

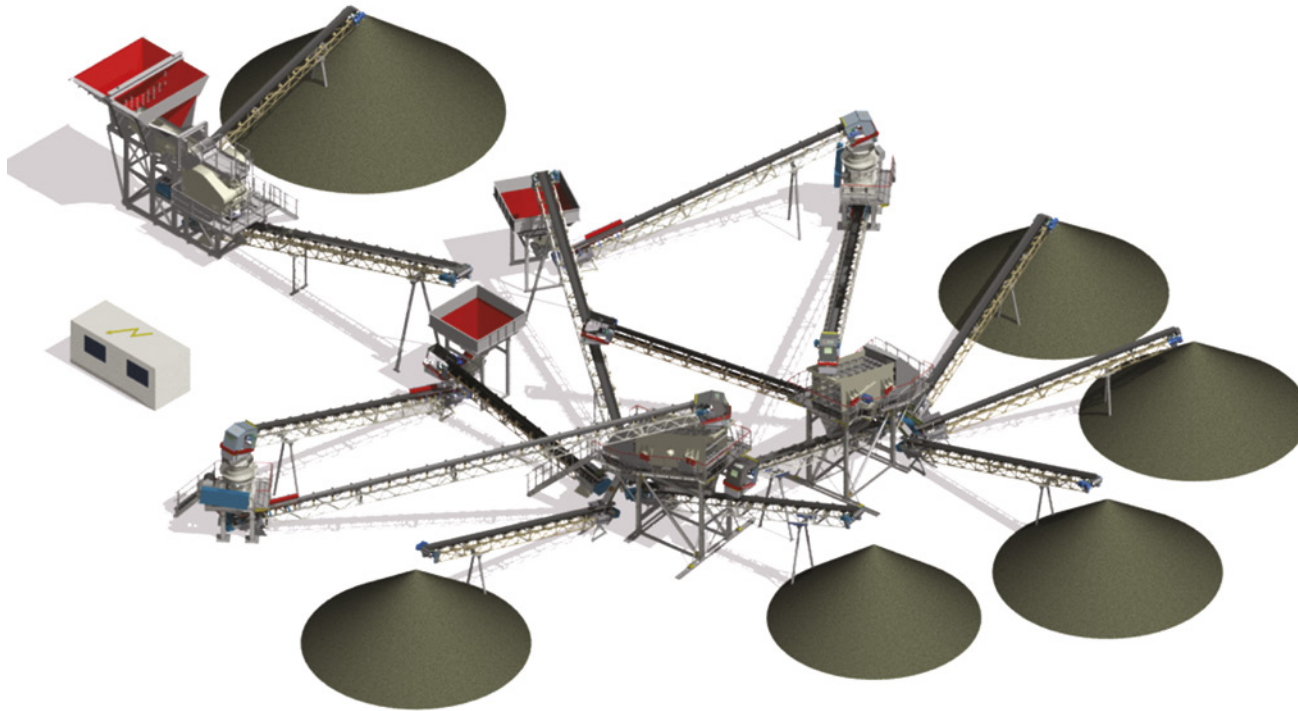
# Metso

Modular plant solutions - APAC region

## Nordplant™

The fast way to full  
production





Example of a complete Nordplant application



# The fast and easy way to build a complete plant

Metso Nordplant™ solutions for aggregates crushing and screening are built using pre-designed modules, which allow quick delivery and easy assembly to get your plant up and running in the time you want.

Whether you are building a complete, totally new plant or upgrading your existing plant, Nordplant solutions provide high efficiency and industrial performance for quick return on investment. Performance and production are guaranteed by Metso.

## Everything you need

With Metso, you get everything you need from one supplier. The standard, pre-engineered components make installation simple, fast and easy.

We offer 10 standard plant variations and layouts to select from to meet your needs. Each Nordplant delivery includes equipment, machines and conveyors; all steel works, electrical cabinets and accessories; and services including planning, shipping, installation and commissioning supervision. The delivery may include optional spares and service availability.

## Quality

Each solution is carefully selected to meet your needs for production, reliability, and aggregates quality.

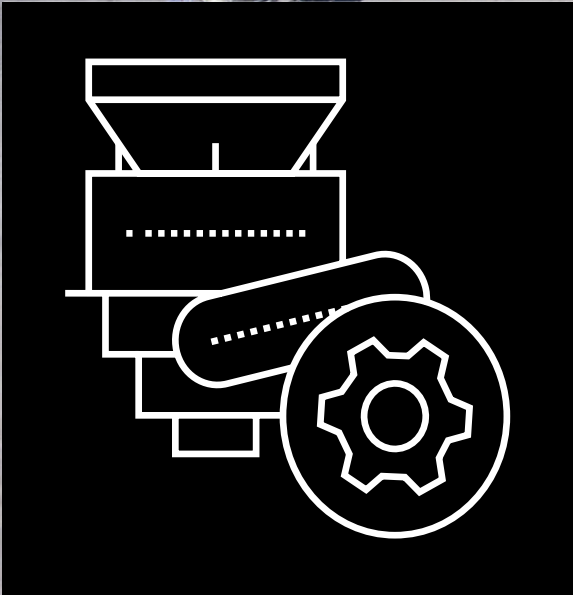
## Safety

Metso ensures that safety and maintenance follow best practices and that the plant complies with local regulations and standards.

## Reliability

Every Nordplant solution is based on proven, world-class Metso equipment and technology.





### The right configuration for your project

Nordplant solutions are always specified together with the customer to ensure they meet their needs. A selection of modules and layouts is available for primary, secondary, tertiary and quaternary crushing and screening. Designed for versatility, the Nordplant modular range is scalable to fit your present and future production needs.

# Cost-effective performance



Nordplant solutions are competitively priced and have lower projects costs because less engineering and planning is required.

With our expert project management team, you get all the technical advice related to plant design and pre and post plant shipment as well as installation work. Metso service experts help optimize the plant and keep it up and running as per your needs. You also save over the lifecycle of the plant thanks to the reliability of Metso's crushers and screens, and the durable and well-designed steel structures.





## Complete plants - the options you need

Complete Nordplant solutions are a good option when you need a plant for aggregates production on greenfield or brownfield sites. With a capacity of up to 400 tph, they can meet your needs when aggregates demand is high and when you need multiple fractions. And their small footprint allows them to be installed closer to the pit, reducing transport needs and environmental impact.

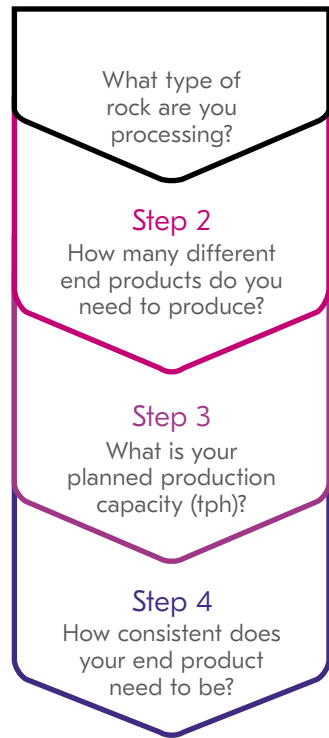
**Metso offers ten pre-designed and ready-to-run Nordplant complete solutions with capacities up to 400 tph for quick production start-up.**

Whether you are looking for an easy or complex plant, one crushing stage or three crushing stages, there's a Nordplant configuration for your needs. These complete solutions give optimized process performance and controlled budget and delivery time for the best return on investment. Every Nordplant solution has a full Metso warranty.

- Available space between the machines for easier maintenance and high efficiency
- On-site setup for immediate production and adaptation to your quickly evolving market
- High quality aggregates shape possible through selective circuits
- Bigger (end product) stock piles compared to mobile solutions
- Intermediate surge bins for proper and regular crushers feeding for high efficiency

# Metso quality

By choosing Metso you get reliable, field-proven technology. Our equipment is famous for its long lifecycle so you can be sure that your investment will retain its value. We have more than 150 years of expertise and leadership in crushing and screening, and with a service network that reaches around the world, you can rely on us for expert services, dedicated support and high-quality wears and spares.



|  |                     | Medium to abrasive rock |         |          |          |            |          |             |
|--|---------------------|-------------------------|---------|----------|----------|------------|----------|-------------|
| Number of end products size fractions    |                     | 4 / GSB                 | 4 / GSB | 4 / GSB  | 4 / GSB  | 4 / M-Sand | 4 / GSB  | 4 / GSB     |
| Max feed size                            |                     | 600                     | 600     | 600      | 600      | 600        | 600      | 700         |
| Production data - From hard to soft rock | Feed products t/h   | 270                     | 270     | 270      | 270      | 200        | 170      | 350 / (250) |
|  | End products 0-40mm | 250                     | 250     | 250      | 250      | —          | —        | 325         |
|  | End products 0-20mm | 160                     | 160     | 180      | 180      | Optional   | Optional | 225         |
|  | End products GSB    | 250                     | 250     | Optional | Optional | —          | —        | 325         |
|  | End products M-Sand | —                       | —       | 60-65    | [60-65]  | 115-120    | 80-85    | —           |
| Product quality (shape)                  |                     | ••                      | ••      | •••      | •••      | ••••       | ••••     | ••          |

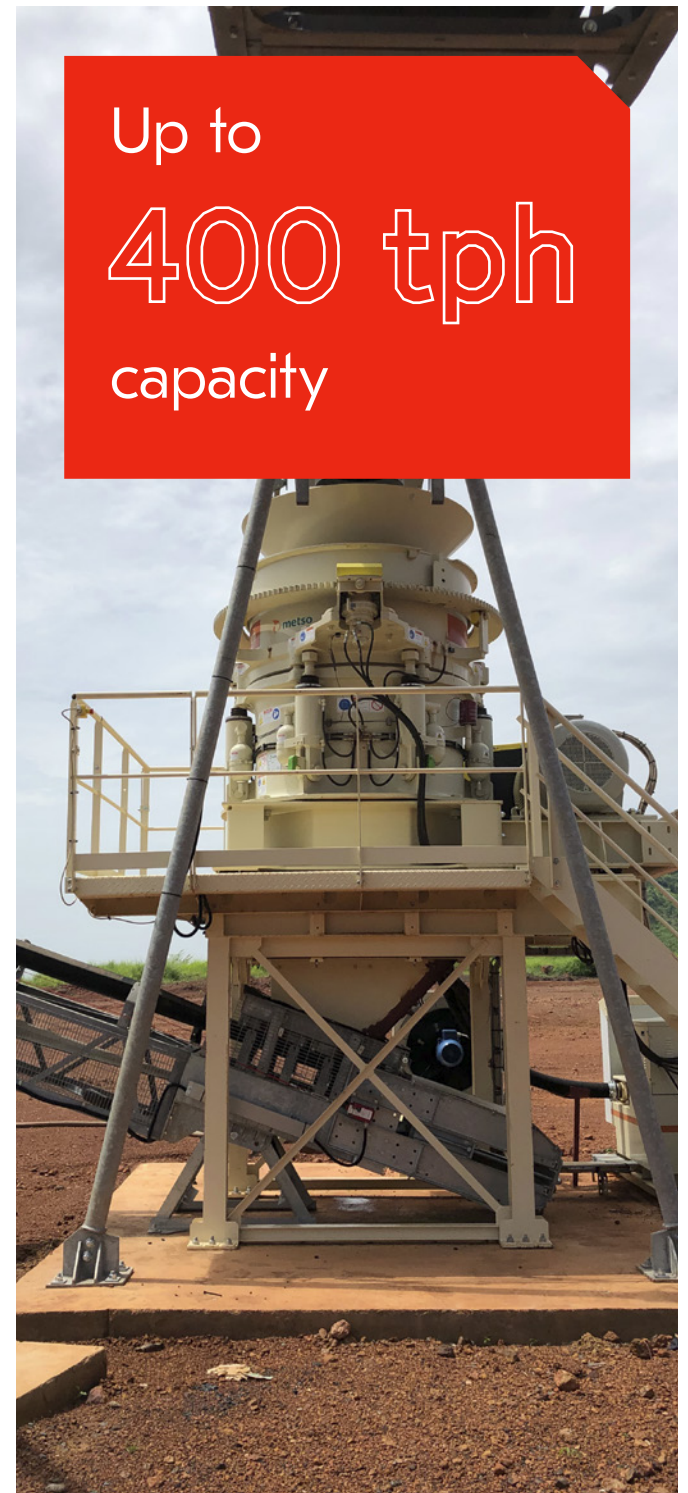
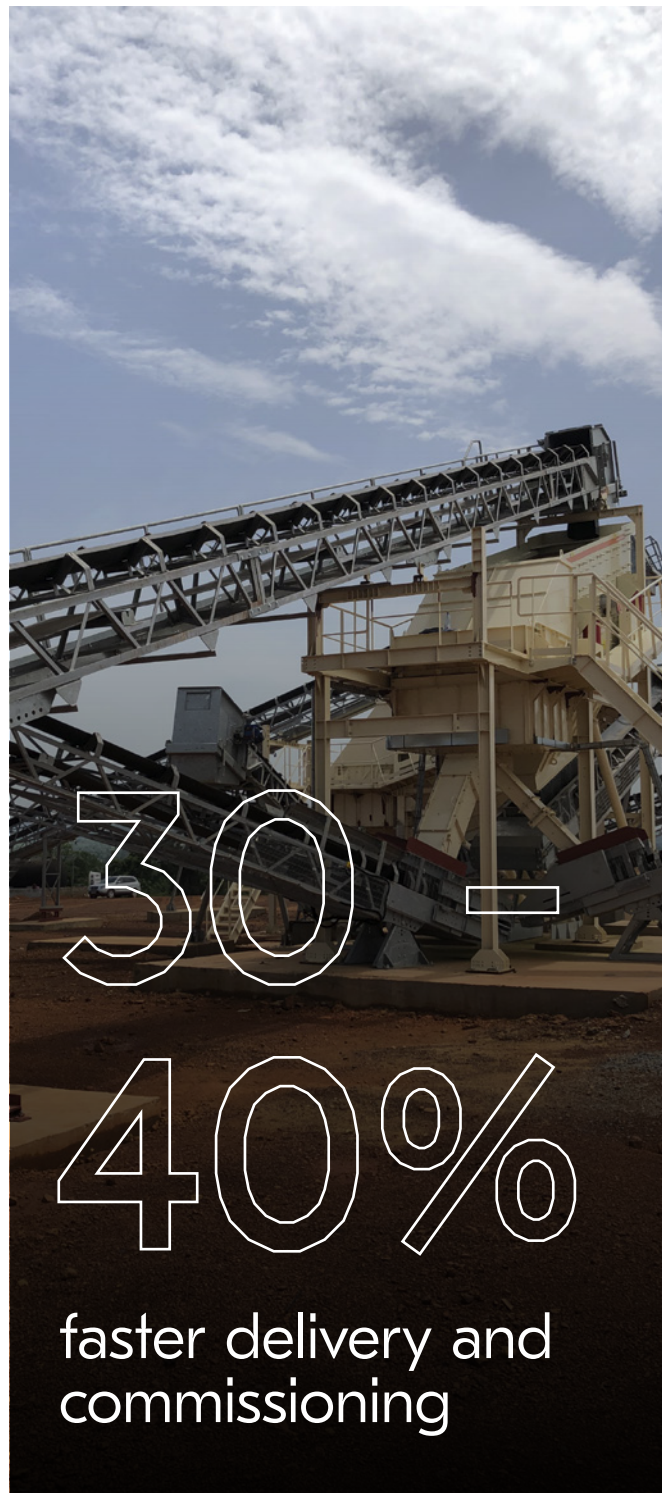
## Your Nordplant solution

| Nordplant model   | 1A                     | 1B                     | 2A                             | 2B                             | 3A                             | 3B                             | 4A                  |
|---|------------------------|------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------|
| Crushing modules<br>Available also with HP200 and HP300 cone crushers                     | C106 TKF11-42-2V GP220 | C106 TKF11-42-2V GP220 | C106 TKF11-42-2V GP220 B7150SE | C106 TKF11-42-2V GP220 B7150SE | C106 TKF11-42-2V GP220 B9100SE | C106 TKF11-42-2V GP220 B7150SE | C120 TKF12-48-GP330 |
| Screening modules   | DS1855-4               | CVB2060-4M             | DS1855-4 DS1855-4              | DS1855-4 CVB2060-4M            | CVB2060-3 TS4.3                | CVB2060-3 TS3.3                | CVB2060-4M          |
| Classification modules  | —                      | —                      | Optional                       | Optional                       | AC30 GI                        | AC30 GI                        | —                   |
| Installed power<br>Based on standard conveyor length with standard 15m product conveyors. | 500 KVA                | 500 KVA                | 500 KVA                        | 850 KVA                        | 1250 KVA                       | 1250 KVA                       | 850 KVA             |



|   |              |              |         |
|---|--------------|--------------|---------|
|   | 4 / GSB      | 4 / GSB      | 4 / GSB |
|   | 700          | 700          | 700     |
| * | 350 / (250)* | 400 / (250)* | 450     |
|   | 325          | 350          | 450     |
|   | 225          | 225          | 300-320 |
|   | 325          | 350          | 450     |
|   | —            | —            | —       |
|   | ••           | ••           | ••      |

|    |                           |                                      |  |
|----|---------------------------|--------------------------------------|--|
|    | 4B                        | 5                                    | 6  |
| 2V | C120 TKF12-48-2V<br>GP330 | C120 VF561-2V<br>TK13-20-2S<br>GP330 | C120 VF561-2V<br>TK13-20-2S<br>2 x GP220 |
| A  | CVB2661-4                 | CVB2661-4                            | 2 x CVB2060-4M                           |
|    | —                         | —                                    | —  |
|    | 850 KVA                   | 850 KVA                              | 850 KVA                                  |



# Nordplant electrical offering level

## Basic:

- Simple and reliable relay controlled electric centers
- Cone crusher always with IC automation
- Electric centers located next to crushers. Optionally can be moved to centralized location
- Conveyor and crusher start and stop from the electric centers
- Hard wire crusher protection and conveyor interlocking
- Functional description, interface specification and commissioning at site included

## Metso IC Series Automation:

- Electric centers with IC Series Automation
- Visual displays to ease plant operation and help in maintenance and diagnostics
- Sensor package to monitor key process values
- Automatic start/stop sequences for each crushing stage
- Electric centers located next to crushers. Optionally can be moved to centralized location
- Sophisticated crusher protection through IC Series
- Ready for remote monitoring through Metso Metrics
- Ready for remote user interface (RUI) to control plant from centralized location at site
- Functional description, interface specification and commissioning at site included

## Full plant automation:

- Complete plant automation in centralized location at site
- Automation system built on SCADA and relays, big, visual and interactive user interface
- Full process control, automatic full plant start/stop sequence
- Electric centers can locate either next to crushers or in centralized location
- Possibility for local use directly from electric centers, eg during maintenance
- Functional description, interface specification and commissioning at site included
- Cone crusher ready for Metso Outotec Metrics remote monitoring

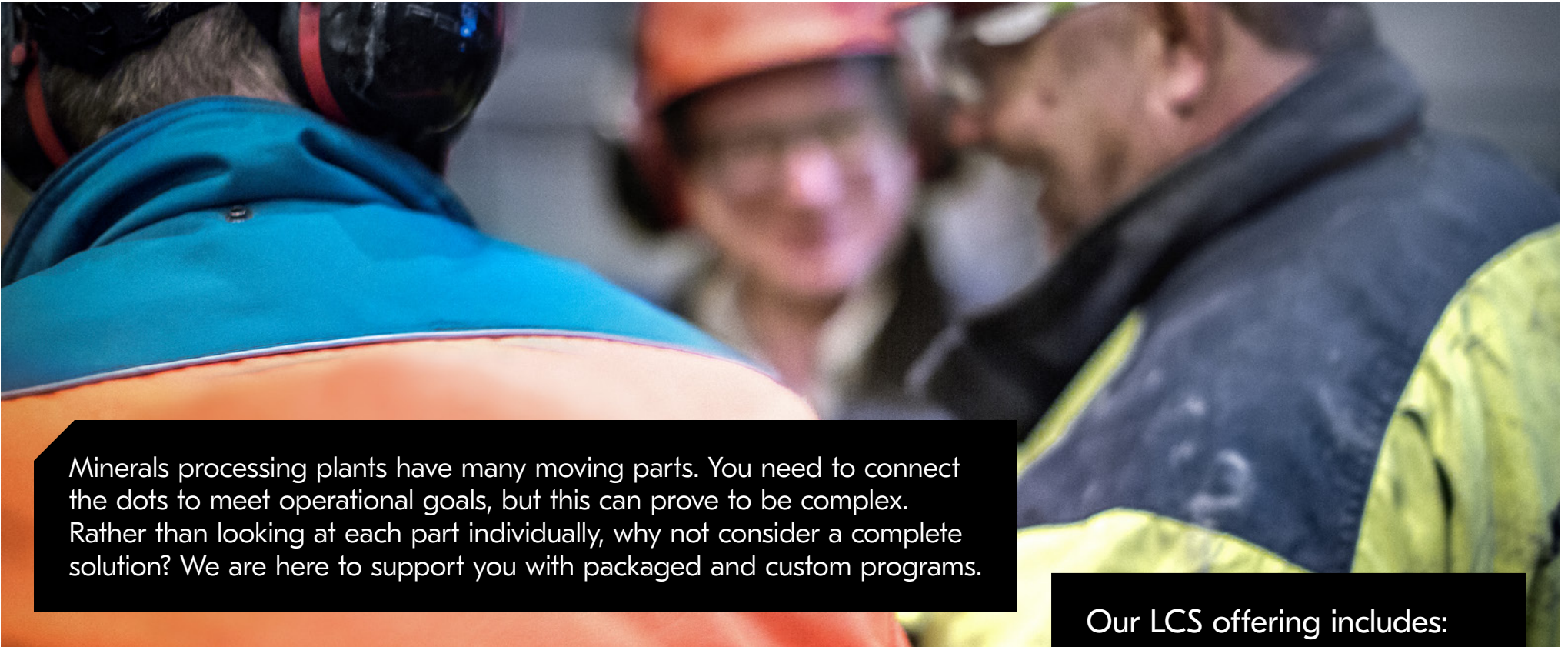






Service and support for your Nordplant

## It's all about protecting your assets



Minerals processing plants have many moving parts. You need to connect the dots to meet operational goals, but this can prove to be complex. Rather than looking at each part individually, why not consider a complete solution? We are here to support you with packaged and custom programs.

### Life Cycle Services

LCS takes the entire range of services Metso provides to our aggregate customers and conveniently bundles them into customizable, easily manageable packages, ranging from the basics to more comprehensive solutions, depending on the scale of your needs. Metso implements industry best practices at each step of your operation to achieve optimum performance and guaranteed results.

### Our LCS offering includes:

- Extended warranty coverage
- Equipment support
- Maintenance services
- Optimization packages





Case: Anusha Projects Pvt Ltd, India

## Anusha Projects began crushing operations in Karzok, India, as part of the Indo-China road project

The Hyderabad-based company aimed to operate a crushing plant in Karzok — a challenging location at an altitude of 4,860 meters. They selected Metso Outotec due to the quality, technology and commitment to making the project a success. Metso Outotec suggested a modular crushing plant, however since the local roads had a load limit of just 7 tonnes, Metso Outotec still had to disassemble the crusher for transport. Despite the rough terrain, extreme weather conditions, and other challenges, Metso Outotec still managed to deliver and install the crushing plant in just 35 days.

*"What impressed me most was their skill in planning and project management. They were highly proactive and always ready to go the extra mile in every situation," says Mr. A Jalandhar Reddy, Managing Director, Anusha Projects.*

### Challenge

- To deliver and install a crushing plant in a remote location in extreme conditions.

### Solution

- A Nordplant™ modular plant equipped with a C106 jaw crusher and a GP11F cone crusher.

### Results

- Anusha Projects established the crushing plant they needed, and began production within a few weeks, reaching their expected level of performance on schedule.

Crushing operations  
start at an altitude of  
4,860 meters



Case: KTN, Mumbai, India

KTN Infra expands their business to produce aggregates and manufactured sand

The demand for aggregates and manufactured sand is rapidly growing in the Indian market, and KTN realized that having their own crushing and screening plant would be beneficial for their business. They selected Metso Outotec as their partner thanks to our good and proven track record. To meet their needs, Metso Outotec designed, delivered and commissioned a complete Nordplant™ solution in record time. The completed three-stage crushing and screening plant produces 1,300 tonnes per day, with 35-40% for their own consumption and the rest supplied to their customers.

*"I have a dream to have five crusher plants of my own and I hope that all of them are from Metso Outotec," says Mr. Vishal Joshi, Owner, KTN Infra.*

#### Challenge

- To start up a new aggregates and manufactured sand plant which could supply KTN's own needs as well as generating surplus to sell.

#### Solution

- The Nordplant™ solution included a Nordberg® C106™ jaw crusher, Nordberg® GP220™ cone crusher, Barmac® B7150SE VSI (Vertical Shaft Impactor), Premier CVB™ inclined screen and Premier TS™3.3 multi-slope screen.

#### Results

- KTN successfully started production with the desired quality and quantity, producing 1,300 tonnes per day, of which 40% is sand.



Per day, the completed plant produces 1,300 tonnes



Case: Robo Silicon Pvt. Ltd., India

## Robo Silicon moves forward with manufactured sand

Robo Silicon Pvt. Ltd. (RSPL) has been using Metso equipment to produce manufactured sand since 2001. Now, they have 14 plants operating across the country, all supplied by Metso Outotec.

RSPL produces a range of aggregates products and they have been steadily increasing their production of manufactured sand. RSPL uses Metso Outotec equipment and original spare parts exclusively for all their plants. Over the years, they have seen their Metso Outotec equipment consistently prove its worth, with superior productivity and reliability. In addition, they have discovered that manufactured sand is also much stronger than river sand and that it enhances the performance of high-strength concrete.

*"We have been buying equipment from Metso for the last 17 years. The first crusher we bought in 2001 is still in operation, an indication of the durability of Metso Outotec equipment," says Mr. Vijay Kosaraju, Managing Director, Robo Silicon Pvt. Ltd.*

### Challenge

- Back in 1999, RSPL started looking for sustainable options to replace the use of river sand in wanted regional infrastructure development.

### Solution

- Their first investment in 2001 included a Metso Barmac® Vertical Shaft Impactor (VSIs) and Metso jaw crushers. In the years since, they have opened 14 plants, all supplied by Metso Outotec.

### Results

- RSPL now uses Metso Outotec equipment to produce aggregates and manufactured sand products which are well-known throughout the region, like Rotek sand. For example, their plant near Hyderabad produces up to 45,000 tonnes of aggregates per month.



Produces up to  
**45,000 tonnes**









Anusha Projects in Karzok, India



KTN Infra in Mumbai, India



Robo Silicon Pvt. Ltd. in Hyderabad, India



Robo Silicon Pvt. Ltd. in Hyderabad, India

