

Services

From time immemorial, industrial success has been largely measured by two watchwords – productivity and performance. In a chemical complex, where investments can run into billions, and carry with them the fortunes of all concerned, both are at the very top of the agenda. An agenda that starts with the reliable set-up of your plant, and is followed through with a reliable Services contract that ensures your plant is always in the best of health.

At thyssenkrupp, we fully appreciate your desire to optimise the returns on your investment. Accordingly, we constantly remind ourselves that our commitment to you as project partner does not end with the successful set-up and commissioning of your plant.

As custodians for your project, we also appreciate your need for year-round services and maintenance of your prized chemical facilities,

and hence offer you our 360° Lifecycle Services that will ensure your plant not only retains its technological edge despite the rigours of sustained operation, wear and tear, but is also operated optimally on a sustainable basis, using technical audits, criticality and feasibility studies and upgradations / retrofitting to meet changing operating / environment conditions.

Available throughout the lifetime of your asset, our 360° Lifecycle Services portfolio comes with our round-the-clock assurance and the process / technology and engineering expertise that characterises our mainstream work during the Concept to Commissioning and Operating phases of your plant.

Please turn to the next page for a look at our Services Portfolio.



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Revamps & outages

Over the course of time, demands change. In order to meet these changed demands, we offer you custom-tailored revamp solutions.

Analysis, Engineering and Manufacturing

- Plant status and environmental analysis and assessment
- Feasibility studies
- Basic, front-end and detail engineering
- Manufacturing of individual equipment

Revamps execution up to EPC

- Execution of complex revamp and outage projects
- Execution of EPC revamps projects
- Custom-tailored risk and profit sharing models

Plant improvements

- Technology upgrades
- Custom-tailored revamps and retrofitting solutions
- Debottlenecking through capacity extensions
- Efficiency enhancement through modernization and upgrades
- Emission reduction
- Safety and integrity upgrades
- Reliability improvement

Turnaround management

- Management of plant turnarounds



Field & workshop services

We offer you local assistance when it comes to overhauling spare and wear parts, or when maintenance and servicing is needed.

Technical inspections

- Process & System improvement studies
- Energy Audit for improvements
- Due diligence for performance improvements and modifications
- Health assessment for plant relocation
- Utilization of technology experts within thyssenkrupp's global network

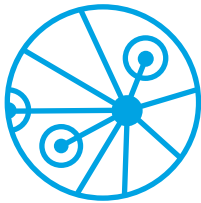
Operator & Maintenance Training Courses

- Customer training for all areas of thyssenkrupp portfolio
- Utilization of product experts within thyssenkrupp's global network

Inspection & Expediting services

Field services

- Safety Audits - HAZOP studies
- Failure analysis and Trouble shooting
- Decommissioning & inspection of cryogenic tanks



Parts & supply management

We are the experts when it comes to the supply of spare parts for your plant - over the entire lifetime, at the right time and with the right quality.

Proprietary equipment & Spares

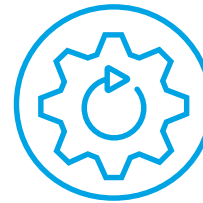
- Electrolyser cell elements
- Spares for electrolysis plants
- Spares for high pressure equipment

Spare Parts Supply

- All spare parts and components for your asset in OEM quality
- Always state of the art technology with guaranteed functionality
- Attractive frame contracts and supply agreements

Advanced Parts Solutions

- Engineering and manufacturing of individual spare parts
- Individual solutions in regards of quality and performance



Asset management

We offer you a holistic asset management approach in order to reduce the overall operating expenses of your plant.

Consulting

- Evaluation and assessment of effectiveness and efficiency
- Process mapping and gap analysis
- Derivation and supervision of improvement measures

Technical Guidance

- Implementation of improvement measures
- Technical improvement of existing machines and components
- Strategic analysis and future planning
- Improvement of processes and procedures


Operation & Maintenance Contracts

- Complete or partial take-over of maintenance and/or operations activities
- One-stop operation and maintenance solutions including (optional) parts and consumables
- Custom-tailored business models focusing on a win-win situation



Electrolysis Plants

Replacement of Cell Elements in Membrane Cell House of Caustic Soda plants, De-bottlenecking Studies, Process Optimization / Studies, Safety Audits , Upgrades



Cryogenic Storages & Tank Farms

Revamps, Safety Audits, System Reliability Assessment, De-Commissioning, Inspection / Repair & Re-Commissioning, Loading & Unloading Schemes of Cryogenic Storages and associated facilities



Nitrogenous & Phosphatic Fertiliser Complexes

Technology Upgradations, Revamps, Modernisations, Emission Abatement Facilities



Units in Refineries

Revamp of Refinery Units for Yield Improvement, Emission Norms, Capacity Augmentation



Petrochemical Complexes

Capacity Augmentations for Petrochemical & Organic Chemical Facilities



At thyssenkrupp:

Plant Assessment / Engineering study is done by a team of Specialists from our Technology, Process and Equipment expert areas. They study the plant data, review various documents and evaluate plant operating parameters with plant operators.

Our Studies are optimised to suit customer requirements. Typically our Studies cover :

- Assessment / Study of your plant performance against current industry trends and technological advancements
- Studies for elimination of production bottlenecks (de-bottlenecking)
- Feasibility Studies and Detailed Feasibility Reports (including Cost Estimates) for your project
- Measures and implementation plans for Modernisation, Capacity Enhancement projects
- Environmental analyses, recommendations for implementation of Emission reduction measures
- Analysis of the current plant performance against the targeted / desired performance in specified Key Result Areas (HSE, Productivity, Quality, Reliability, Availability, Life, and Direct & Indirect Costs)
- Identification of the under-performing areas of your plant and their likely impact, identification of the contributors for under-performance (Plant & Machinery, Asset Management Processes and Organization)
- Improvement measures

The team further draws upon our vast technological & engineering experience and capabilities to arrive at solutions required. The findings of the team are presented to the Customer along with recommendations in the form of detailed reports. The Report contains details of investigations and findings, and lists possible solutions to improve performance by eliminating or rectifying the issues which were contributing to the reduced performance.

Properly engineered & feasible solutions with complete financial calculations are arrived at and implemented by us in EPC or EPCM models.

For a wider perspective of our capabilities, please visit our group company website on the following link :

<https://www.thyssenkrupp-industrial-solutions.com/en/products-and-services/service/>

Interested? For more information, give us a call or drop us a mail.

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