

MATAMATA INDUSTRIAL MACHINERY IMPORTS LTD

### Quarry NZ 2021

# The E Evolution





### World is changing



### ~70% of world population will live in urban areas by 2050 (UN)

### **Planet Positive** Our 1.5°C journey to limiting global warming with Science Based Targets



- Net Positive Partner: Handprint > footprint
- 100+ technologies in our portfolio which improve energy, emission and water efficiency, safety and circular business models for our customers
- Metso Outotec ranked as 8<sup>th</sup> on the Global 100 list of the most sustainable company in the world

### **Customers face several challenges**







Small projects Need for frequent relocation Remote locations Limited infrastructure available **Demanding environment** Need for reliable equipment



**Operational cost** Need for efficient and easy-to-use equipment

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# Lokotrack<sup>®</sup> actions for energy efficiency (2010-20)

### New improved engines

# Advances in engine technology

Changes in emissions regulations

**Optimized RPM** 



### **Fuel Efficiency**



Metso:Outotec

Think Hybrid

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### Optimized hydraulic system

- Optimized hydraulic systems
- Load sensing (LS) circuits
- 60% reduction in hydraulic oil





### **Optimized power transmission**

Direct belt drive for high consuming crushers





### **Engine Stand-By Mode**



Think Hybrid

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### Less energy needed for transport

# Optimized weight with modern FEA tools

### Lokotrack<sup>®</sup> actions for energy efficiency



Think Hybrid

# Annual $CO_2$ reduction 20 000 t

### Where are we today and into the future



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### Different technologies to meet operational efficiency

Typically crusher consumes 70-80% of total energy



### Best of both worlds e-Power

Electricity for urban needs Access to grid

Diesel for remote locations Autonomy

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Think Hybrid

### Two ways to power electric crusher and screen

**e** Power

- On e-Series Lokotrack<sup>®</sup> crushers and screens, all material processing functions are electric.
- The electricity can be produced either with a built-in diesel generator or from the grid. Either way, the use is more economical and less polluting – and often you can drive two Lokotracks with a single generator.
- For tracking, diesel engine is always used.



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# Etrst Lokotrack<sup>®</sup> 1985 – Diesel Electric

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KOTRAC

## In pit crushing diesel / electric solutions

Think Hybrid

Metso:Outotec

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### Hundreds of diesel-electric units delivered since 2010

**Lokotrack**<sup>®</sup>

*e-power* 

Metso:Outotec

metso

### **Advantages of electric drives**

Lower maintenance costs and maintenance frequency

metso

Better environmental compatibility

Longer service life Immediate reduction in energy costs in operation Higher productivity

### **Examples Lokotrack E-Power applications**



LT120E + LT330D aggregate and concrete materials in Finland

LT96E and LT106E railway tunnel project in Japan

### Application Example Montenegro LT1213SE

- Highway project, including bridges and tunnels.
- Electricity available.
- On site costs minimized due to haulage and on site concrete plants.
- LT1213SE machine 132 tph 0/32mm.
- Unit operated ~10,000 hours, 2,650 hours by diesel.
- Opex (10,000 hours)
  - Diesel 79,500 euro + electricity 97,020
    = 176,520 euro
  - If operated on diesel only 300,000 euro



# Electricity from the grid

Efficient crushing and screening in extreme conditions

Application 200 tph production of aggregates

**Units** Lokotrack<sup>®</sup> LT120E<sup>™</sup> Lokotrack<sup>®</sup> LT330D<sup>™</sup>

Metso:Outotec



Direct electric operation has proven to be the right solution, as the investment is quickly paying itself. At the same time, the site uptime is higher with much less service."

Iceland

# Two units, one engine

Cost efficient operation with the secondary crusher powering the screen

Application

0/3, 3/6, 6/12 mm products for concrete

### Units



Lokotrack<sup>®</sup> LT120E<sup>™</sup> Lokotrack<sup>®</sup> LT330GPSE Lokotrack<sup>®</sup> ST4.10<sup>™</sup>

Metso:Outotec

Last year, we crushed more than 600,000 tons. When such volumes are being produced by a single crushing plant, the machinery needs to be reliable."

Finland



### Multi-stage units

Power a multi-stage system with one engine.

**Application** 0/6 and 6/12 mm products for concrete

**Units** Lokotrack<sup>®</sup> LT120E<sup>™</sup> Lokotrack<sup>®</sup> LT4MX

Metso:Outotec



An electric drive was an essential factor for use when choosing the new equipment. In future, we'll be able to run the while chain using only one generator set."



### Summary

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POWER

Sustainable solutions are needed and coming. Metso Outotec strategy is planet-positive. Contractors need easy-to-use, energy efficient and high mobility solutions Lokotrack<sup>®</sup> e-Power solutions enable flexible operation both in urban and remote locations

# **Questions - Comments**

