, and multi-phase separations
-  Pilot plant design and operations support
-  Process modeling, heat and material balances
-  Process equipment specifications
-  Technology screening and licensor evaluation
-  Front end engineering design (FEED) studies
-  Process design packages on new and revamped facilities
-  Plant performance optimization and energy conservation studies
-  Cost reduction studies
-  Safety, utility, and environmental considerations
-  Operating guidelines, performance test procedures

Our staff is highly motivated, efficient, and works to achieve our client's objectives. CEI makes difficult look easy.

To find out more about what Carmagen can do for you, check out our website or contact Jerry Lacatena at jlacatena@carmagen.com.

All the right people in all the right places.SM

CARMAGEN
Engineering, Inc.

4 West Main Street, Rockaway, NJ 07866
Telephone: (973) 627-4455 • Fax: (973) 627-3133
E-Mail: carmagen@carmagen.com

www.carmagen.com