

# Total Cost of Ownership Model

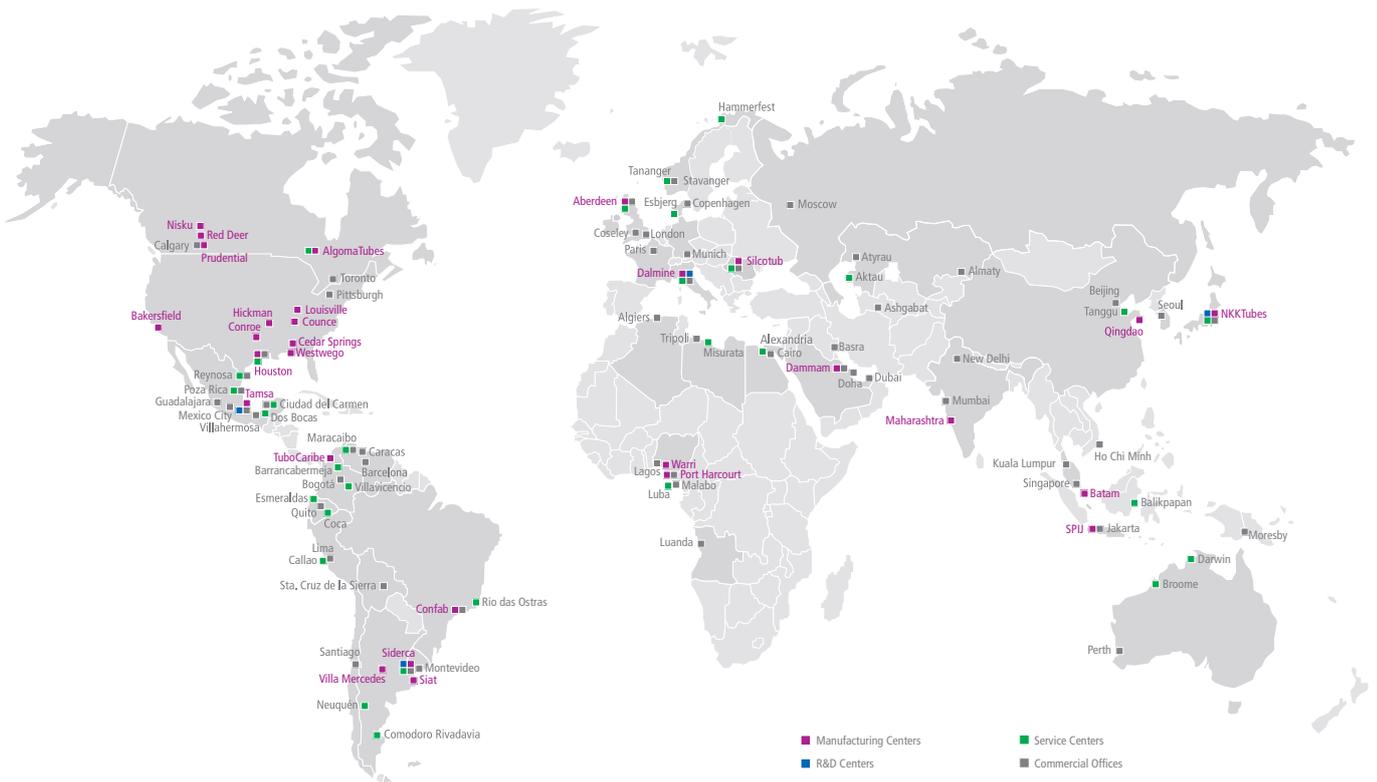




# Tenaris

Tenaris is the leading global manufacturer and supplier of tubular products and services used in the drilling, completion and production of oil and gas and a major supplier of tubular products and services used in process and power plants and in specialised industrial and automotive applications.

Through our integrated global network of manufacturing, R&D and service facilities, we are working with our customers to meet their needs for the timely supply of high performance products in increasingly complex operating environments.



# The Answer to Managing Project's Risk

Tenaris has more than 25 years' experience serving the downstream sector. We provide comprehensive material planning, supply chain management services and on-time delivery of quality products to enable our customers to respond efficiently to the demanding needs of major downstream projects, reducing risk and cost.

**The Challenges**  
 Today EPCs and oil&gas companies face challenges linked to last minute changes during project execution, the emergence of hidden/unforeseen costs and pipe surplus that can heavily impact a project's performance and profitability. When considering the final cost of a tubular supply, there is a number of

additional cost variables that make up to the initial pipe price:

- Variation of stock quantities
- Last minute changes in project isometrics, resulting in stock surplus
- Complex logistics
- Inspection costs
- Financial risks
- Pipe price variation
- Piping delays and failures

# An all-round solution: Tenaris Total Cost of Ownership Model - TCO

We provide our pipes with the knowledge that the final pipe price is not equal to its purchase price, but to the total cost of the supply including execution costs, unforeseen costs and pipe surplus during the project execution from the FEED phase up until the

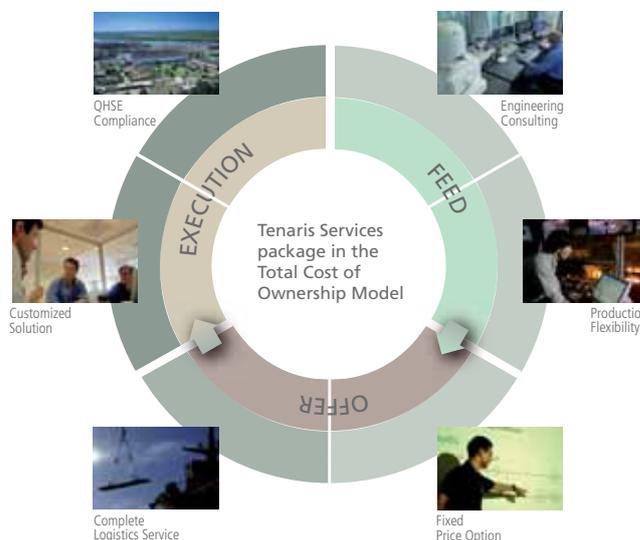
plant is operating. We have developed a unique model, converted into software, the Tenaris Total Cost of Ownership (TCO), which measures and controls all variables that can impact project performance and risk.

Thanks to its long-term experience, Tenaris can analyze a project's needs and can partner with EPCs at the offer stage to define product specifications and specific services. Our excellent execution ensures that the pipe price defined at the beginning of the project will be the same at the end of the project.

By teaming up with EPCs and end users at the FEED stage instead of entering later on at the offer phase, we can guarantee additional customer's savings by working in advance in specific areas such as:

- Product Specification
- Flexibility (especially in terms of MTOs and order modifications), while maintaining a competitive price
- Performance
- Direct and customized solution for each project, including local content
- Pipe surplus management

$$\text{Final Pipe Price} = \text{Initial Pipe Price} + \text{Execution Costs} + \text{Unforeseen Costs} + \text{Pipe Surplus}$$



# Entering at the Offer Stage

We can partner with an EPC to gain the project, defining all aspects related to product specification and services that can impact execution costs, unforeseen costs and pipe surplus.



## Execution costs

Despite steel pipes only representing 2 % of the total contract value, they are on the critical path since they can impact the operating cost by up to 10 percent, if they should they arrive late or have quality issues.

As EPC companies need a predictable supply of material in order to meet construction schedules, Tenaris offers sourcing solutions that guarantee the availability of products and provides price stability despite any market fluctuation.

### Product Quality and Engineering Consultancy

We produce seamless steel pipe in a wide range of dimensions from  $\frac{3}{4}$  inch to 28 inches and different steel grades able to meet extreme temperatures, pressures and corrosive environments. Products are designed and manufactured according to the highest industry standards, customer's specifications and comply with the Tenaris quality management system, ISO 9001:2000.

We provide technical assistance for material selection according to plant isometrics. We provide expertise and on-site resources from design concept - to ensure best product fit to optimize performance and efficiency - through to fabrication and construction needs.

### Fixed Price Option

During the proposal time, Tenaris secures price levels that the EPC can then use in its project bid, ensuring a reliable, accurate estimating process. In this way, Tenaris avoids the risk of price fluctuations away and guarantees the delivery of materials for the duration of the project.

### Reserved Mill Capacity and Production Flexibility

By working with EPC at the offer stage and thanks to our integrated manufacturing process, we have the flexibility to change dimensions and steel grade specifications up until the moment the product is produced. We can produce seamless pipes even in minimal quantities (such as 50 m) for gas processing projects, allowing customers to stay



close to their estimated budgets.

Tenaris works closely with the EPCs to fully understand project complexities and critical timelines in order to ensure fast delivery by scheduling materials production well in advance. By reviewing early project design information, Tenaris is able to generate rough estimates of the required material needs. These estimates are then used to reserve manufacturing capacity months in advance of the actual production, thereby ensuring a dependable and secure delivery timeline. Since only the mill's production capacity is reserved in advance, specific item details do not need to be defined until just weeks before the final production. This grants a level of flexibility to changes in engineering and construction that were previously unattainable directly from the manufacturer, and provides

a stable and secure cost, which is less than traditional sourcing.

#### Direct Mill Access & Integrated Supply Chain

Being the only mill with which EPCs can deal directly with, we bring project logistics coordination as close as possible to mill load planning, reducing stocks and steps in the supply chain, and furnishing on-time deliveries of the required mix of products. Less dependence on stocks directly reduces the common delays and expenditures associated with bulk piping. Tenaris can design the supply chain, assign dedicated project managers in order to provide services such as storage, loading and unloading, trucking, marking and colour coding, complete packages including accessories. We also provide post-sales assistance.

#### Customized Solutions for Each Project

By dealing directly with EPCs and end users, we can provide additional services such as:

#### Local service centers

We can establish inventories, distribution hubs or in-house stocks according to the project's specifications and urgent material needs. This service results in a surplus reduction and financial costs cutback in the customer's supply chain.

#### Local content

We constantly support our customers during the entire project life by setting up on-site value-added operations and assigning inspectors close to customer's sites.

#### Integrated information systems and best practices sharing

By sharing forecast information, defining monthly reports to exchange project information, HPI project outlook, market trends, worldwide project database, key projects reports and current backlog, we can support the decision making process and expedite the material planning definition process.

#### Customized training

Our corporate university, TenarisUniversity, is responsible for strategically integrating, aligning and disseminating knowledge and expertise across the company. The areas of knowledge developed have been successfully extended to external customers and suppliers, strategically strengthening bonds with the final aim of increasing project performance.





## Unforeseen cost

By working with pipe providers with limited experience, EPCs are taking higher risks such as:

- Pipe failures that can have a dramatic impact in terms of delays in plant commissioning and refinery cost, having to pay a penalty fee for each day of delay
- Limited flexibility for last minute changes in isometrics resulting on high cancellation fees and pipe surplus at the end of the project
- Not having the right material on time, delaying

the project schedule and increasing costs as they will keep paying for workers and equipment fees, even if they are inactive.

Tenaris is able to guarantee the performance of HPI projects meeting KPIs in terms of product design, quality, safety, time and budget requirements.

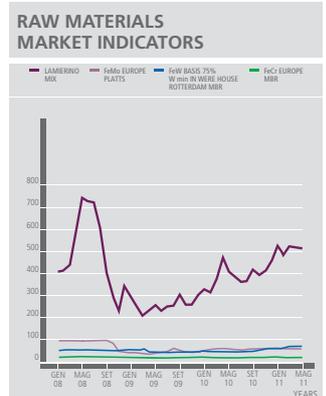
### Product Reliability

Tenaris's integrated manufacturing process guarantees total product quality. Quality control

procedures include statistical process controls, process and product audits and traceability systems. Tenaris provides the technical support of fully equipped laboratories to perform metallurgical and mechanical tests. During rolling, models are used to define the setup and check the rolling parameters. Hollows and mother pipes are measured in line by means of laser techniques in order to check the rolling results in real time and constantly monitor product quality.

### Tubular Supply Chain Performance

Performance is ensured throughout the entire supply chain. We can help in material definition for each portion of the hydrocarbon processing project, based on the construction timing and isometrics. We can guarantee mill space and high production flexibility to adjust the project schedule and in spite of market conditions due to direct contact with Tenaris mills.



Our dedicated team of project managers ensure supply chain coordination, including management of third parties based on complexity, location of the project and definition of local content.

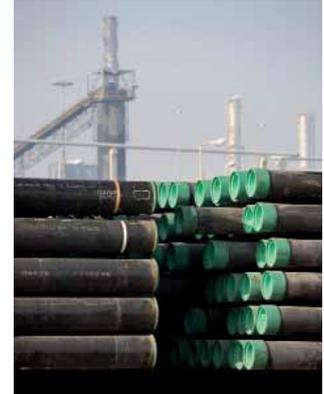
All these factors contribute to the EPCs' high risk mitigation prior to submission of the bid, thanks to the partnership with Tenaris.

### HSE Compliance

Our extensive track record of downstream projects performed globally demonstrate our ability to handle complexity in terms of material, logistics, HSE requirements. Our QHSE policy encompasses the entire supply chain and

allows Tenaris to eliminate the risks associated with the management of the project during its entire lifecycle.

Our OHSAS 18001 and ISO 14000 certifications show our commitment to the Health and Safety principles established by the World Steel Association, of which Tenaris is a member. We're partnering with our customer to ensure the project site is an injury-free and healthy place to work. Tenaris has also launched an Energy Saving Program to reduce energy consumption and CO<sub>2</sub> emissions as part of its drive to minimize the impact of the company's activities on the environment.

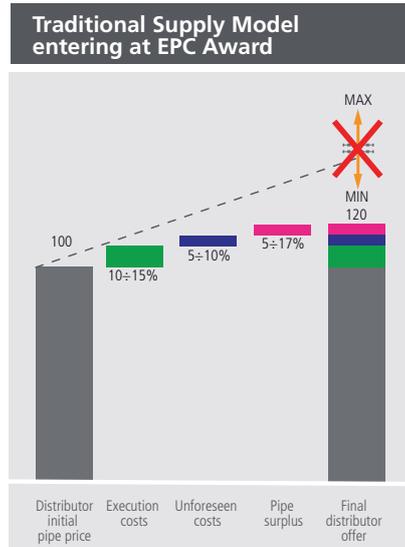


## Pipe Surplus

As a result of our precise material planning, production flexibility and experience in handling complex logistics, we can reduce the overall expenditure on bulk piping and target "0 pipe surplus" at the end of the project.



# Partnering at the Execution Stage



The traditional supply model cannot guarantee final cost and risk of a project. Final cost can be significantly higher than piping initial cost due to:

- rigidity in changes in material definition, while modifying project isometrics. This results in high stock quantities at the end of the project
- no support in material planning and lack of performance in on-time deliveries, causing penalty fees to be paid for each day of delay
- material cost increase due to raw materials' market fluctuation
- no liability

With the TCO model, Tenaris helps its customers measure and control all variables that can impact cost performance, reaching the final goal of zero pipes on the ground.

Our unique value proposition encompasses:

- material definition and planning flexibility
- fixed price options
- direct mill support
- precise tubular supply chain management
- customized solutions
- liability throughout the project and QHSE compliance

# Partnering at the Feed Stage



By partnering with EPCs and end users at the FEED stage, Tenaris can improve project performance, guaranteeing additional savings in each element that composes the final pipe price and maintains cost performance during project execution.

## Execution Costs

We can co-design every pipe according to the project's specifications to maximize performance and minimize material needs. We can reduce project surplus and we can customize the price structure based on raw material cost fluctuations, execution costs and market trend continuous support. We can customize a solution for a more competitive bid.

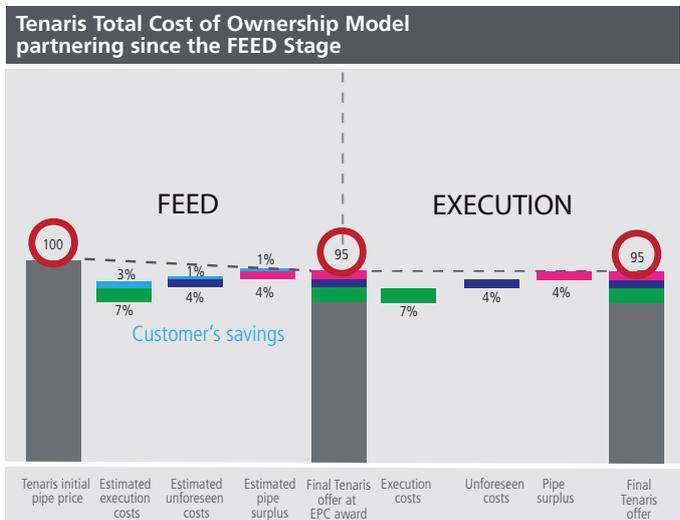
## Unforeseen Costs

Tenaris can leverage its experience and knowledge to provide customized solutions for each project need such as:

- identifying the most suitable site for pre-fabrication
- designing local services such as spooling, pipe management and specific project logistics
- defining HSE requirements to ensure reliability.

## Pipe Surplus

We guarantee additional savings by pre-defining options to eliminate pipe surplus at the end of the project and co-designing proposals for Maintenance and Repair Operations, MROs.



Tenaris's proposal starts by cutting costs & risk targeting to reduce EPC's final costs.

# TCO's Customer Benefits

## Guaranteed Materials Availability

Tenaris reserves mill production capacity in advance of the project creating a secure supply chain for project material, eliminating delays caused by the late arrival of critical path items.

## Increased Flexibility

By reserving the mill capacity in advance, the client's engineering and construction departments are given greater freedom to finalize the design, being able to make changes to the specific material requirements until much later without the risk of a surplus or shortage of material.

## No Stock Surplus

The need for spot market purchases are eliminated through planning and customers can buy the exact amount of material they need.

## Manufacturer Direct Sourcing

The customer becomes the actual owner of the process defining material need up to the last moment.

## Minimized Risk and Maximized Performance

By establishing secured pricing and guaranteed delivery conditions, Tenaris can greatly reduce the risks associated with project delays, ensuring materials arrive on time and on budget.



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