



Gas Terminals of Tomorrow

Gas Engineering Solutions for Tomorrow

State-of-the-art solutions grounded in 40 years of experience: TGE Gas Engineering is a worldwide leader in the storage and green handling of liquefied gases. We provide a comprehensive range of products and services for the energy, liquefied natural gas and petrochemical industries. From feasibility studies and concepts to complete terminal construction, as well as maintenance and optimization. TGE is active worldwide and maintains a local presence in several strategic locations throughout Europe and Asia. Our goal is simple: To always offer the best solutions, and to provide our customers with the full benefit of our expertise.

Our Experience is your Advantage.

Since our founding in 1980, we have delivered millions of cubic meters' worth of storage facilities and various terminals for liquefied gases. We started out as a small, privately owned company in Bonn, Germany, and have continuously expanded to become a major EPC partner in the natural gas and petrochemical markets around the globe. Today, we are integrated in the CIMC Group as a worldwide contractor for international projects.

Innovation that Shapes the Future.

Constant innovation is a cornerstone of TGE's success. We are always working to optimize our gas engineering solutions with cutting-edge technology. As experts in a complex industry, we keep up with the changing demands and challenges of the market. We make a point of developing innovative solutions that go beyond meeting our customers' present needs – we provide the infrastructure of tomorrow to open new possibilities for the future.

Customized Solutions for the LNG, Petrochemical and Clean Energy Industry.

- **Terminals & Storages for LNG**
- **Terminals & Storages for Petrochemical Gases**
- **Innovations for Clean Energy Applications**
- **Comprehensive Service Portfolio**

Sustainable Solutions.

We are aware of the responsibility we carry for future generations and our planet. Environmental aspects are a major consideration in all of our activities – from office and construction site management to plant design and operation. For example, our plant designs place special emphasis on the low consumption of energy and resources, and we have developed specific review techniques to ensure environmentally friendly designs.

Safety First.

The health of our partners and employees – and of anyone potentially affected by our activities – is our priority. We have made health and safety one of our key objectives, and factor them into everything we do. When we design a plant, work safety during its commissioning and operation is a main focus. Extensive safety reviews are a standard and integral part of our design process.

What We can do for You

Whatever your gas handling, processing and storage needs may be: By partnering with TGE, you gain a strong and competent partner. We put our comprehensive expertise to work for you, providing you with exactly the innovative solutions and first-class technology you need – and ensuring you are optimally positioned on the market. We work closely with you, tailoring our products and services to fit your requirements. Our rigorous quality management and review processes ensure you always receive the highest possible quality, and we place great importance on sustainability, health and safety. In short: Everything we do is designed to bring sustainable added value to your business.

One-Stop-Solution.

TGE offers the benefit of a global team of experienced specialists with a wide range of expertise. Together, our experts provide a breadth and depth of knowledge that spans the entire industry – all in-house, in a single company. They combine an enormous amount of operational experience with an in-depth understanding of the market, and can ensure that your project is carried out perfectly in every detail. From start to finish. With us, you work with a single, established team throughout, eliminating the risk of miscommunication or delays because of poor coordination between multiple companies.

Ready for the Future.

In a highly complex and rapidly changing environment, TGE's wide-ranging expertise and deep insight into the market are essential factors for long-term success. We are optimally positioned to meet the challenges tomorrow will bring – and as our partner, so are you.

Quality without Compromise.

When it comes to quality, we don't believe in compromise. Providing our partners with top-quality products and services is a key element in our continued success. We rely on rigorous and effective quality management to ensure consistent performance on the highest level. For example, we have organized our management system in compliance with ISO 9001, ISO 14001, ISO 45001 and in particular ISO / TS 29001, a quality management standard specifically for product and service supply organizations in the petroleum, petrochemical and natural gas industries.



DIN EN ISO 9001:2015



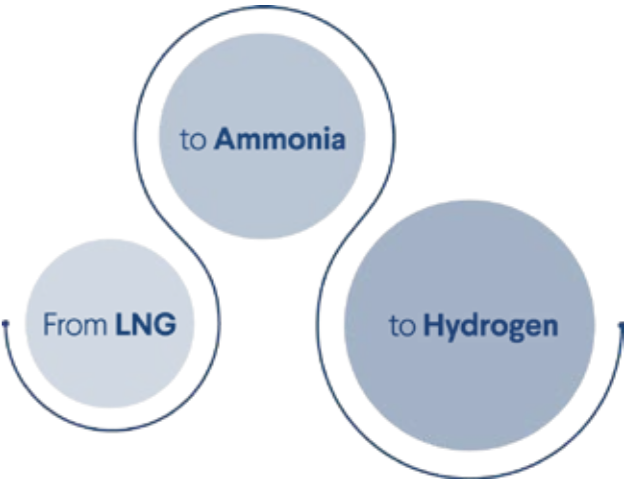
ISO/TS 29001:2010



ISO 45001:2018



DIN EN ISO 14001:2015



Save Your Time.

Time is an important factor in business. We ensure that your project is completed as quickly as possible – without compromising quality. Our time planning is accurate, and we are fast and reliable both when planning and preparing your project and when implementing it. An important factor in our speed is our excellent business network throughout the entire value chain, from local partners and suppliers to subcontractors. When speed is a must, TGE is the contractor of choice.

Local Expertise for Your Projects.

We maintain two main operating centers in Bonn (Germany) and Shanghai (China) to ensure we are in close proximity to our markets and partners. All of our centers are led by highly skilled local management teams, backed by TGE's strong global leadership and proven common processes and tools. We provide the same top-level design, engineering, construction and project management services in each main operating center, allowing us to optimally support your projects anywhere in the world.

Terminals & Storages for LNG

Terminals and Storage Facilities for Every Requirement

Terminals and storage facilities for liquefied gases are TGE's core business. As an EPC contractor, we construct terminals such as storage tanks and loading stations for ships and trucks, including elements like refrigeration and regasification or liquefaction units.

We install large-scale tanks for up to 200,000 m³ of liquefied gases, but also offer innovative tailor-made solutions for smaller plants. Our work is fast, top-quality and cost-efficient – even in remote locations.

LNG Tanks & Terminals

When it comes to the design, procurement and construction of cryogenic storage facilities for liquefied natural gases, our expertise is second to none. In all, we have designed and installed over 4 million m³ of LNG storage around the world. We have also created the capacity for over 13 million metric tonnes of LNG regasification per year.

- Tailor-made cryogenic storage facilities for every requirement
- Special focus on sustainability, clean energy, health and safety
- LNG import and export terminals from 30,000 to 200,000 m³ capacity
- Storage tank design from 5,000 to 260,000m³ capacity
- References for all design codes



LNG to Power Plants

In remote locations with no natural gas pipeline in the vicinity, TGE's LNG plant solutions secure the fuel supply for gas-fired power plants. Our expertise and a high level of standardization allow for quick and cost-effective construction. Our facilities can provide a high level of stand-alone operations, and we offer solutions tailored specifically to our customer's requirements.

- Stand-alone regas solution dedicated to adjacent gas power plant
- Key features: ship unloading, storage and regasification of LNG
- Optional features include LNG distribution facilities like truck / ISO container loading
- Synergies with adjacent power plant possible (e.g. heat integration)
- LNG throughput less than 0.5 MTPA for 20 to 300 MW power generation capacity



SSLNG TO POWER PLANTS



ssLNG Bunkering, Virtual LNG Pipelines and other Applications

Offshore carriers and cruise ships are increasingly fueled with LNG. TGE's customized solutions for LNG ship fueling meet every demand, and our facilities can be equipped with additional LNG distribution facilities such as truck or ISO container loading.

- Ship-fueling facilities in harbors within emission-controlled areas (ECAs)
- Key features: ship unloading, storage and barge loading
- Optional features include onshore LNG distribution facilities
- High level of stand-alone operations possible
- LNG throughput less than 0.5 MTPA



Terminals & Storages for Petrochemical Gases

Terminal and Storage Facilities for all kind of Petrochemical/Chemical Gases

Our cryogenic storage facilities for the import, export, buffer or distribution of liquefied gases ensure the highest level of process efficiency, energy integration and safety. We work with our customers to find the optimal solutions for their specific needs – whether they require facilities for LPG, Ethane, Ethylene, Propane, Propylene, Butadiene, Ammonia or other liquefied gases.



Innovations for Clean Energy Applications

Green Ammonia Storage, Multiproduct Storage Terminals, Plant Conversions and More

We offer innovative solutions for De-carbonization projects. This includes the design for Green Ammonia and Multiproduct Storage Terminals. In addition we update plants with state-of-the-

art technology, ensuring they comply with all regulations and standards while minimizing operational impact.



Green Ammonia Storage - the future energy carrier

- Ammonia infrastructure concepts
- Tank concepts for the storage of more than 100,000 m³



Multiproduct Storage Terminals

- Concepts for multiproduct storage terminals which are designed from the first project idea for the storage of different products



Plant Conversion and upgrade Engineering Services

- Product change (f.e. LNG to Ammonia)
- Capacity increase
- Debottlenecking
- Creation of new revenue streams



Gas Treatment & Processing

- Boil off Gas treatment Units
- LNG Recondenser Systems
- Vaporizer Packages
- Various other Gas Treatment Solutions

Comprehensive Service Portfolio

From Design and Engineering to Contracting, Project Management, Procurement, Construction and Commissioning



Engineering

TGE employs over 350 highly qualified, experienced engineers and specialists around the globe. They provide our partners with engineering services throughout all phases of a project, working in the fields of process design, HSE design, equipment, piping and structural, electrical and instrumentation and storage tanks – and, of course, project engineering.



Contracting

Whether you want to invest in new liquefied gas facilities or power plants to meet global demands or intend to refurbish aging infrastructure: TGE delivers solutions that meet your requirements. As an EPC contractor, we execute complex engineering, procurement and construction projects for companies and governments around the world, even in remote and challenging locations.



Procurement

From inquiries and orders to order processing, expediting, forwarding and shipping: TGE handles the entire process chain of project procurement, providing the best materials and services – on schedule and on budget. Our procurement strategy is globally oriented and based on experience, long-term relationships with key suppliers, and a deep understanding of global and local markets as well as local regulations and laws.



Project Management

As a globally active engineering contractor, we offer a wide range of products and services. The magnitude, complexity and required level of quality, precision and reliability of these projects are often extremely demanding. TGE's project management ensures that all processes run smoothly and the result fulfills the highest demands.



Construction & Commissioning

For TGE, construction begins with the unloading of materials on the site and ends after the no-load run tests of the installed equipment and systems with the commissioning of the plant. Our construction experts handle everything in between for you – management, coordination and supervision as well as subcontracting, fabrication, expediting and inspection.



Tank Design

TGE's EPC service for storage tanks utilizes state-of-the-art design tools and comprehensive expertise in the design of liquefied gas storage tanks. The tank concepts we provide include cryogenic storage tanks for import, export, buffer or distribution, earth-covered tanks (ECT) for pressurized liquefied gases, and horizontal bullet tanks and spheres for pressurized or semi-pressurized storage.

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