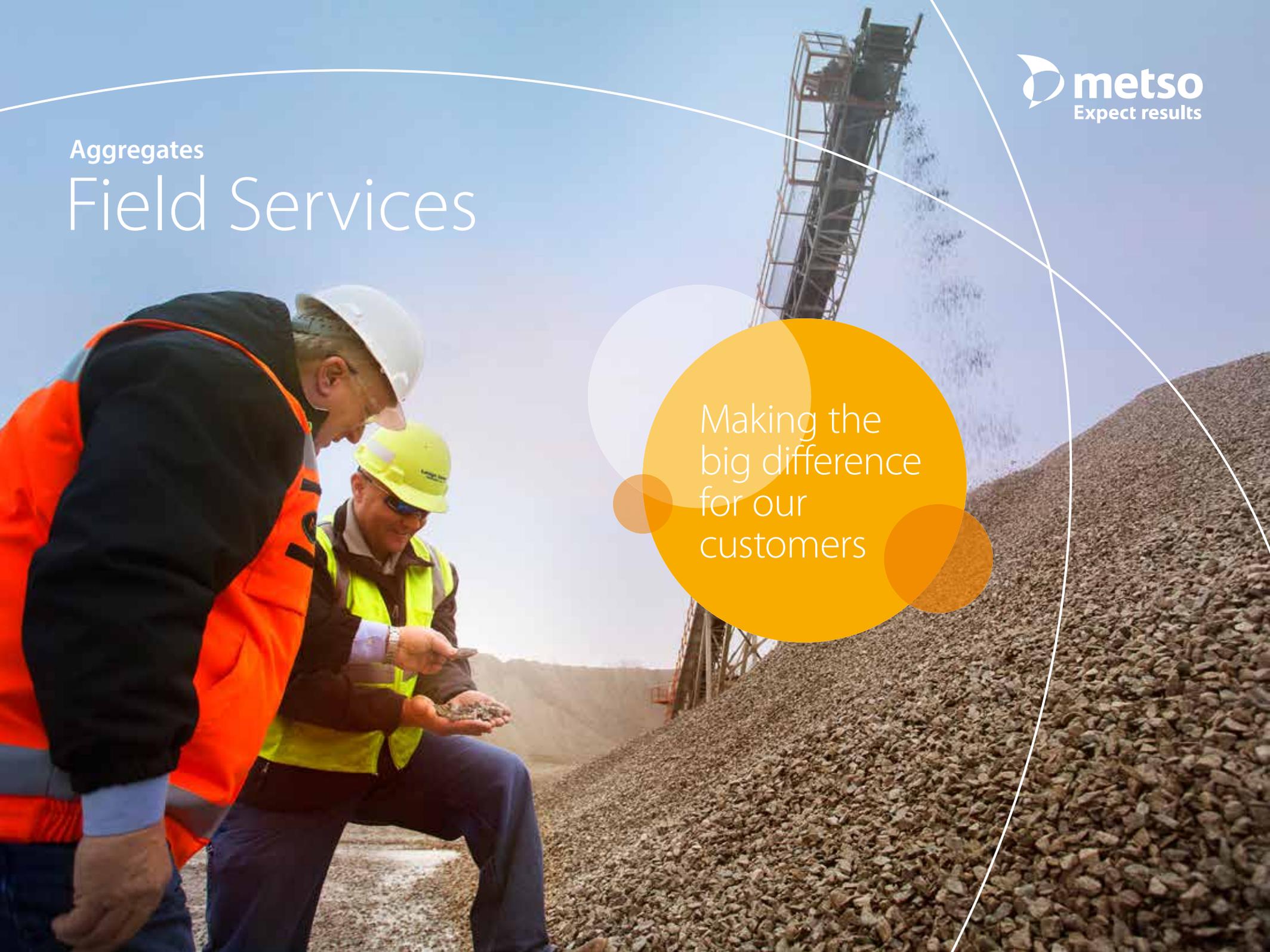


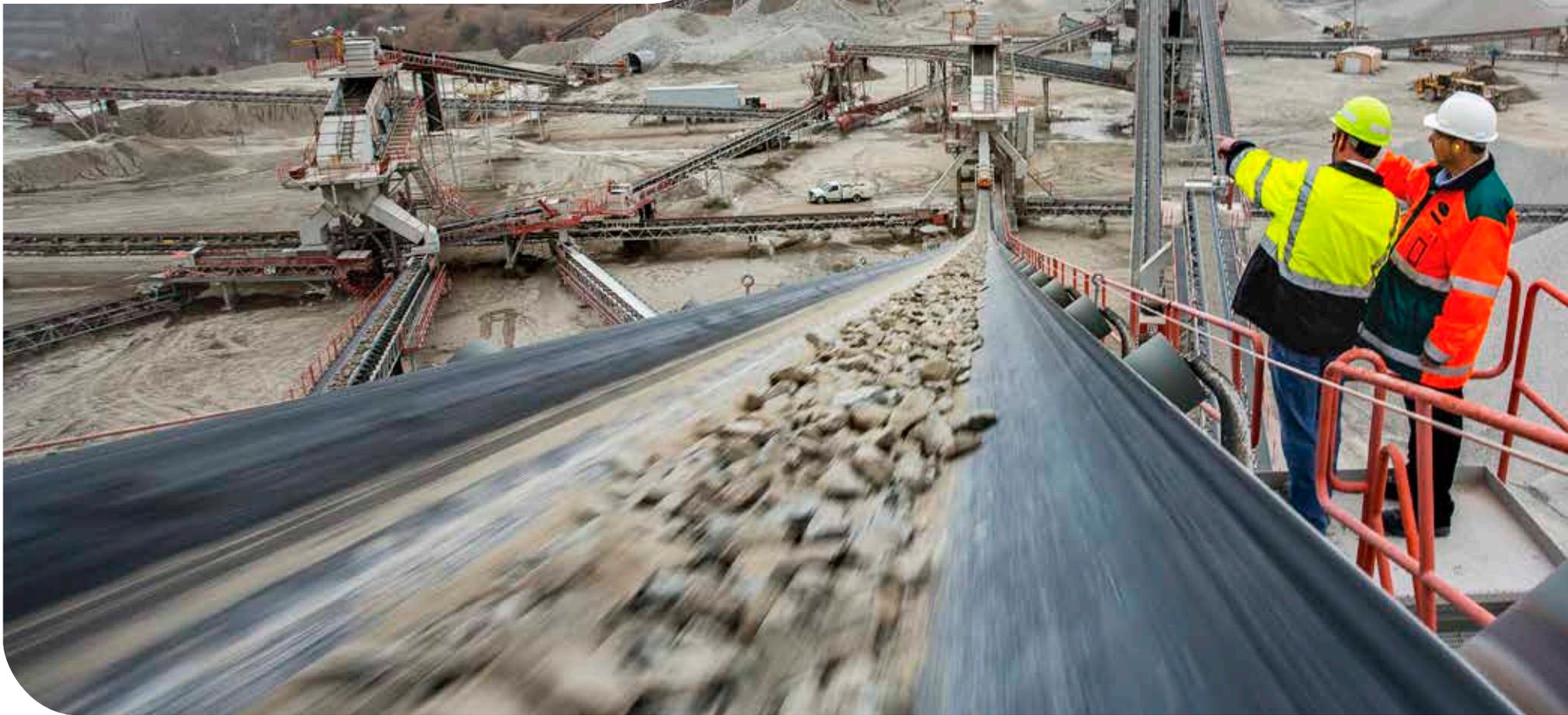
Aggregates

# Field Services



Making the  
big difference  
for our  
customers

We help our customers improve operational efficiency, reduce risks and increase profitability by utilizing our unique knowledge, experienced people and innovative solutions to build new ways of growing sustainably together.



# Metso strives to understand your aims and challenges

## Your aims

**Lowest sustainable cost** – You aim to achieve the lowest total cost of ownership over the lifetime of your operations.

**Production output and quality** – You aim to produce optimal quantities of aggregate that is of the highest quality in terms of size

fractions and shape. It is about having quality output when you need it.

**Resource efficiency** – You look to minimize resources to meet your production goals. Minimizing your energy consumption, while getting the most out of your equipment and staffing assets, is always a top priority.

**Reliability** – You expect equipment to be correctly maintained and repaired so that unexpected failures and downtime are minimized.

## Your challenges

**Maximized safety measures** – Safety must not be compromised. Accidents not only impact employees through direct injury, but they can also affect work morale and the community. Safety incidents disrupt workflow and can have long-term consequences such as increased regulation and insurance premiums.

**Experienced people** – Finding skilled personnel to do the job correctly. The wrong choices can compromise safety, quality and results.

**Quality repairs** – Maintenance and repairs should be carried out correctly and to a high standard. Poor quality repairs or refurbishment can increase costly downtime, maintenance costs and create safety risks.

**The right information** – Personnel require access to the right information and training. Efficient and effective service work requires timely access to equipment specifications, procedures and product engineering support.

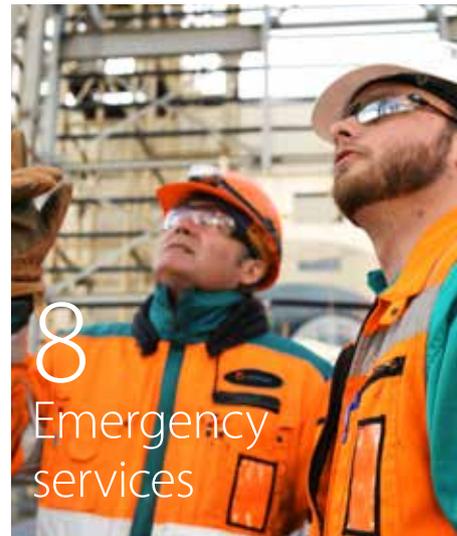
**Efficient management** – Streamlined management activities and reduced overhead. To be efficient requires excellent coordination, communication and preparation of resources, parts, tooling and technical information. Ineffective or insufficient management will increase costs and result in lost time and delays.

# Metso Field Services

Metso and our partners offer a comprehensive set of field services to help meet your maintenance, repair and refurbishment needs. Each service is fully customizable to your exact requirements. Our highly specialized services cover all Metso crushing, screening, conveying and bulk material handling equipment.

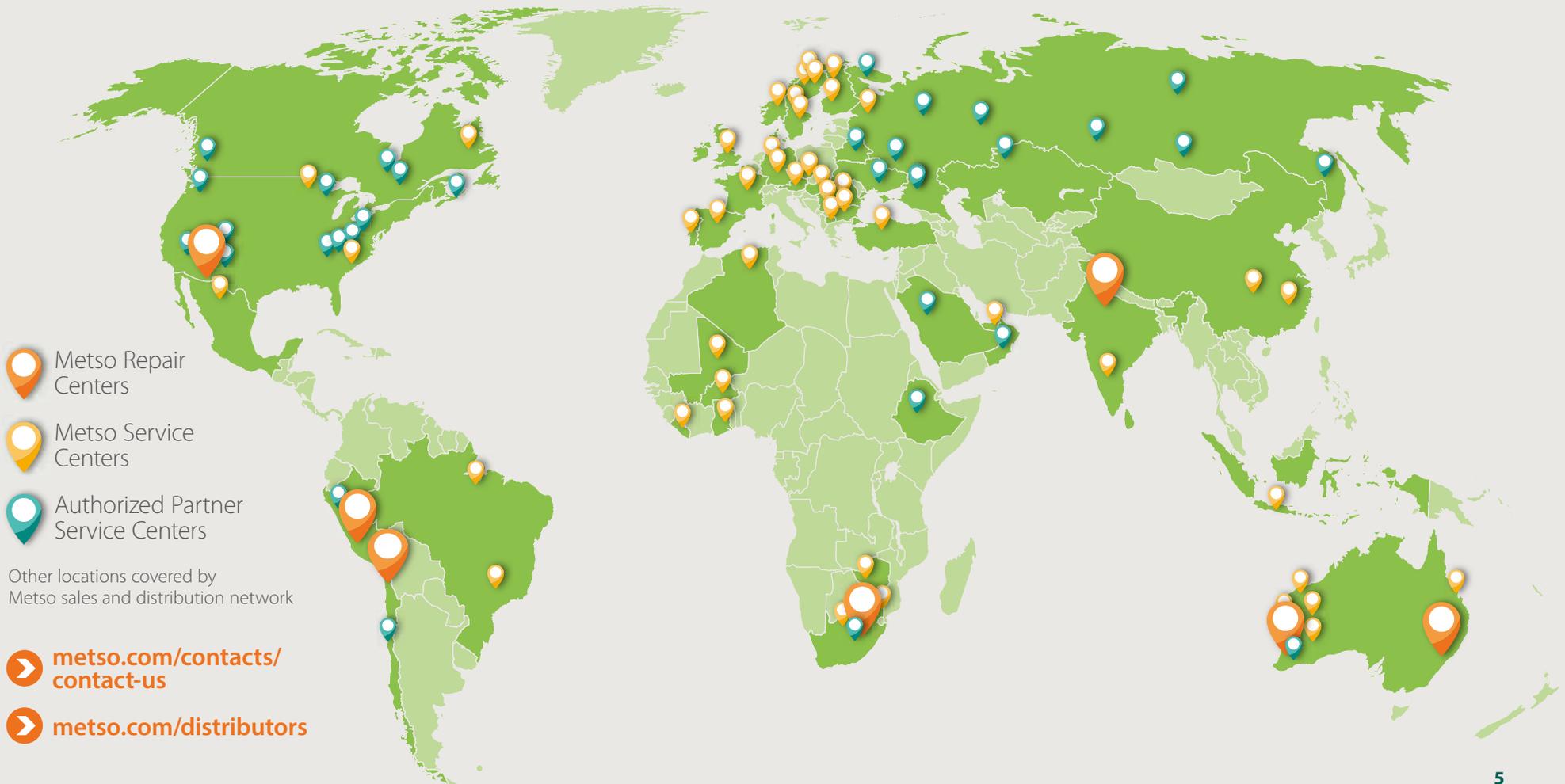
Learn more at:

➤ [metso.com/services/field-services-for-aggregates](https://metso.com/services/field-services-for-aggregates)



## Metso service footprint

Ensuring rapid global response time through our service centers and partners



# Diagnostic services

Diagnostic services help you plan your activities, better identify issues you may be having, as well as identify potential improvements. We can also propose recommendations for maintenance, inventory planning and process adjustments, leveraging our global team of aggregates experts.



### **Mechanical and electrical inspection**

We carry out thorough inspections of equipment to accurately determine the operating condition. These inspections typically look for potential hidden failures such as stress cracking and abnormal wear, leaks, excessive consumption, excessive vibrations, abnormal temperature and noise. We also carry out non-destructive testing of critical components. After the inspection, we provide a detailed report highlighting any issues found, the needed actions to be taken and maintenance recommendations.

### **Equipment audit**

Small adaptations and adjustments to equipment can have large results by dramatically improving process performance. With our equipment audit service, we review

your existing equipment configuration and make recommendations on how the equipment can be upgraded or modified in order to better your process goals and performance potential. You gain access to a team of Metso plant experts with process knowledge that helps you get the most out of your operations and stay ahead of the field.

### **Inventory optimization**

Your fleet has to have the right spares on hand when you need them. Through our expert examination of your site equipment and operations, Metso can provide inventory recommendations for critical parts. Just-in-time stock can also be held at our local Metso facilities to ensure you do not have unexpected delays in waiting for important spares.

### **Shutdown planning and support**

Metso can assist in the planning and execution of shutdowns to reduce downtime and can also offer on-site supervision and technical support, helping to ensure fast and safe shutdowns. We can also audit your current shutdown practices in order to provide improvement recommendations for wear part change-outs or major maintenance events.

Discover more from the following link:

 [metso.com/aggregates/diagnosticservices](https://metso.com/aggregates/diagnosticservices)



Expert diagnostic services help you eliminate unforeseen failures and improve planning

# Emergency services

When an unexpected failure occurs, Metso and our partners can help you restore production quickly. We identify the root cause, fix the problem and restore production as fast as possible. We will also identify long-term solutions to prevent issues from reoccurring.



### **On demand mechanical services**

When you have an issue or a mechanical problem, it is important that it is resolved quickly and production is restored as soon as possible. Our teams are supported by a global service network, extensive technical library and knowledge centers to ensure our engineers have the know-how and tools they need to solve your problem quickly and efficiently.

### **Root cause failure analysis (RCA)**

If a failure occurs, it is likely a symptom of a deeper underlying problem. Our experts will assist you in investigating the issue and pinpoint the root cause. Metso engineers' detailed technical knowledge, operational data and vast experience gained from similar cases at hundreds of quarries and job sites worldwide, result in thorough and accurate analysis.

Discover more from the following link:

 [metso.com/aggregates/emergencyservices](https://metso.com/aggregates/emergencyservices)



Getting you up  
and running  
faster with 1,500  
field service staff  
on call

# Installation and commissioning

No one understands our machines quite like our dedicated personnel. Whatever the product, location or application, Metso's experienced and highly-trained specialists will handle the installation with professionalism, adeptness and in accordance with local safety requirements.



### **Project management**

Eliminate the challenge of coordinating multiple on-site teams when installing new equipment. Whether it involves mobile crushers or semi-static plants, Metso project managers can handle the installation and commissioning of equipment from start to finish. From the early project planning stage, coordinating needed tools and manpower, executing the project on-site to conducting follow up meetings with your staff, our team manages each step of the process to ensure that installations are on time and under budget. Project meetings throughout the process guarantee that everyone is on the same page in terms of safety, costs and installation times.

### **System configuration**

All newly installed equipment is run through rigorous on-site testing to ensure that system equipment hardware and software is working as

it should. Predetermined operation sequences are tested and all on-site adjustments are configured to ensure your equipment is ready for your most demanding applications.

### **Performance verification and documentation**

Your new equipment is now installed and fully commissioned, but is it running at its optimal levels over time? Metso experts can also provide performance verification backed up by comprehensive documentation to make sure your new equipment is delivering maximum performance, based on your site specific conditions. Documenting equipment's performance over time allows you to spot performance trends and make adjustments when needed. With Metso you do not just get technicians, you also gain access to a team of skilled experts who understand how our equipment interacts with your process.

### **Client training**

Once equipment is installed and running, we remain available for you. Metso is able to deliver employee training programs based on expert knowledge of crushing equipment and maintenance. Training programs offered include online e-training, hands-on modules, specialized courses on crushing and screening equipment, along with safety and maintenance training in accordance with global best practices.

Discover more from the following the link:

 [metso.com/aggregates/  
installationcommissioning](https://metso.com/aggregates/installationcommissioning)



Metso's top quality equipment and knowledgeable service teams make the big difference

# Repairs and refurbishments

As crushing and screening equipment ages over time, production efficiency as well as reliability can decline. Metso provides a full set of services that can repair and refurbish equipment so that it is returned to as new, or latest design condition. If required we can manage the complete cycle of removal, repair, refurbishment and installation on a 'turnkey' basis.



### Machine repair/ refurbishment

Our committed service teams are well-equipped with experience, thorough knowledge of specifications and the correct tools. This ensures that you get the highest quality repairs and refurbishments safeguarding your devices and maximizing the lifetime of equipment and components.

### Turnkey refurbishment and rebuild

Refurbishment and rebuilds can be complex and time-consuming projects, where even a small mistake can lead to significant delays in returning equipment to full production. Metso will make your life simpler and reduce project

risks. With our comprehensive service offerings, Metso can take care of all aspects of the refurbishment and rebuild process from project management to planning and execution, including parts supply and skilled labor for the on-site teams.

### On demand mechanical services

Long equipment life, good performance and safe operation depend on an extensive understanding of equipment and maintenance procedures. Our on-site crews have expert experience, follow the manufacturer's defined maintenance and repair procedures, and have access to equipment specialists around the

world. With this in mind, you can be confident that diagnostic work, mechanical repair work, adjustments and the installation of components have been done correctly and efficiently.

### Engineered upgrades

Metso can help identify upgrade options for machines and control systems. We can assist with the planning stage and also through the implementation and execution of the complete project. With access to OEM drawings and specifications, as well as our team of expert design engineers, you can be sure that the upgrades will be carried out to the highest standards.

### Refurbishment process main steps:



Discover more from the following the link:

 [metso.com/aggregates/repairsrefurbishments](https://metso.com/aggregates/repairsrefurbishments)

# Spares, Wears and Life Cycle Services

## Ensured availability and performance

### Shutdown parts

#### Spare parts

Genuine Metso parts ensure that you get the most out of your existing equipment and help safeguard plant or site health and safety. Our expert knowledge of specifications, materials and manufacturing means you can be sure that the spare parts are made for the equipment and will live up to the tasks. Our spare parts, paired with our field services, return equipment to optimal operating condition.

More information is available at:

 [metso.com/aggregates/spareparts](https://metso.com/aggregates/spareparts)

#### Wear parts

Metso wear parts can help you reduce planned downtime and boost production efficiency. Our equipment knowledge, process expertise, manufacturing capabilities and extensive logistics network means that we can help provide a customized wear parts solution that helps you extract more from your production process and optimize the quality of your end product.

More information is available at:

 [metso.com/aggregates/wearparts](https://metso.com/aggregates/wearparts)

### Ensuring the lowest sustainable cost

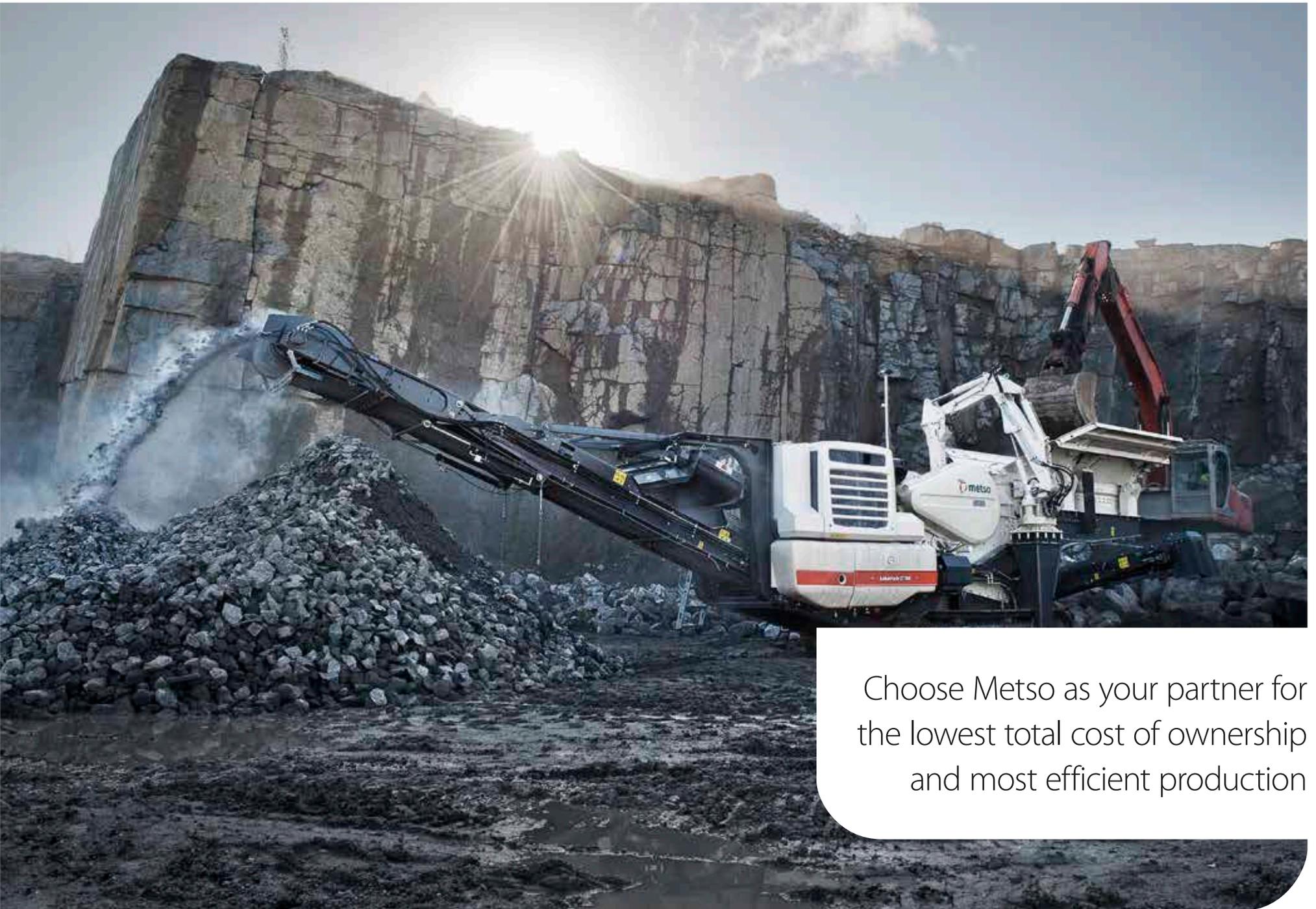
#### Life Cycle Services

Our customizable Life Cycle Services can help you optimize asset performance while you concentrate on your core business. We take responsibility for specific maintenance and operations processes and commit to delivering tangible business performance improvements. Our programs are designed to cover a series of inspections for complex process and maintenance optimization efforts, spanning multiple years, and measured against strict performance indicators.

Whether you are a global aggregates producing plant, or operating equipment in a regional quarry, Metso also offers tailored rental and leasing options for select equipment that help you manage large capital costs, with payment plans built to follow your production revenues. Metso also offers Fixed Monthly Fee plans as well as cost per ton plans which ensure that your goals and Metso's are aligned for maximum production.

More information available at:

 [metso.com/services/life-cycle-services-for-aggregates](https://metso.com/services/life-cycle-services-for-aggregates)



Choose Metso as your partner for  
the lowest total cost of ownership  
and most efficient production

# Satisfied customers

## Repairs and refurbishments case study



### Improved availability

#### Background

- An aggregates producer in Eastern Europe was experiencing high levels of downtime due to machine age and condition
- With Metso mobile and semi-mobile plants used in production, the client wished to improve uptime and increase wear part life

#### Our solution

- Metso Field Service teams provide regular preventive inspections on a monthly basis according to customer schedule
- Service visit available within 24 hours in case of breakdown
- Supervision of spare and wear parts installation
- Inventory planning for crushing and screening spare and wear parts
- Process solutions provided to efficiently meet market demand

#### Results

- Availability of crushing and screening equipment increased to above 90%, even with some equipment being over 20 years old
- Increased value of produced goods (more fractions with highest market value produced)
- Significant production cost savings with greatly improved wears lifetime by using Metso wear parts and increased energy efficiency

## Emergency services case study



### Minimized downtime

#### Background

- A French aggregates quarry experienced a blockage in a heavily used but critical cone crusher resulting in mechanical damage and an eccentric bushing breaking
- The break took place during a holiday period which made assembling a repair team challenging
- Temporary repairs were needed until client could bring in a newer machine which they were planning on purchasing

#### Our solution

- A Metso Emergency Field Services team was quickly sent to the client's site to assess the extent of the repairs and parts needed
- The crusher required repairs at a nearby Metso service center
- Metso parts and supply planners rushed in the needed parts to minimize downtime for the quarry

#### Results

- The damaged crusher was repaired quickly and reinstalled at the client site within days
- The repair secured the client the time needed to bring in the newer replacement machine, while minimizing lost production due to downtime

# Satisfied customers

## Repairs and refurbishments case study



### Significant cost savings

#### Background

- Indian road infrastructure company was experiencing equipment downtime due to the harsh operating conditions and high stress levels placed on its machines
- Site equipment included Metso Lokotrack crushers LT105 and LT1100

#### Our solution

- A major refurbishment carried out at the customer site in Indore, Madhya Pradesh to reduce repair time and keep the costs down
- Repairs and upgrades to screen systems and feed box lining
- Main conveyor structure overhauled and chute liner for cone crushers replaced
- Major repairs to lifting and side conveyors
- Only the most complex components of the plants were quickly sent to local authorized repair facilities (ARF) which reduced downtime for the repair project

#### Results

- Substantial cost savings by not needing to send the entire crushing plant to repair facility, and improved availability
- Fast turnaround time ensured the crushers were back at work quickly

## Installation and commissioning case study



### Fast and efficient installation

#### Background

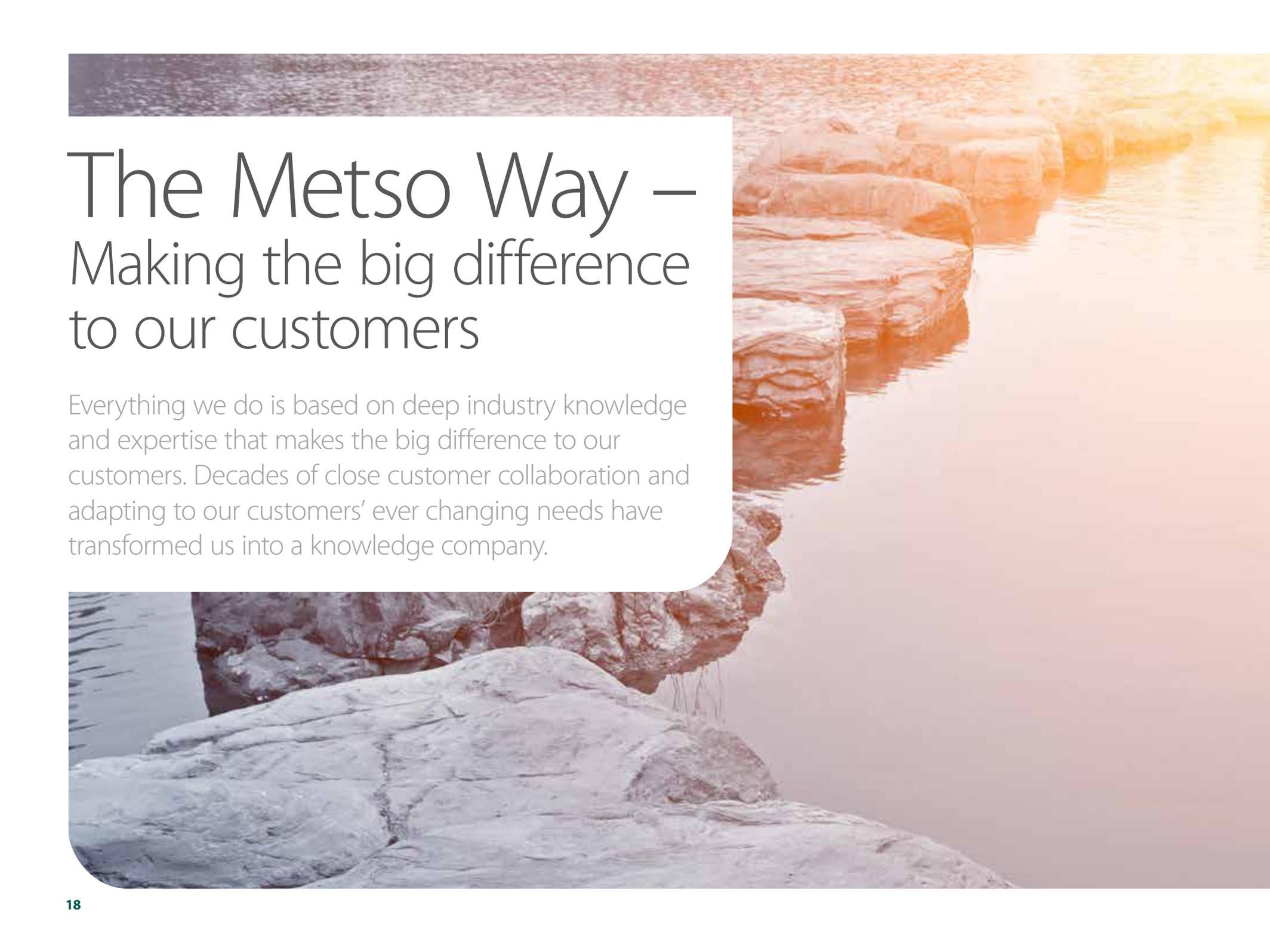
- Indo-China road project sub-contractor wanted to install a crushing plant in a remote location 225km from Kashmir, 4860m above sea level
- The location had minimal accessibility and Metso was chosen to finish the supply, erection and commissioning within two months
- Temperatures of  $-40^{\circ}\text{C}$ , icy winds and no cellular network coverage in the area made site installation and communication challenging

#### Our solution

- A 235TPH Metso mobile system, equipped with a C106 jaw crusher and GP11F cone crusher
- The Metso crushers needed to be disassembled and shipped to the site in parts to meet permissible loads on the hilly roads leading to the site
- Precise logistics planning from the Metso supply chain team was needed to ensure smooth delivery to the remote site

#### Results

- With Metso's skilled planning and project management, the project was installed and commissioned in 35 days, ahead of time and on budget
- Plant was in full production several weeks after commissioning and is now performing according to expectations



# The Metso Way – Making the big difference to our customers

Everything we do is based on deep industry knowledge and expertise that makes the big difference to our customers. Decades of close customer collaboration and adapting to our customers' ever changing needs have transformed us into a knowledge company.

Through our knowledge and experience, we work with our aggregates customers to create solutions that enable them to attain their objectives. We call this **The Metso Way** which focuses on creating value to our customers.

## The Metso Way is built upon:

### Knowledge –



Working closely with our customers globally for many years has given us the unique advantage of learning from a wide variety of operational situations. This has allowed us to develop world-leading expertise in all areas we serve.

Whether we deliver a single product or take comprehensive responsibility for a complete business process, our knowledge guarantees that we can help you maximize your performance. As the world changes, we can help our customers adapt and sustain that performance.

### People –



Our highly-competent and committed professionals around the world can help bring knowledge, experience and visionary thinking to your operations.

We listen to your needs and always put your interests at the center of what we do. A strong part of our culture is based on honesty and resilience. Once we make a commitment to you, we will always strive to deliver and will be there to correct problems if issues arise. We deliver world class solutions even under the most challenging conditions.

### Solutions –



Our sustainable solutions help you improve your productivity, performance and profitability. Our wide spectrum of solutions range from supplying parts to conducting comprehensive maintenance services and highly sophisticated process analysis.

Our service professionals are always available and responsive to your requests to ensure your needs are quickly addressed. Underpinning our global presence are our worldwide service centers and partner network ensuring that our solutions are supported over the full life cycle of your project.



**Metso Inc.,**  
[metso.com/aggregates](http://metso.com/aggregates)