

Metso

Exceeding your performance targets

Life Cycle Services for Mining



Life Cycle Services for Mining

To maintain and increase their productivity, mines need to ensure high reliability and equipment availability, Life Cycle Services (LCS) offer long-term solutions that can help them achieve these goals.

Typical challenges in mine operations

In the mining industry, our customers face challenges like managing inventory and executing shutdowns efficiently, as well as dealing with unplanned maintenance stops. In addition, customers typically require support to improve production, safety and sustainability for their operations.

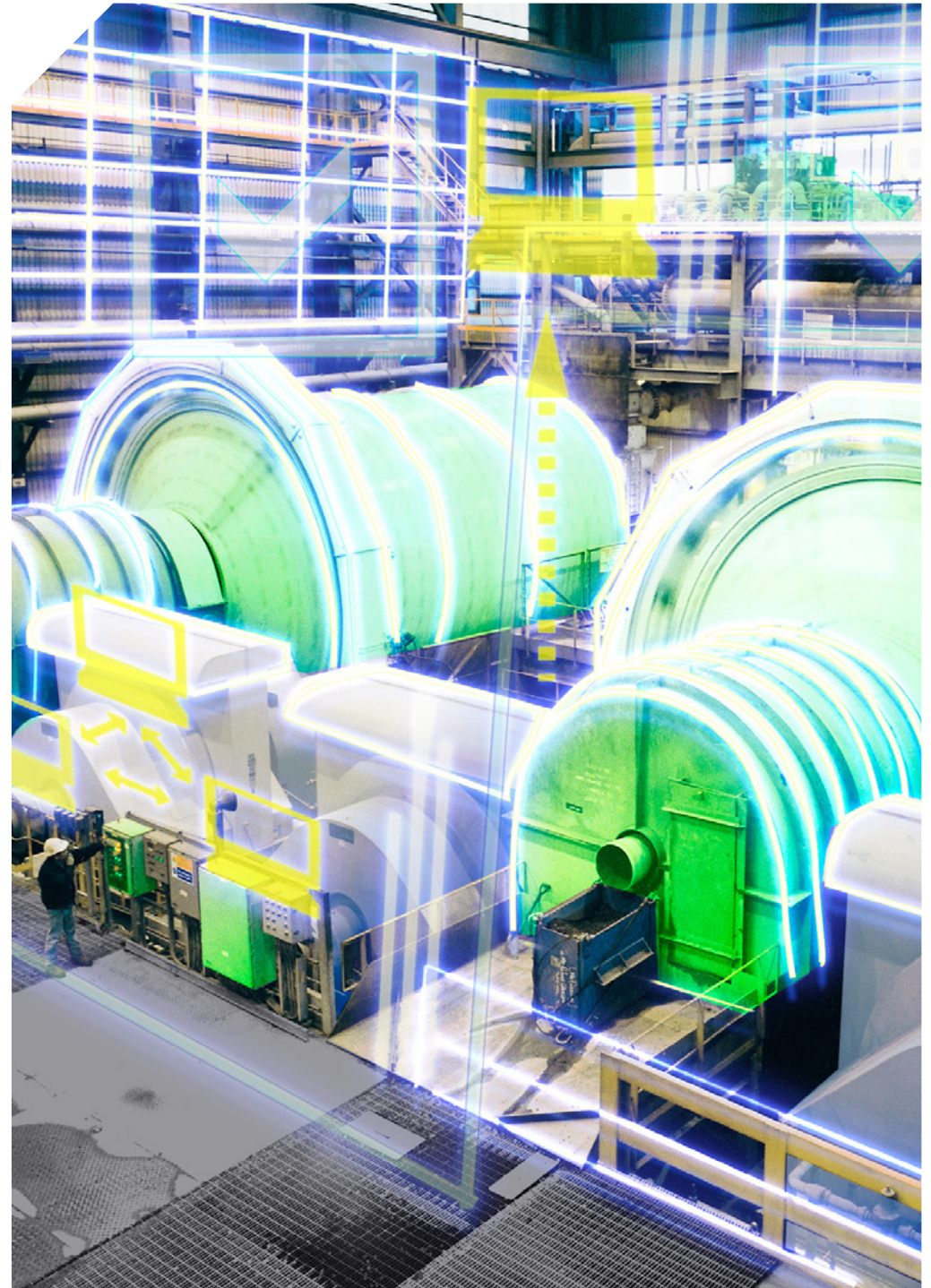
At times, they may also face difficulties finding the right expertise.

Choose Life Cycle Services for mining

Metso LCS can help you overcome such challenges. With LCS, the full range of Metso services can be conveniently bundled into customizable, easily manageable packages, ranging from the basics to more complete solutions, depending on the scale of your needs. Our packages range from a 12 month inspection program to multi-year agreements for the full maintenance management of your assets. Whatever your challenges, we'll help you get the most from your mining operations.

What are Life Cycle Services?

Metso Life Cycle Services offer long-term solutions to help you exceed your performance targets through partnership agreements. We'll put together the right team of experts for your particular needs and work closely with you to tailor a package to achieve your goals.



Four LCS packages

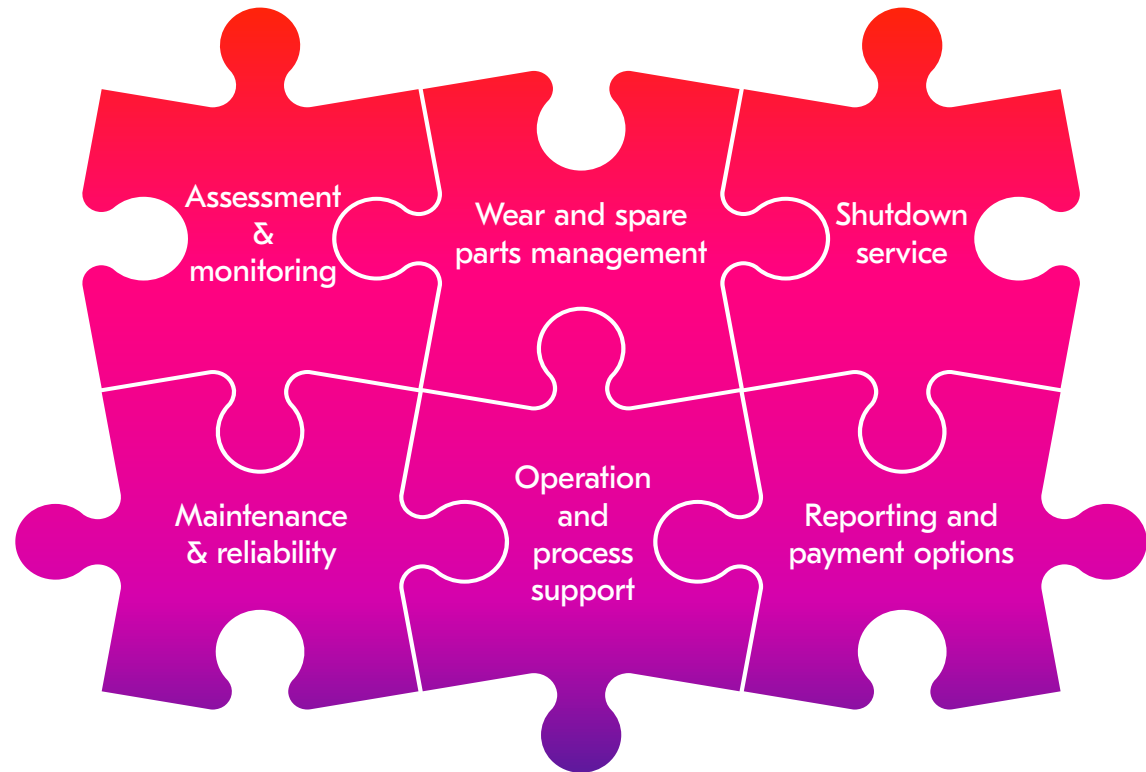
We offer 4 Life Cycle Services packages to meet your needs. Each package adds additional features and every aspect of an LCS package can be tailored to help you meet your objectives. Beyond packages, we also offer LCS solutions that can be fully customized to meet your specific needs.

1. Inspect and protect

2. Shutdown advantage

3. Maintenance edge

4. Total performance



Core benefits



Increased production



Improved reliability



Higher availability



Lower operating costs

Industry-leading service expertise

Service expertise

We're here to support you with a world-class team of experts and decades of experience gathered from mining projects around the world. We have a proven track record of helping our customers to succeed, and whatever your specific needs, we will use our deep understanding of mining processes, product design and technology to help you achieve and exceed your targets as well.



A global network



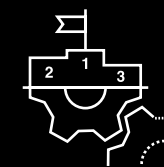
Global footprint



5,000 service experts



140 service locations



3 Performance Centers

A complete service offering

With Metso LCS packages you get everything you need in one place and our service portfolio covers everything from spares and wears to advanced maintenance and expert services. We also have a global footprint with an efficient logistics network that is present in all main customer markets.

Metso crushing, grinding, screening, filtration, flotation, bulk handling equipment & hauling and loading solutions



Remote services and advanced process control

Process modeling, simulations & optimization

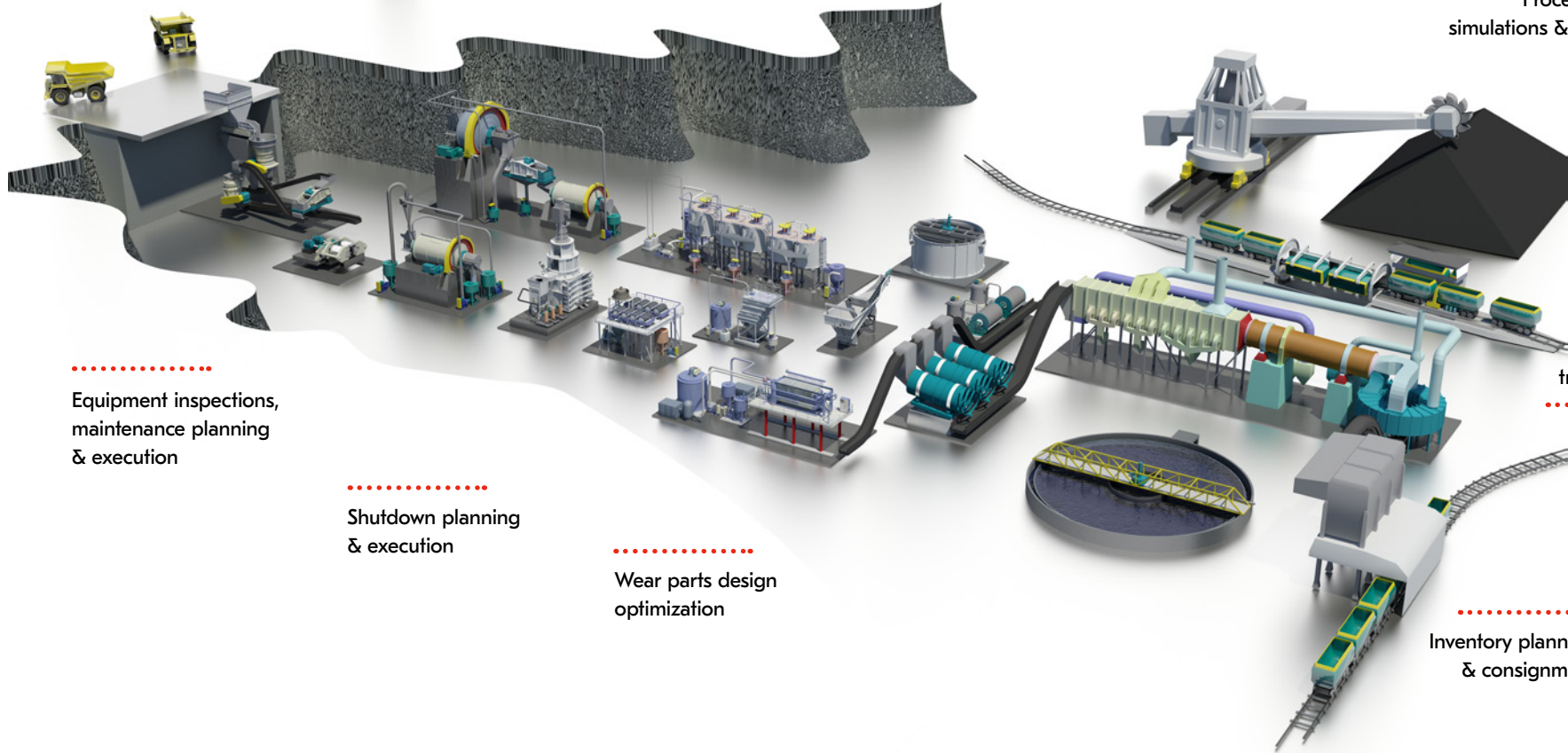
Material transportation

Equipment inspections, maintenance planning & execution

Shutdown planning & execution

Wear parts design optimization

Inventory planning & consignment



Inspect and protect

As equipment develops wear and tear, disruptions and significant unplanned repair costs can begin to add up. It's important to continuously adjust your maintenance plans based on the actual asset's condition, identify issues early, plan future interventions and make sure spare parts are ready when you need them.

Catching issues early

Our Inspect and Protect package gives you peace of mind by reducing the risk of unplanned downtime.

Scheduled OEM inspections help prevent breakdowns and unplanned repairs, and they reduce maintenance costs. Our trained and certified technicians provide detailed reports identifying equipment condition following inspections. They can also make recommendations for maintenance actions and strategies that need to be taken, including extending or reducing maintenance intervals. Our technicians can make the required repairs using spares designed for your machine and identify problem areas.

A well-planned parts management plan is also included in the Inspect and Protect program, which helps ensure a reliable parts supply for quicker and more effective maintenance.

Connectivity for better visibility

To identify equipment that would benefit the most from scheduled inspections, a thorough site evaluation is recommended and can help to focus the preventive maintenance planning. Though on-site inspections are important in identifying problems before they develop into larger issues, remote monitoring can also play a role in providing additional visibility into your equipment's health and performance. With Metso Metrics™ connected to your equipment, new areas for improvement can be identified and unplanned downtime can be reduced to a minimum.



Core outcome

Peace of mind knowing OEM technicians have verified your equipment condition to catch issues early

Other benefits

- High equipment availability and fewer breakdowns
- Better wear and spare parts availability
- Improved and optimized inventory management

Shutdown advantage

Equipment shutdowns for planned or emergency maintenance directly impact your production, and it can be challenging to coordinate all the required resources, equipment, tools, procedures and schedules. In addition, many suppliers only provide one part of a shutdown package, meaning multiple teams become involved, which can complicate the process.

Fast and easy planned shutdowns

With our Shutdown Advantage package, Metso ensures smooth, safe and successful shutdowns, performing all elements of a shutdown from start to finish. The package includes a site evaluation and shutdown planning, as well as the actual execution of the shutdown. It also includes expert analysis like Single Minute Exchange of Die (SMED) Time and Motion analysis to identify ways to improve and speed up shutdown execution. By applying experience gained from shutdowns performed on thousands of Metso installations, shutdowns can be continuously improved over the life of the contract.

Optimization by design

To complement the shutdown package, an optional wear part and liner design optimization is recommended to ensure the best performance from your wears at the lowest sustainable cost. The optional chamber optimization service can also improve the cavity profile of your crushing equipment for better performance. Improved data can also drive performance gains for your shutdowns. Metso Metrics™ remote monitoring provides data-driven decision making to support shutdown planning.



Core outcome

Successful and safe shutdown execution on time
& on budget

Other benefits

- Maximized equipment availability
& increased production
- Optimized inventory
- Optimized wear parts
- Longer part life and better performance

Maintenance edge

Maintaining the many different types of equipment at your site can be challenging. Each has its own maintenance schedule, procedures and safety considerations, which can make planning problematic. All it takes is one weak link in your maintenance plan to trigger unnecessary equipment failure, shutdown delays and lost production. It comes down to finding the right balance to ensure that reliability levels remain high while service costs are kept under control.

Plan the maintenance and execute the plan

With the Maintenance Edge package, Metso will manage all aspects of the maintenance process for you, including planning, execution, reporting and continuous improvement. We define the optimal maintenance strategy for each piece of equipment to minimize maintenance time and ensure reliable performance at the lowest sustainable cost. Training for your staff on OEM maintenance & operational best practices is also included. We will also optimize your inventory to ensure that the right parts are available when needed. With Metso Metrics™ we can remotely monitor your equipment and look for performance trends. This enables our domain experts to use insights from data gathering and analysis of various sites to support the site team and help predict and prevent failures.

Comprehensive asset management

For larger scale maintenance or periodic service breaks, such as an annual shutdown, Metso can also provide full shutdown services, including planning, optimization and execution. Optional Maintenance and Reliability engineering is also recommended, as it can bring further gains in terms of asset reliability, using a range of tools and methodologies. Our process optimization services are also recommended to complement a Maintenance Edge package, with additional analysis and support.



Core outcome

Maximized equipment reliability

Other benefits

- Optimized maintenance plans
- Improved parts availability

Total performance

Even with your equipment and shutdowns running smoothly, your plant's productivity can still vary greatly as ore inputs change. It can also vary as wear components are worn down from the grind of daily production, or when equipment undergoes a step-change, causing mill liners or crusher wear parts to be replaced. Determining how your equipment, configuration, wear parts condition, changing ore characteristics, blasting practices and controls interact with your process requires a holistic approach.

Amplifying your plant's performance

Get the highest production performance and end-product quality from your plant with our Total Performance package. It includes all the components from Inspect and Protect, Shutdown Advantage and Maintenance Edge, and adds elements to optimize your processes and boost asset performance. This package can support your operations from commissioning and ramp-up to years of continued operations. Our OEM process experts can conduct process benchmarking studies as well as simulations to evaluate your current circuit performance and provide recommendations and support. Maintenance and Reliability engineering support is also included in a Total Performance package, using tools and methodologies to get the most out of your plants assets.



Core outcome

Improved plant availability and performance

Other benefits

- Improved production efficiency and higher throughput
- Better visibility of overall operations through reporting



Equipment and technology specific programs

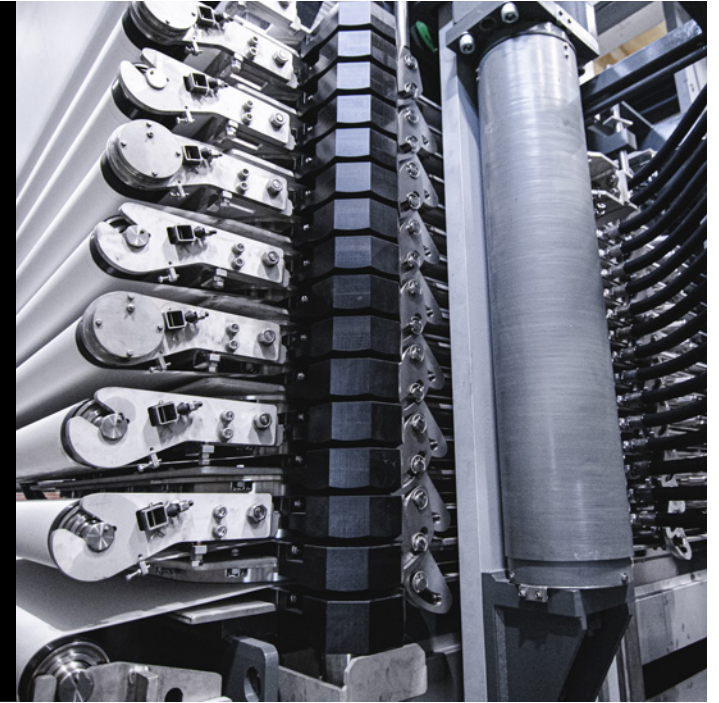
We also offer a range of dedicated programs for customers with specific needs. These include programs for filters, aggregates, pumps and crushing applications.



LCS for Mill reline machines (MRM)
We can bundle a new MRM with Equipment Protection Services, mill liners and spare parts on a fixed monthly payment or cost per ton basis to deliver improvements for your mill operation.



LCS for filters
This program helps you make the most of your filtration assets and ensures you can achieve the maximum production output over their lifecycle.



LCS for pumps
With LCS for pumps, we simplify the maintenance of your pumps, improving their reliability and minimizing downtime. The improved maintenance will also extend pump lifetime.



Crushing 360
This program includes a new crusher, Equipment Protection Services and spare and wear parts in a multi-year fixed monthly payment plan, to provide you with the latest technology at an affordable price.



Life Cycle Services for Mining



Choose a standard recommended package



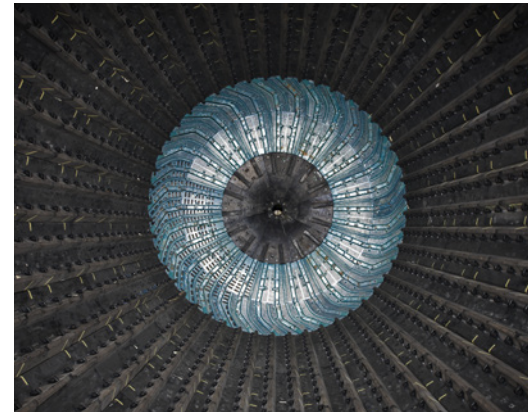
Customize to meet your specific needs

SERVICE CATEGORY	SERVICE OFFERING	INSPECT AND PROTECT	SHUTDOWN ADVANTAGE	MAINTENANCE EDGE	TOTAL PERFORMANCE
Assessment and monitoring	Site evaluation	Recommended	●	●	●
	Scheduled inspections	●	Recommended	●	●
	Metso Metrics™	Recommended	Recommended	●	●
Parts	Parts supply	●	●	●	●
	Consignment inventory		●	●	●
	Inventory management & strategy		●	●	●
	Wear parts design optimization		Recommended	●	●
Shutdown Services	Shutdown planning		●	●	●
	Shutdown execution		●	Recommended	●
	Shutdown improvement		●	Recommended	●
Maintenance and reliability	Maintenance & reliability audit			●	●
	Training programs			●	●
	Maintenance planning, resources & execution			●	●
	Asset maintenance readiness			Recommended	●
	Remote maintenance support			Recommended	●
	Maintenance and reliability engineering			Recommended	●
Operation and process	Commissioning, ramp-up and stabilization support				●
	Site-based process improvement and operational support		Optional	Recommended	●
	Remote monitoring, analysis and support		Optional	Recommended	●
	Process benchmarking, simulation and optimization				●
Reporting	Health, Safety & Environment	●	●	●	●
	Overall Equipment Effectiveness (OEE)			●	●
	Total cost of ownership (TCO)			●	●
Payment & financing options	Fixed monthly billing	●	●	●	●
	Performance / Cost per ton billing		●	●	●
	Upgrades & CAPEX deferral payments				●
	Metso Owned Inventory		Optional	Optional	●

Highlighted services

Chamber optimization

This service tailors the cavity profile to extend wear part lifetime and optimize crushing performance. It improves operational efficiency, reduces energy consumption and decreases the need for changeouts.



Mill liner design optimization
This service optimizes mill liner design to improve safety, uptime and throughput. Based on accurate wear profile data, liners will deliver the optimal results and last longer.



Reline & shutdown services – crushers & mills
Our experts will provide training and audits, and use the best practices, to ensure relines are conducted safely. They will use their technical expertise to ensure successful, on-time shutdowns.



Shutdown optimization for Mill and Crusher reline

We audit, evaluate, and document your shutdown from beginning to end, to identify areas for improvement and reduce shutdown durations.

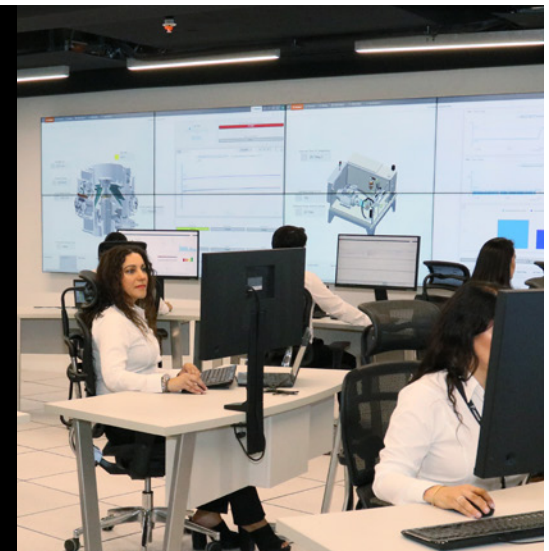


Crusher wear parts

Original Metso crusher wear parts help you keep your crusher up and running. They are available for different applications and models, and provide longer wear life and excellent performance.

Remote monitoring & Performance Centers

Maximize uptime and optimize equipment performance by connecting online data and Metso's equipment and process expertise. Our approach is proactive and we aim for continuous improvement. Metrics™ Monitoring services focus on preventing failures by combining equipment and process expertise with advanced digital solutions, and they also include remote troubleshooting.



Total cost of ownership (TCO)
Optimize the TCO for your equipment and parts by combining Metso equipment and expertise with different commercial options. Our TCO services optimize your cost structure, improve asset availability and reduce risk exposure.



Process improvement services

These services include both remote and on-site process support and tailored solutions to help you improve and maintain the performance and sustainability of your operations.



Site evaluation

Metso's performance-based solutions help you improve your plant operations based on the assessment of your production, shutdowns, control system performance and maintenance strategies.



Maintenance, reliability and planning services
Develop the optimal maintenance and reliability strategies, utilizing our OEM expertise, and proven Reliability Centered Maintenance tools and methodologies.



Metso Owned Inventory

This service brings together the right services, parts and expertise to help you balance costs, availability and inventory levels, as well as ensuring reliability throughout your whole process.

CASE STUDY

Boliden Kevitsa Mining, Sodankyla, Finland

The Kevitsa mine in Finland produces copper and nickel, as well as silver and gold, and the mine operation includes two AG mills and a pebble mill. They selected a Metso LCS contract to reduce liner wear, improve shutdown times, and improve the logistics for all their wear parts.

Metso recommended their Megaliner™ solution to reduce the number of liners in all mills. The contract itself includes the supply of mill linings, change-out labor and shutdown planning, and care of the primary gyratory, as well as the MP 800 Cone crushers.

With the LCS contract, Kevitsa was able to improve the availability of their mills. They also reduced shutdown time by 20% and Megaliner™ enabled them to reduce the number of liner parts that needed changed by 50%.



CASE STUDY

Jindal Steel and Power Ltd., (JSPL), New Delhi, India

New Delhi based JSPL is one of the leading players in the steel industry in India, and their plants include 2 pellet plants, 8 VPA filters and 10 slurry pumps. To build on their success they wanted to ensure that they could meet the right quality parameters, and maintain continuous operations and high availability, while running the facility at its optimum level.

They awarded Metso a 3-year LCS contract for the operation and maintenance of the VPA filters. The LCS contract included equipment, maintenance services, inspections and technical support.

Thanks to the LCS agreement, JSPL was able to reach 95% availability for their VPA filters, which translated into a gain of 15 more days of plant operation.



CASE STUDY

Tata Steel, India

Tata Steel in India wanted to increase the combined production at their Katamati and Khonbond iron mines from 6.6 to 10 million tons per year, while maintaining their safety levels. In addition, they also wanted to be able to deal with different ore feeds and end products at both sites.

To achieve this, Tata Steel agreed to an LCS contract with Metso. The contract includes a cost per ton plan for both plants of 250 tons per hour at each site, as well as the operation of both plants, material stacking and final logistics inside the mines area.

This enabled Tata Steel to reduce risks and concentrate on their steel production, rather than on operating and maintaining the crushing portion of their operation. With the LCS agreement, and Metso crushing and screening units, they were able to improve production and meet their new targets, as well as meet their customers' expectations for fines and ensure the required level of safety.



CASE STUDY

Hunchun Zijin, China

The Hunchun Zijin copper mine is located on the border between China, Russia and North Korea, and it has an annual production of 26,000 tons. They have had an LCS contract in place since 2017 and were looking to debottleneck the servicing of their screens and ensure equipment efficiency.

The Metso solution included HP6 crushers and screen media, and an updated LCS contract which added consignment inventory, 24/7 emergency response, technical support, inspections and training.

With the new LCS, Hunchun Zijin successfully reduced crusher downtime and ensured high parts availability. In addition, the new Metso screen media enabled them to improve overall screening efficiency by 18%.





Financial and payment options

-
-
-
-
-
-
-
-



Metso Owned Inventory (MOI)

Having Metso inventory on site allows you to reduce your working capital while maintaining high parts availability to keep your equipment running.

Performance/KPI based billing

Payments can be adjusted based on KPI targets to ensure Metso is incentivized to deliver performance or is penalized if the targets are not achieved. Multiple KPI's can be considered, typically being equipment availability, component lifetimes, end-product quality and safety indicators.

Fixed monthly billing

We mutually predetermine your payment schedules to allow better predictability. Once we've defined the scope of your LCS, we'll set up an amortization schedule, laying out invoice amounts on a monthly basis.

Upgrades and CAPEX deferred payments

When operational parts are part of the LCS scope, we offer optional deferred payment plans for new capital equipment and/or spare parts. This gives you financial flexibility to quickly acquire the solution you need.

Cost per ton billing

Cost per ton payment plans take cost spikes out of the picture and charge you based on what you produce in a given month. This allows you to better predict costs and cash flows and ensures that interests are perfectly aligned to maximize production.

Our dedicated approach to sustainability

Our dedicated approach to sustainability

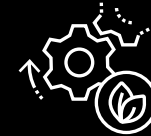
At Metso, we can create positive change through enabling our mining customers. We know that as a leading supplier of equipment and services, our approach to technology and innovation really matters. We create value for our customers with our sustainable offering and contribute by working towards a more circular and carbon-neutral economy.

Optimizing a crusher chamber can reduce crusher energy consumption by up to

30%

Drive sustainability improvements across your site

We help our customers achieve KPI-driven targets for energy reduction and process optimization across their sites.



Reduce energy consumption and CO₂ emissions



Reduce water consumption



Improve circularity



Improve safety



Enhance sustainability with LCS

With our LCS packages we can help you improve your sustainability and contribute to your reporting on sustainability targets, as well as enhancing the long-term efficiency of your operations. For example, we can help you reduce energy consumption, minimize waste and extend the lifetime of your assets. We also provide recycling solutions for parts that have reached the end of their useful life. Our Life Cycle Services can bring benefits to your operation over the life cycle of your equipment.

