

ANNUAL REPORT 2014

ENERGY IN ACTION



EMPOWERING A CLEAN FUTURE

70+
YEARS OF
EXPERIENCE



300+
ACTIVE
PROJECTS



SERVING THE
\$550 BILLION
COMMERCIAL
FOODSERVICE INDUSTRY

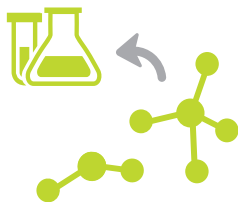



Creating **high-efficiency natural gas foodservice equipment**, testing appliance performance, providing site surveys and audits, and conducting educational seminars



70,000+
STUDENTS
TRAINED

New catalytic process efficiently produces **high-value chemicals** from CO₂ and methane



PRODUCTION POTENTIAL OF
\$1.4 BILLION 
OF ACETIC ACID AND ETHANOL FOR
EVERY MEGATON OF CO₂ CONVERTED

90%
CARBON EFFICIENCY



83%
COMBUSTION
EFFICIENCY

Delivering positive results on a new low-temperature process to **convert natural gas or methane-containing gas into methanol and hydrogen for liquid fuel** or chemicals production

HOMEOWNERS SAVING
40-60%
ON ANNUAL HEATING
AND COOLING
COSTS




Establishing **best practices for home energy retrofits** in California have improved comfort in existing homes

27



COUNTRIES ATTENDED
GTI CONFERENCES

10,000
GALLONS 
OF BIOGASOLINE
PRODUCED

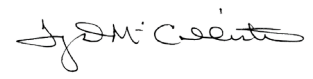
GTI's **integrated biorefinery** used the Topsoe Improved Gasoline Synthesis (TIGAS®) process to produce 90+ octane renewable gasoline for fleet testing



David C. Carroll,
President & CEO



Terry D. McCallister,
Chairman of the Board



While energy markets continue to change and evolve, one thing remains constant: the demand for energy continues to grow, and that energy needs to be affordable, produced responsibly, delivered safely, and used efficiently. Energy producers and consumers alike are focused on practicing good stewardship for our planet and helping to preserve its resources for future generations.

Gas Technology Institute (GTI) is developing new technologies, technical insight, and training to solve global energy challenges and empower a clean, sustainable future. We're hard at work every day developing a diverse portfolio of resources to ensure energy security and meet increasing power needs—with natural gas prominently positioned as a long-term element of the global energy portfolio.

GTI IS ENERGY IN ACTION

We're moving the needle in bringing value to our customers across the energy spectrum. GTI's technical skills and capabilities are recognized as our greatest strength, and each day we're overcoming hurdles to develop new technology and improved ways of producing, transporting, and using energy for a better tomorrow.

GTI is expanding our reach across the nation and around the globe. We're supplementing our core business with acquisitions in prime locations across the country, allowing us to provide additional services to our key clientele. Our robust conferences, training, and consulting engagements are building our reputation as an international thought leader, and we have the expertise and are well positioned to address global priorities.

With our fingers on the pulse of industry, we're taking on important challenges and responding to critical needs. We're guiding responsible production of unconventional gas; developing sensible alternatives to petroleum-based transportation fuels; reducing methane emissions from the natural gas distribution sector; maintaining a reliable delivery infrastructure; and meeting growing energy demands with high-efficiency technologies that use natural gas.

GTI is creating effective teams to deliver successful results. GTI is well-known for our relationships and our ability to bring together the right partners—public and private sectors with the necessary technical expertise, facilities, and funding to transition technologies into proven integrated processes and commercial products. Together, we move technology forward.

We're pushing the boundaries of innovation. Our expert engineers and scientists are passionately tackling the changing world of energy, leveraging their technical horsepower to advance new frontiers. GTI is delivering creative solutions to meet society's energy needs, protect the environment, drive economic development, and address the expansion of gas into new sectors. Our intellectual capital is making an impact on the market.

GTI is continuing an upward trend in delivering the very best products GTI can provide to our customers and creating solutions that enable their continued success. Our mission is to solve important energy challenges, turning raw technology into practical solutions that create exceptional value for our customers in the global marketplace—and we're on the uptick.

GTI closed out 2014 with high levels of customer satisfaction, solid financial health, steady performance, and safe execution. We established a significant backlog of new business contracts, important initiatives that provide a chance to showcase the compelling economic and environmental benefits of natural gas and illustrate how we can extract the most value from low-cost natural resources.

In 2015, we will continue to invest in strategic new offerings that drive our growth and expand our network of partnerships. We will build awareness on key energy issues, develop factual data to guide enlightened policy formation, and develop technologies that provide abundant energy to our fellow citizens.

MOVING THE NEEDLE

LNG



Gas Processing

Biofuels Production and Clean-up



Data and Integrity Management

BRINGING VALUE TO OUR CUSTOMERS

Unconventional Gas

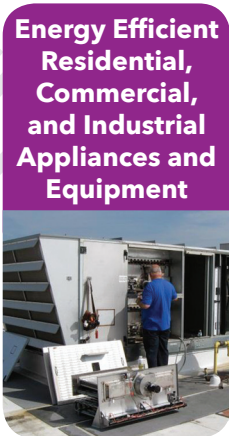
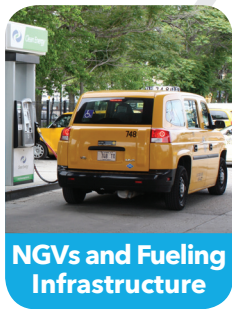


Energy Conversion



Pipeline Infrastructure Advancements

ES&E



Power Generation and Combined Heat and Power

FROM DOWNHOLE TO THE BURNER TIP

Natural Gas/Solar Thermal Hybrid Systems

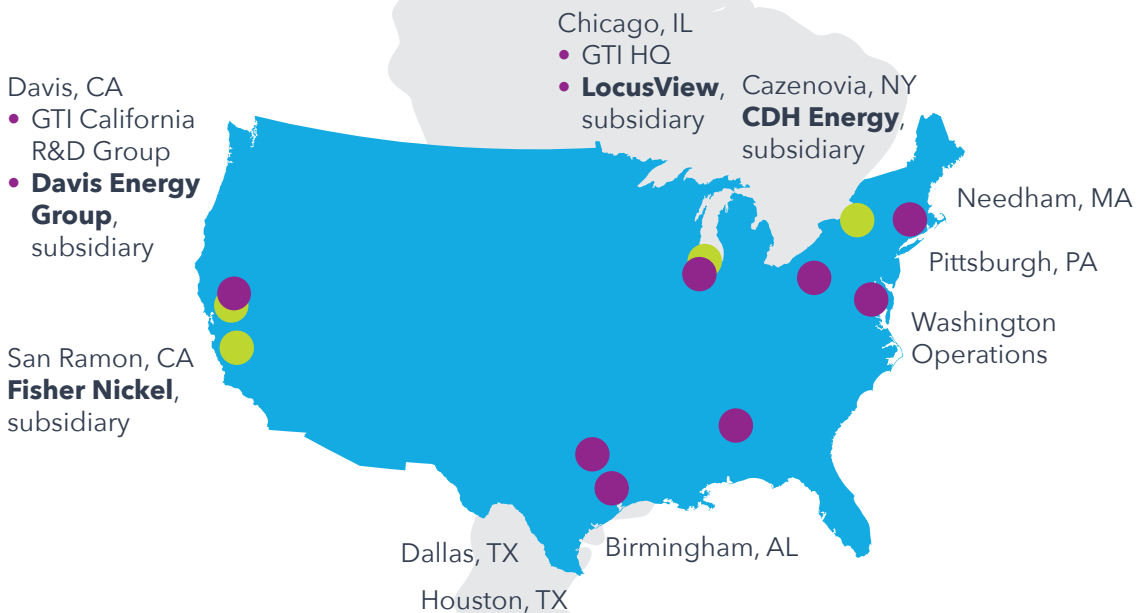


Training

EXPANDING OUR REACH



ACROSS THE NATION AND AROUND THE GLOBE



292
EMPLOYEES

12
U.S. OFFICES

4 NEW
SUBSIDIARIES



- Building our expertise in **commercial kitchen energy efficiency** and foodservice appliance performance testing with the acquisition of Fisher-Nickel
- Enhancing our value to customers with subsidiary CDH Energy's technical services in **commercial, industrial, and distributed generation** energy monitoring and analysis
- Expanding our capability to serve **residential and commercial markets** by acquiring California-based Davis Energy Group (DEG), a professional R&D and energy consulting firm, in early 2015
- Providing **technical knowledge and experience** to support our affiliate Enovation Partners as it helps U.S. and multinational clients develop high-impact strategies, evaluate new technologies, assess the regulatory landscape, and navigate the business environment of a rapidly changing market



- **Positioning natural gas as the fuel of the future** through partnering with the American Gas Association (AGA) in our International Gas Union (IGU) leadership role
- Using our proprietary energy models to help a Chinese energy research organization evaluate the emission reduction benefits of using **natural gas to displace coal and fuel oil** for industrial and commercial applications in a major metropolitan region
- Cooperating and collaborating with Korea Gas Corporation on energy **research and development, education and training, and information sharing**
- Consulting with world-class international companies to help them understand critical issues and trends in technology, regulations, and operations as they explore opportunities to participate in the U.S. energy market and **advance new products and technologies around the world**

THE
FUTURE
OF
NATURAL
GAS
IS
HERE

FINGERS ON THE PULSE

- Creating a portfolio of industrial technologies that include **productivity improvements**, waste-heat recovery, and low emissions
- Providing credible technical information to support source-to-site **energy efficiency standards**
- Performing groundbreaking **renewable fuels** work to make 'green' gasoline from woody biomass in an integrated biorefinery
- Analyzing business and technology issues to help companies achieve **strategic performance objectives**



1240+

STUDENTS TRAINED IN 2014

20 OPEN ENROLLMENT COURSES

29 ONSITE CLASSES

RGDP
ECOTT
RCGC
CIGC
CGTP

107 CERTIFIED STUDENTS

18 WEBINARS

- Our natural gas **field skills training** program offers strong background knowledge and promotes consistent practices for utility workers and contractors

- 
- Auditing plastic pipe suppliers using ISO 9000, industry standards, and company-specific requirements to **manage risk and promote quality processes**

- Executing QA/QC reviews, construction practices/audits, and due diligence efforts to **enhance utility operational efficiency and performance**

TWO NEW WORKSHOPS INTRODUCED

- Partnered with the Houston Advanced Research Center (HARC) to introduce the **CH₄ Connections** conference for exchanging perspectives on methane emissions and promoting collaborative dialogue
- **The Shale Exchange** workshop shared knowledge, ideas, and technologies to drive successful shale development and optimize local and global opportunities



CREATING EFFECTIVE TEAMS



ETP accelerates the market acceptance and introduction of new emerging technologies to feed into energy efficiency programs



20+ MEMBER UTILITIES



MANUFACTURERS



GOVERNMENT



- Working with Aerojet Rocketdyne and the U.S. Department of Energy (DOE) to produce synthesis gas and syngas from coal and natural gas for **liquid fuels, power, and chemicals**
- Advancing the Hydraulic Fracturing Test Site (HFTS) with the support of DOE, operators, and service companies to develop advanced technologies to minimize environmental impacts and maximize efficiency of **hydraulic fracturing**
- Partnering with major international oil and gas companies in a Joint Industry Program (JIP) to design and site a pilot plant for field demonstration of **natural gas sweetening** with hollow fiber contactors (HFCs) to remove CO₂ and H₂S, offering significant cost and footprint benefits
- **Automating real-time information sharing** between operators, emergency responders, and government agencies during disasters through a Gas Situational Awareness System (GSAS) supported by the Department of Homeland Security (DHS)



OTD develops, tests, and deploys new technologies related to integrity, safety, and reliability of gas infrastructure and operations

23 MEMBERS

60+ ACTIVE PROJECTS

serving 38 MILLION natural gas consumers in the U.S. and Canada

UTD develops, tests, and deploys energy-efficient end use technologies and processes and provides factual data for analysis and assessments



16 MEMBERS

70+ ACTIVE PROJECTS

serving 24 MILLION natural gas consumers in the U.S. and Canada

SAFE TRUSTED EFFECTIVE ENERGIZING COMMUNITIES



PUSHING THE BOUNDARIES

- Efficiently and cost-effectively **converting stranded or flared natural gas** into high-value liquid methanol which is easy to store and transport
- Building the patent family and providing ongoing commercialization support for IH²® technology that uses thermochemical processes to produce **liquid transportation fuels from renewable resources**
- Developing unique pre- and post-combustion carbon capture technologies for **power generation applications**
- Bringing **advanced geospatial technology** and services to the natural gas industry through subsidiary LocusView
- Licensing **glass manufacturing technology** with a lower upfront capital investment, lower energy consumption, smaller equipment size, and greater operating flexibility

GTI's Sustaining Membership Program (SMP) builds a strong technology base that stimulates future developments in natural gas delivery, energy utilization, environmental science, and renewable energy beyond the near-term horizon

30-YR
LEGACY OF NEW
+ INNOVATIVE
SOLUTIONS UP TO
"PROOF OF CONCEPT"




Solving important energy challenges, turning raw technology into practical solutions

750+
LICENSING
ARRANGEMENTS

500+
PRODUCTS



16 
NEW PATENTS
IN 2014

1,200+
PATENTS

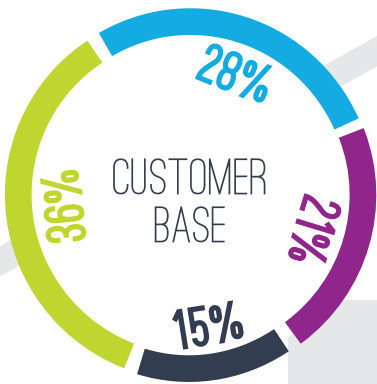
INNOVATION



- Integrating molecular genetics techniques to rapidly detect, monitor, quantify, and control the formation of **microbially influenced corrosion (MIC)** in pipes, production wells, and other equipment
GTI's quantitative polymerase chain reaction (qPCR) testing is the first MIC analytical service accredited by the American Association for Laboratory Accreditation (A2LA)
- Creating new technologies and approaches to measure **methane emissions**, improve the way they are quantified, and garner regulatory acceptance of the new methods with the Environmental Protection Agency (EPA)

POSITIVE TRENDING

IN 2014



UTILITIES
FEDERAL
INDUSTRY
STATE/LOCAL

NEW BUSINESS CONTRACTS

\$61.7 MILLION

\$11.1 MILLION
IN CONTRACTS UNDER NEGOTIATION



Making a difference in our local community

- U.S. Marine Corps "Toys for Tots" campaign
- United Way annual payroll deduction campaign
- Self-Help Closet & Pantry of Des Plaines food drive
- J.P. Morgan Corporate Challenge race

FINANCIALS (IN MILLIONS)

Project Revenue	\$ 53.5
Royalty/Other Revenue	\$ 3.0
Total Revenue	\$ 56.5
Current Assets	\$ 24.2
Current Liabilities	\$ 21.3
Net Current Assets	\$ 2.9
Total Assets	\$ 102.6
Total Liabilities	\$ 31.1
Net Assets-Unrestricted	\$ 71.5



CORE VALUE

SAFETY

1 lost-time accident case
0 medical recordable cases

Our OSHA recordable medical cases rate was better than the industry average

NET PROMOTER SCORE (NPS)
GTI + SUBSIDIARIES



GTI EXECUTIVE TEAM

- David C. Carroll
President and CEO
- Vann Bush
Managing Director,
Supply and
Conversion
- James F. Ingold
Vice President of
Finance, Treasurer,
and CFO
- Edward B. Johnston,
Vice President,
Research Operations
- Richard M. Kaelin
Executive Director,
Washington
Operations
- William E. Liss
Managing Director,
Delivery and
Utilization
- Jeremy M. Otahal
Director, Human
Resources
(Effective April 2015)
- Rodney C. Rinholm
Executive Director,
Business Develop-
ment and Education
- Ronald N. Snedic
Vice President,
Corporate
Development
- Peter N. Witty
General Counsel
and Secretary
(Effective April 2015)

For a complete list of business leaders, visit the GTI website

GTI BOARD OF DIRECTORS

- Carlos A. Cabrera
Executive Chairman,
Ivanhoe Energy Inc.
- David C. Carroll
President and CEO,
GTI (Ex Officio
Director)
- Arthur C. Corbin
President and CEO,
Municipal Gas
Authority of
Georgia
- Marc J. Florette
Chief Digital
Officer, GDF SUEZ
- John D. Hofmeister
Chief Executive,
Citizens for
Affordable Energy
- Ronald W. Jibson
Chairman,
President and
CEO, Questar
Corporation
- Alexander A. Karsner
Founder and CEO,
Manifest Energy, Inc.
- Terry D. McCallister
Chairman and
CEO, WGL
Holdings, Inc. and
Washington Gas
(Chair)
- Rebecca Ranich
Director, Deloitte
Consulting LLP
(Retired)
(Vice Chair)
- Thomas E. Skains
Chairman, President
and CEO, Piedmont
Natural Gas
- David F. Smith
Chairman, National
Fuel Gas Company
- John W.
Somershalder II
Chairman,
President and CEO,
AGL Resources
- Lori S. Traweck
Senior Vice
President and Chief
Operating Officer,
American Gas
Association

LEADER



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