



# TESMEC TRENCHERS & SURFACE MINERS



# 1. Introduction





# Tesmec Group at a glance

## BU TRENCHERS & SURFACE MINERS



- Telecom & Fiber Optic networks, energy cables installation
- Pipelines & Utilities
- Bulk excavation, Quarries & Surface mining

## BU RAILWAY



- Catenary lines construction & Maintenance
- Diagnostic vehicles and systems
- Integrated platform for safe infrastructure

## BU ENERGY - STRINGING



- Solutions for power lines construction & maintenance
- Advanced methodologies for automating jobsite
- Zero emissions machines

## BU ENERGY - AUTOMATION



- Telecommunications solutions for HV Grids
- Grid Management: protection and metering solutions
- Advanced sensors for fault passage indication, protection and monitoring

**+70**

YEARS  
of experience

**+1000**

PEOPLE

**10**

MANUFACTURING  
PLANTS

**+135**

COUNTRIES  
choose Tesmec

**75%**

EXPORT



## 2. About the Trenchers & Surface Miners BU





# Tesmec Trenchers & Surface Miners Business Unit

Since 1984, Tesmec is a world leader in the **design, production and supply of high-power trenchers and surface miners** for a wide range of applications, from in-line excavations to civil works, from trenching and mechanical laying of networks to surface mining and bulk excavations.

Tesmec **integrated value proposition** meet customer needs focusing on innovation, integration, glocalization and sustainability by offering a complete ESG solution. Our team of experts is always at the customer's side, and our local after-sales and spare parts service work promptly to ensure the best support in machine and project management.

Thanks to an efficient organization, flexible fleet, and local branches all over the world, Tesmec is the ideal **partner for every project and investment**, representing the **choice of contractors** working for most of the major companies worldwide.

**Fiber optic & Telecom**



**Energy cables & Renewables**



**Pipelines & Utilities**



**Bulk excavation**



**Surface mining**





# Tesmec Strategy

**INNOVATION** Innovating the market for technologies dedicated to infrastructures for the transport of electricity, data and materials.

**INTEGRATION** Customers feel supported in defining and implementing the optimal solution that meets their needs.

**INTERACTION** Offering customized, efficient and sustainable integrated solutions.

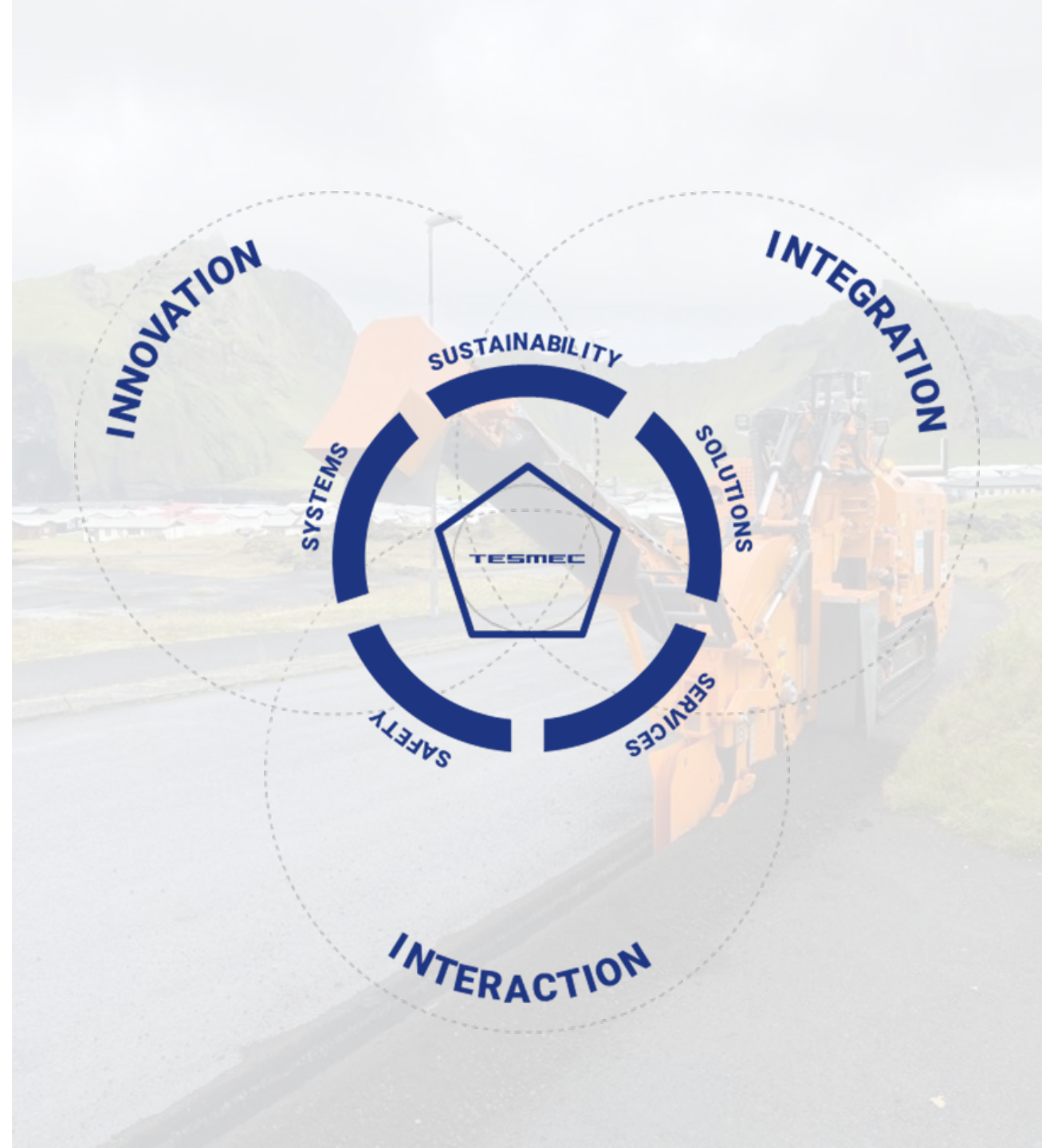
**SYSTEMS** The value of integrated technological solutions to answer specific needs in an innovative way.

**SOLUTIONS** The integration of advanced products and professional services to answer any kind of needs

**SUSTAINABILITY** The commitment in project and concrete actions for a sustainable development.

**SAFETY** Innovative solutions for environment and human health care, clean and fast solutions for no-injuries jobsites.

**SERVICES** The added value of our experienced staff to guarantee maximum performance and accompany the customer with unique expertise and know-how.





# A Glocal approach – The worldwide presence

**Tesmec S.p.A.**  
Grassobbio (Italy)

**Tesmec USA**  
Alvarado, TX ( USA)

**Saudi Tesmec**  
Riyadh (Saudi Arabia)

**Tesmec Peninsula**  
Doha (Qatar)

**Tesmec Energy**  
Algeri, Algeria

**Tesmec SA**  
Edenvale (South Africa)

**Tesmec Guinea**  
Conakry (République de Guinée)

**Groupe Marais**  
Durtal (France)

**Tesmec Australia**  
Mount Druitt, NSW (Australia)

**Marais Laying NZ**  
Wellington, New Zealand

**Tesmec Maroc**  
Casablanca (Morocco)

**Marais Cote D'Ivoire**  
Bietry (Cote D'Ivoire)

**Tesmec New Technology**  
Beijing (China)





# Trenchers & Surface Miners range

A wide range of products, a solution for any need and jobsite condition:

**Chainsaw Trenchers**



**Rocksaw Trenchers**



**Bucketwheel Trenchers**



**Rock Hawg  
Surface Miners**



**Dynamic Drive  
Surface Miners**



**Tesmec Trenchers** are high performance machines that excavates in-line trenches while advancing, suitable for the laying of water conduits, utilities, oil&gas pipelines and cables ducts (fiber optic projects or electric cable networks), in urban, suburban and rural areas. Chainsaw and Rocksaw trenchers guarantee reliability and high productivity even in tough condition, hard and abrasive rocks, while Bucket Wheel trencher are typically designed for very soft and muddy soils.

**Tesmec Surface miners** are high performance machines used for bulk rock & ore excavation across a broad spectrum of project applications, from heavy civil and road works, to tunnels and open pit mines. These machines allow excavating in a cost-effective way even strong and unfractured rock, completely substituting and avoiding the use of explosives and excavators with hydraulic rock breaker. Rock Hawg surface miners are designed for bulk excavation and heavy civil works, while Dynamic Drive surface miners are designed to optimize the surface mining of soft to medium hard materials.



**High productivity & Fast execution:** One trencher or surface miner can outperform several traditional machines

**Overall cost reduction & improved logistics:** Fewer machines and operators are required, leading to lower logistic costs and easier site management

**Excavated material quality:** Production of usable backfill material, smaller quantity of bedding & backfilling material is needed, savings in transport costs and waste material

**Bedding and backfilling:** Restoration of the ditch is easier and less expensive than excavators because a vertical wall trench requires less backfill material and the risk of surface collapse is lower

**Safer operations in the site:** Trenching and surface mining are safer excavation methods, avoiding the use of explosives, minimizing vibrations and shock and reducing the number of people in site

**Lower environmental impact:** Fewer machines needed in the jobsite means a reduction of CO2 emissions and fuel consumption

## Tesmec Trenchers and Surface Miners are the added value in your jobsite:

- Overall cost reduction
- Reduction of time for project completion
- Easier management of the jobsite



# An integrated value proposition

Tesmec provides an **integrated solution** assisting the customer with a **complete offer package**, with advanced and innovative products, experienced professionals and consultancy services to meet the most specific requirements.





# 3. Applications



## Solutions for the geological reconstruction and digitalization

- GPR survey for geological features, drone aerohotogrammetry and seismic refraction survey

## Solutions for the infrastructure digitalization

- Underground networks detection and mapping (GPR Multichannel, 3D LIDAR manhole reconstruction),
- 3D digital twin and urban design (3D laser scanner with high resolution 360° camera, Data sharing platform)

## The added value

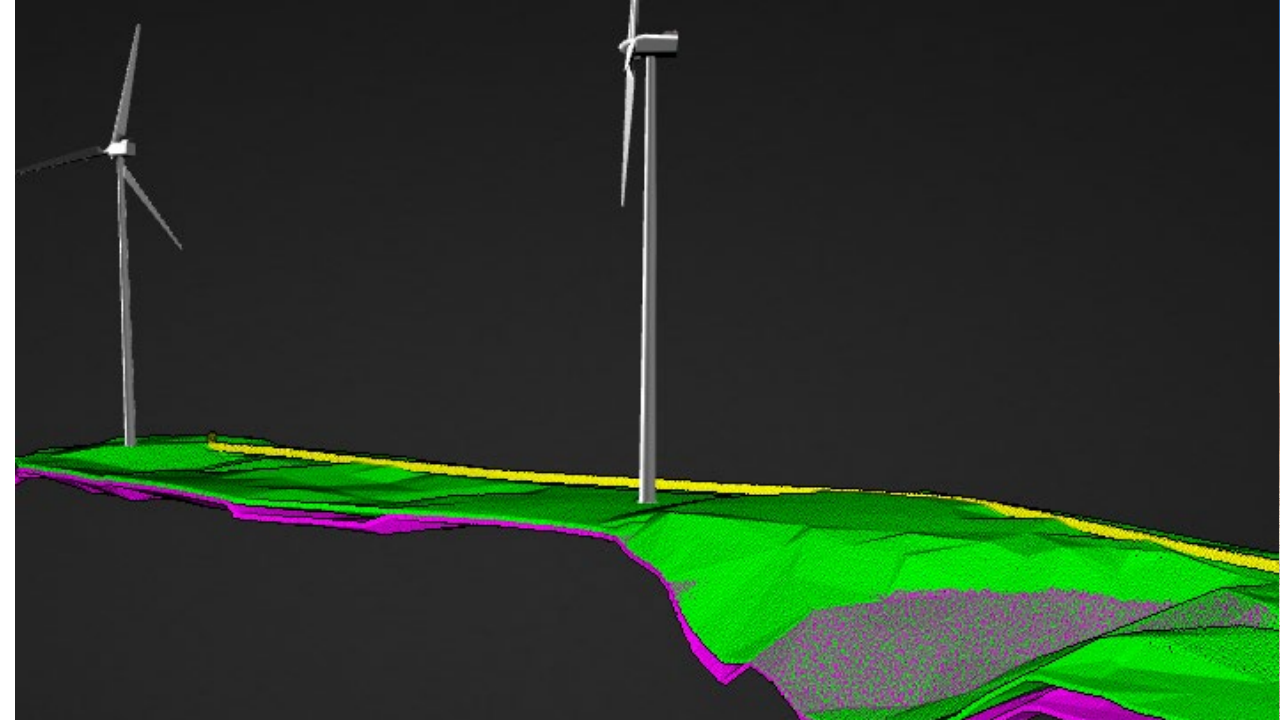
Complete preliminary geological information to correctly plan the jobsite

Digitalization of underground and above existing maps and infrastructure

Virtual 3D reconstruction of the area

Safer, cleaner and convenient network-laying solution

**Tesmec accompanies customers toward the digital transition through state-of-the-art and specially designed systems, offerings an integrated solution covering all phases of a project, from preliminary inspections to construction works and as built map**





## The working methodology

- Precise underground utilities detection and mapping with Explorer 3.0, 3D LIDAR and drone technologies
- Micro, mini and backbone trenching techniques
- Advanced vacuum technology
- Mechanical laying of cables
- Expertise in backfilling and road surface finishing
- Consultancy & Customer Service

## The added value

No damage to existing utilities and manufacts

Increase in work speed and reduction in project execution times

Low noise and reduced environmental and traffic impact

More efficient logistics

Overall cost reduction and profitability increase

**Tesmec trenchers are a clean and fast technology for in-line excavations for the installation of urban fiber optic networks (FTTx), suburban networks (city rings) and long-distance networks (backbone)**



## The working methodology

- Consultancy & Customer service
- Geology analysis and precise geological and infrastructures reconstruction and digitalization
- Reel preparation and transport, cables unwinding and wrapping
- Trench opening, cleaning and levelling
- Precise and safe installation of cables: Cables bedding, installation of PET/PVC cover, warning tap and backfilling
- Site management and supervision

## The added value

No damage to existing utilities and manufacts

Increase in work speed and reduction in project execution times

High reliability and quality of the laid network, also with different cross sections

Low noise, reduced environmental and traffic impact, more efficient logistics

Overall cost reduction and profitability increase

**Tesmec trenchers are a clean and fast technology for in-line excavations for the installation of underground energy cables, especially in renewable energy plants, such as wind and solar farms**





## The working methodology

- Consultancy & Customer Service
- Geology analysis and precise geological and infrastructures reconstruction and digitalization
- Trench opening, cleaning and levelling. Pilot trench, single cut or double cut solutions
- Excavated material loading
- Laurini padding and bedding machines
- Site management and supervision

## The added value

One single Tesmec Trencher outperform a fleet of up to 25 excavators

Excavated trench quality, better material size and easier bedding & backfilling

Increase in work speed and reduction in project execution times

More efficient logistics and easier site management

Overall cost reduction and profitability increase

**Tesmec trenchers are a clean and fast technology used to excavate trenches for the installation of oil and gas pipelines, canals, water and sewage utilities networks and drainage works**



## The working methodology

- Consultancy & Customer Service
- Preliminary geological and infrastructures reconstruction and digitalization
- Engineering and project study
- Bench, wall and face excavation
- Material crushing
- Dust control
- Site management

## The added value

One single Tesmec Trencher outperform a fleet of up to 15 excavators

Regular, smooth and high stable benches, vertical walls excavations

Proper sizing of excavated material, allowing easier disposal or secondary sell

Centimeter – precise excavation, thanks to GPS guidance

Increase in work speed and reduction in project execution times

More efficient logistics and easier site management

Overall cost reduction and profitability increase

**Tesmec Rock Hawks are a clean and fast technology designed to facilitate bulk excavations and heavy civil projects involving construction works, foundations, road construction and tunneling**





## The working methodology

- Preliminary geotechnical survey, engineering and project study
- Ore excavation and crushing
- State of the art technology integration
- Dust control
- Management and supervision of the site
- Training, management and supervision of the site
- After sales and spare parts service

## The added value

Safe technology: No drill & blast, no explosive handling

Selective mining: small and uniform excavated material, better quality

Increased output and productivity: high quality small and uniform mined material, eliminating the need for primary crushing

More efficient logistics and easier site management: eliminate several crushing steps, reducing machines and operators in site, lower costs

Low levels of noise, dust, vibrations, shocks and less water waste

**Tesmec Surface Miners are a clean and fast technology designed to facilitate mining projects by replacing the use of explosives and traditional methods, assuring minimum cost per ton and maximum productivity.**



# 4. Technology integration





# State of the art technologies

## TrenchTronic 5.0:

The automatic trenching and self diagnostic technology.

It is an electronic control system designed to improve the ease of use of the trencher and increase productivity by making it less dependent on operator skills.

## TrenchIntel:

The 3D-GPS automatic guidance system.

It is the satellite guidance system capable to automatically control machine steering, trajectory and trenching depth with extreme precision

## Re.M:

The remote monitoring and reporting technology.

It provides on-demand retrieval of operating, maintenance and troubleshooting information to help improving each machine's bottom-line performance.

## Smart tracker:

The as built data recorder.

SmartTracker automatically collects as-built data while the machine is trenching, avoiding survey stakeout and reducing time and costs

## TRC:

The trencher radio control system.

It enables the operator to control the machine remotely through a radio control, increasing the safety in site, the visibility on the trenching area and on the trenching tool





# 5. After sales & Customer service





# After sales & Customer service

## Consultancy and studies

- Expertise and Know-how
- Feasibility studies, technical advice and consultancies
- Geotechnical analysis

## Project management

- Services and solutions for all digging projects
- Work site control and experienced operators
- Spare parts management and specialized Tesmec team for mechanical assistance

## After sales and customer service

- Inspections, machine start-up and jobsite management
- Worldwide fleet remote monitoring, assistance, operation and repair
- Technological support and machine data monitoring and analysis to optimize utilization

## Spare parts service

- Worldwide reaching and support in defining jobsite spare parts assortment
- Mobile workshops and mobile warehouses
- Interparts portal for original Tesmec spare parts



\* SCAN TO ACCESS TESMEC AFTER SALES AND SPARE PARTS SERVICE

Consultancy and studies

Project management

After sales and customer service

Worldwide spare parts service

# 6. Case studies





Mexico, 2018, Tesmec 1675 Chainsaw, gas pipeline





Iceland, 2022, Tesmec 400MCT, Fiber optic project





New Zealand, 2022, Tesmec ST2, Wrapping Machine, Reel Carrier, Wind farm project





Saudi Arabia, Tesmec 1475EVO Rock Hawg , Bulk excavation project





UK, Tesmec 1150EVO Dynamic Drive with Grydale dust suppression system, Surface mining project





**TESMEC**  
*draw the way forward*