

Women In Mining
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Sustainability in Metso Outotec

Kaisa Jungman
Eija Saari

RESTRICTED

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Metso:Outotec

Enabling customers to reach their sustainability targets

Planet Positive product for every part of the value chain



All R&D with
sustainability
targets

Accelerating
Planet Positive
sales

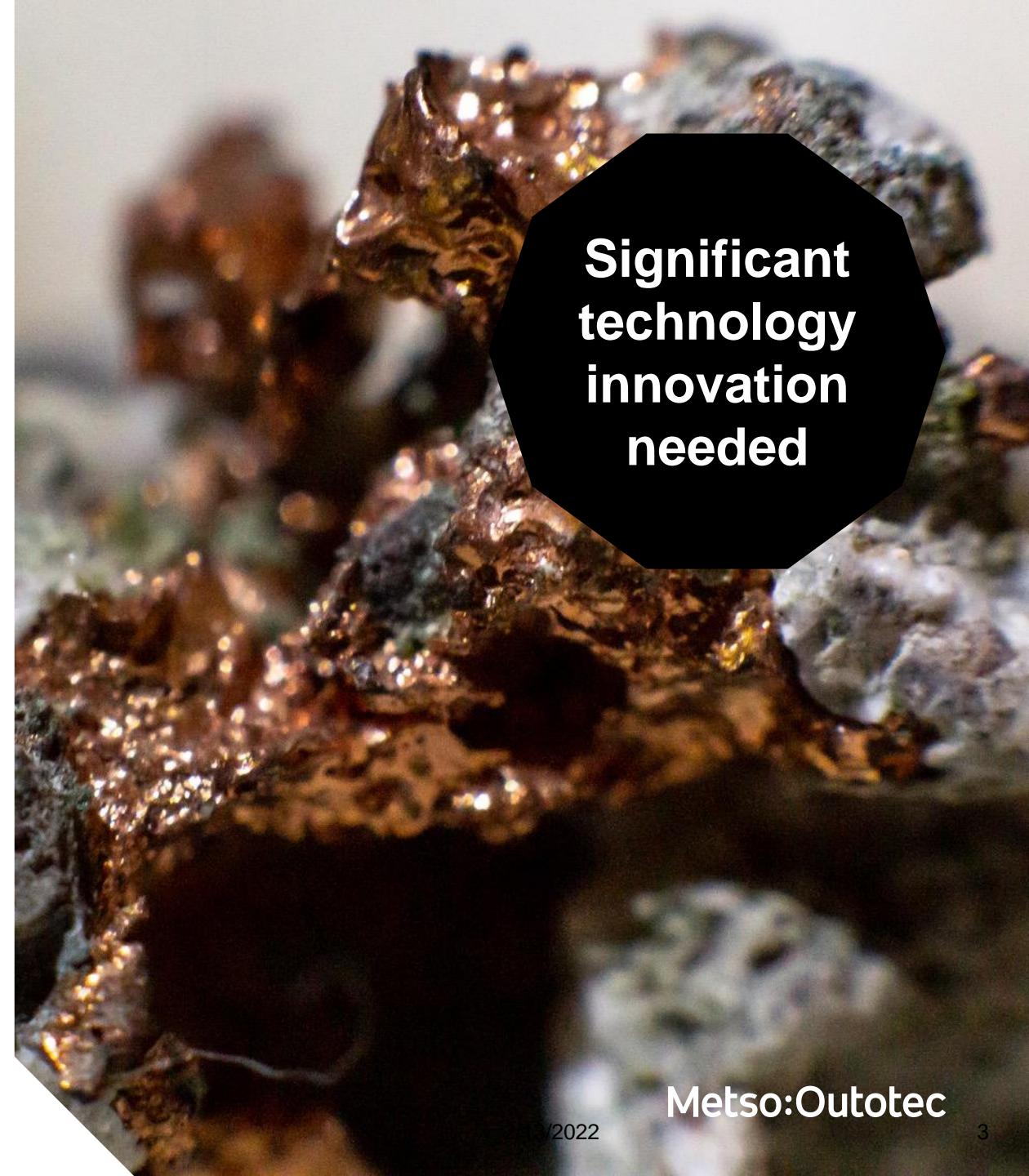
Partnering with
suppliers to
decarbonize the
supply chain

Own operations
CO₂ emissions
net zero by 2030

Zero harm

Major transformation in our customer industries

- Demand for metals increases
 - Especially clean energy materials e.g. copper, nickel, lithium
- Transition towards low-carbon operations
- Electrification and interruptible power
- Increased risks in the natural and social environment
- Increased focus on environmental demands from societies, regulators and investors



Planet Positive portfolio is a competitive advantage

We aim to have a Planet Positive product for every part of our customers' value chain we are present

- Sustainable products and services
 - demonstrably better than the market standard
 - help our customers achieve their sustainability goals
- 100% commitment to sustainable R&D with innovations
- Growing part of our overall sales in the future



Energy efficiency
and emissions



Water
efficiency



Offering in
circularity



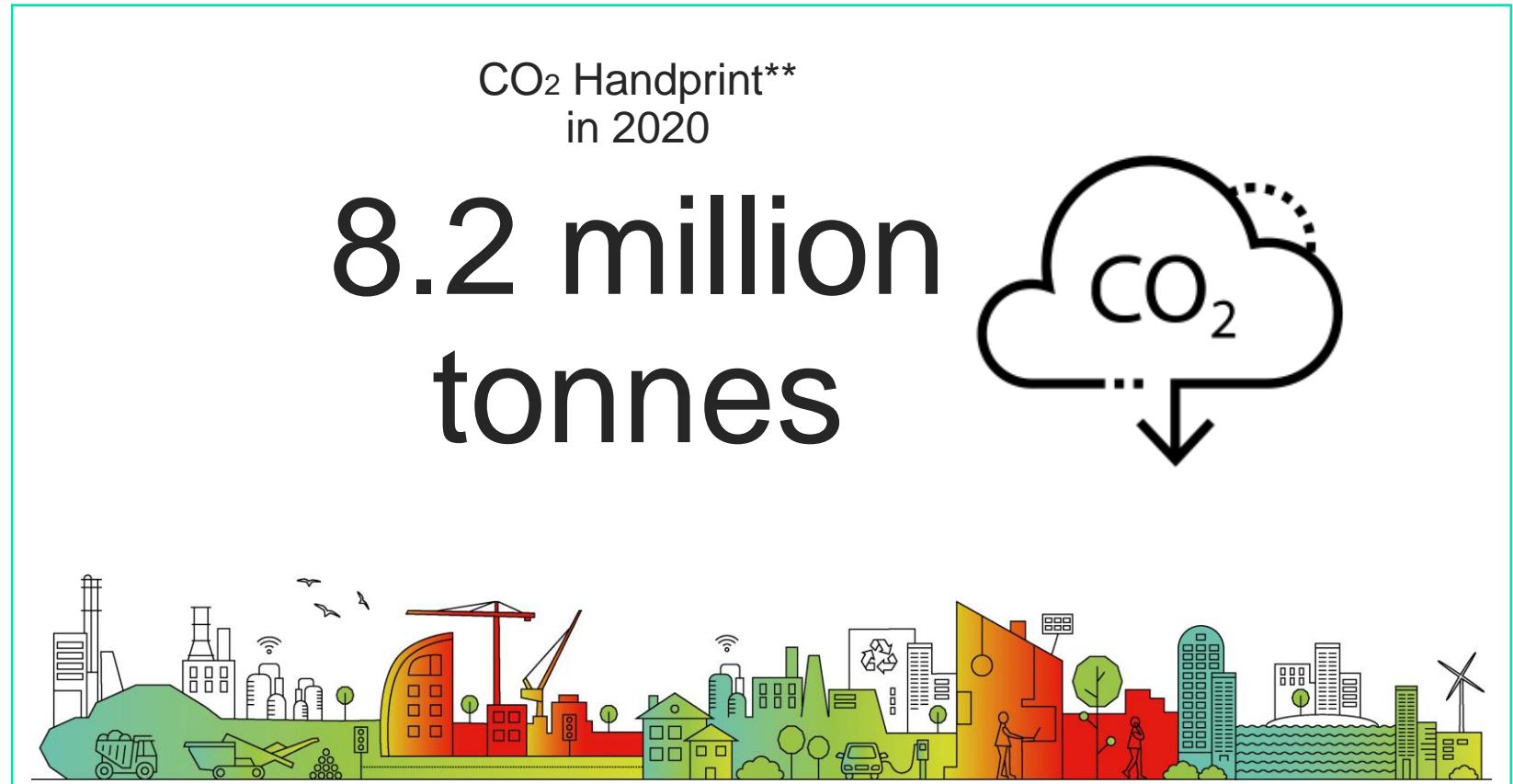
Safe customer
operations



Around 130
products in the
Planet Positive
portfolio

Our handprint is significantly bigger than our footprint

CO₂ Footprint*
in 2020
1 million tonnes



***Footprint = emissions generated in production, logistics, purchased good and services as well as flights*

***Handprint = emissions avoided in customer operations with 17 metals refining and minerals processing technologies*

Kaivosteollisuus ja vihreä siirtymä

- konkreettisia esimerkkejä

Eija Saari, PhD
Ecosystem Lead
Technology and Innovation

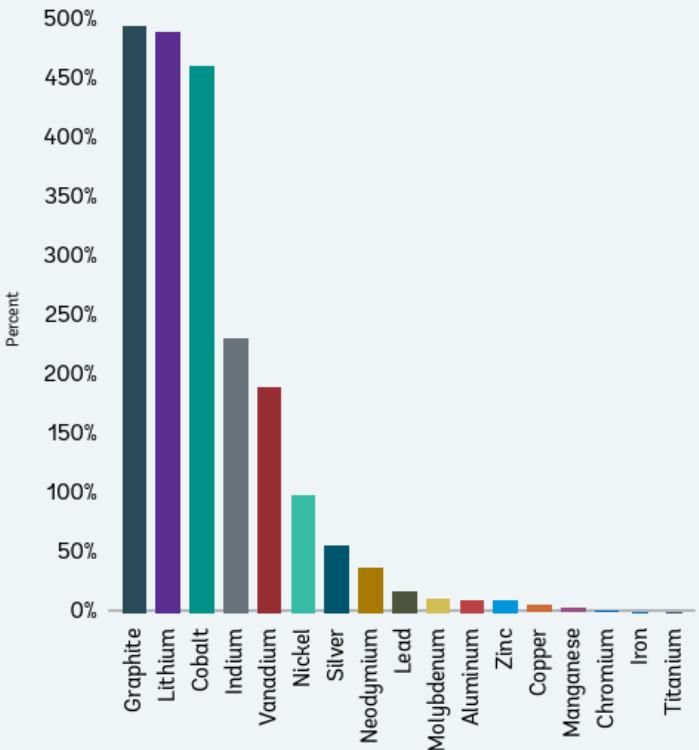
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VIHREÄ SIIRTYMÄ – MINERAALIEN ARVIOITU KYSYNTÄ

Source: Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition,
International Bank for Reconstruction and Development / The World Bank, 2020

a. 2050 annual demand from energy technologies
as percentage of 2018 production



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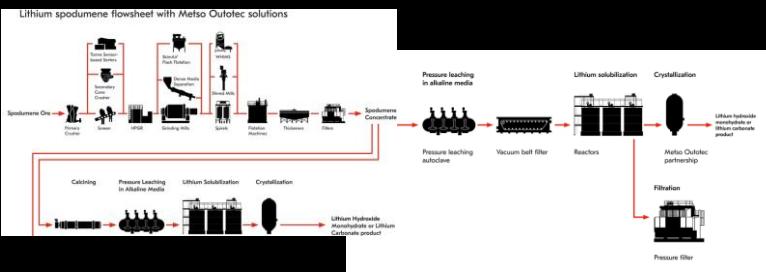


Images: Prof
Heiskanen, 4th
PROMETIA
Scientific Seminar &
Shutterstock

Metallien saatavuuden kasvattaminen

Vastuullista ja ympäristöystävällistä akkumetallien louhintaa

Useita uusia prosessireittejä ja laitosratkaisuja Li-mineraalivarojen tehokkaaseen hyödyntämiseen



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Image: Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition, International Bank for Reconstruction and Development / The World Bank, 2020





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Kaivosteollisuuden jätteestä rakennusteollisuuden raaka-aineeksi

Geopolymeerit

97% kiertotaloustuotteita

E-CO₂ on vain 10% vastaan
sementtipohjaisen materiaalin
E-CO₂:sta (LCA)

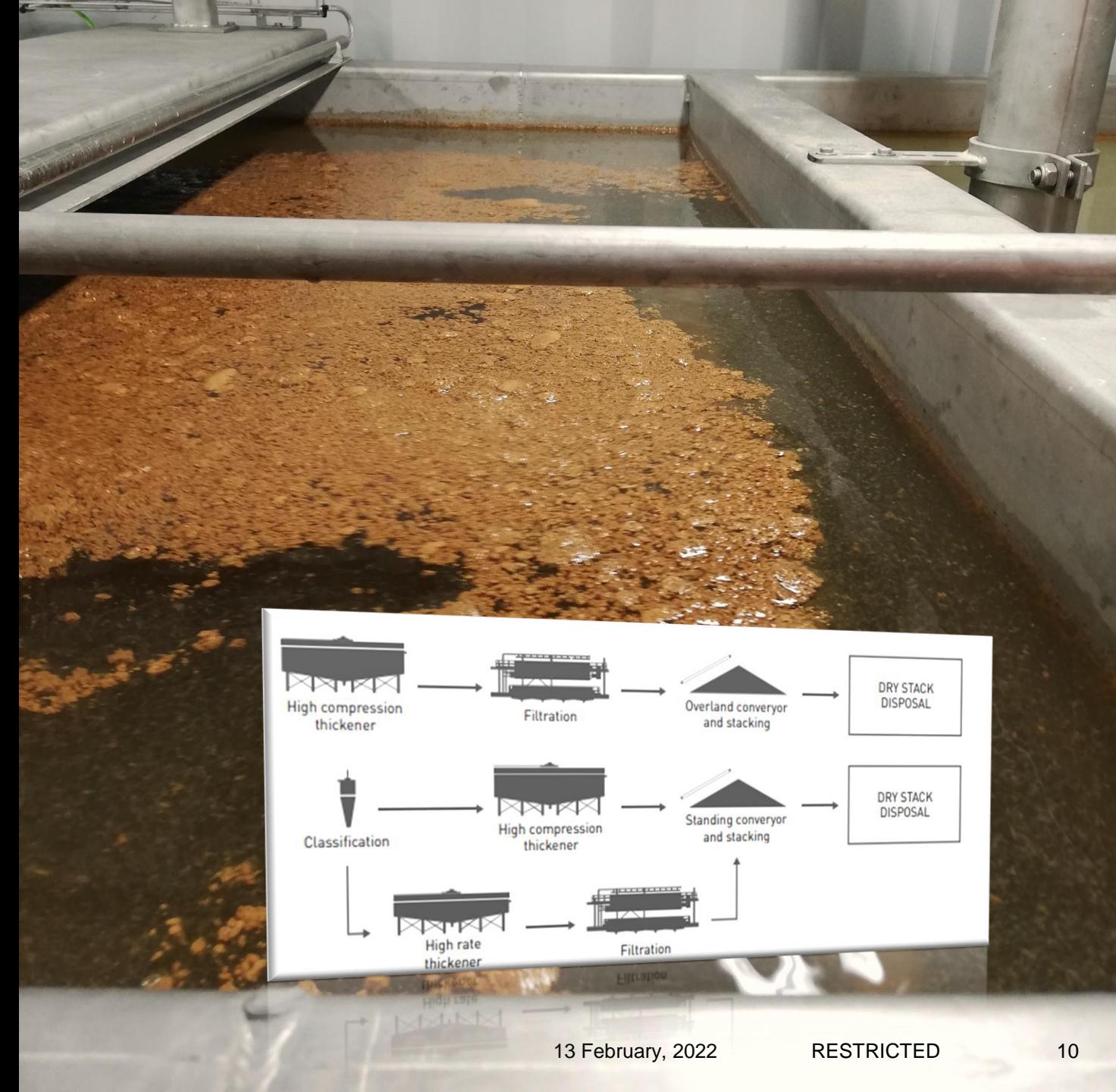
Mahdollistaa 99%
paikallisen tuotannon

Vesitehokkuuden kasvattaminen

veden erottaminen
rikastushiekasta ja
rikastushiekan
läjittäminen kuivana

Metallurgisen suorituskyvyn
mahdollistavat suljetut
vesikierrot + käsittely

Raakaveden käytön minimointi
($1 > 0.1 \text{ m}^3/\text{malmitonni}$)



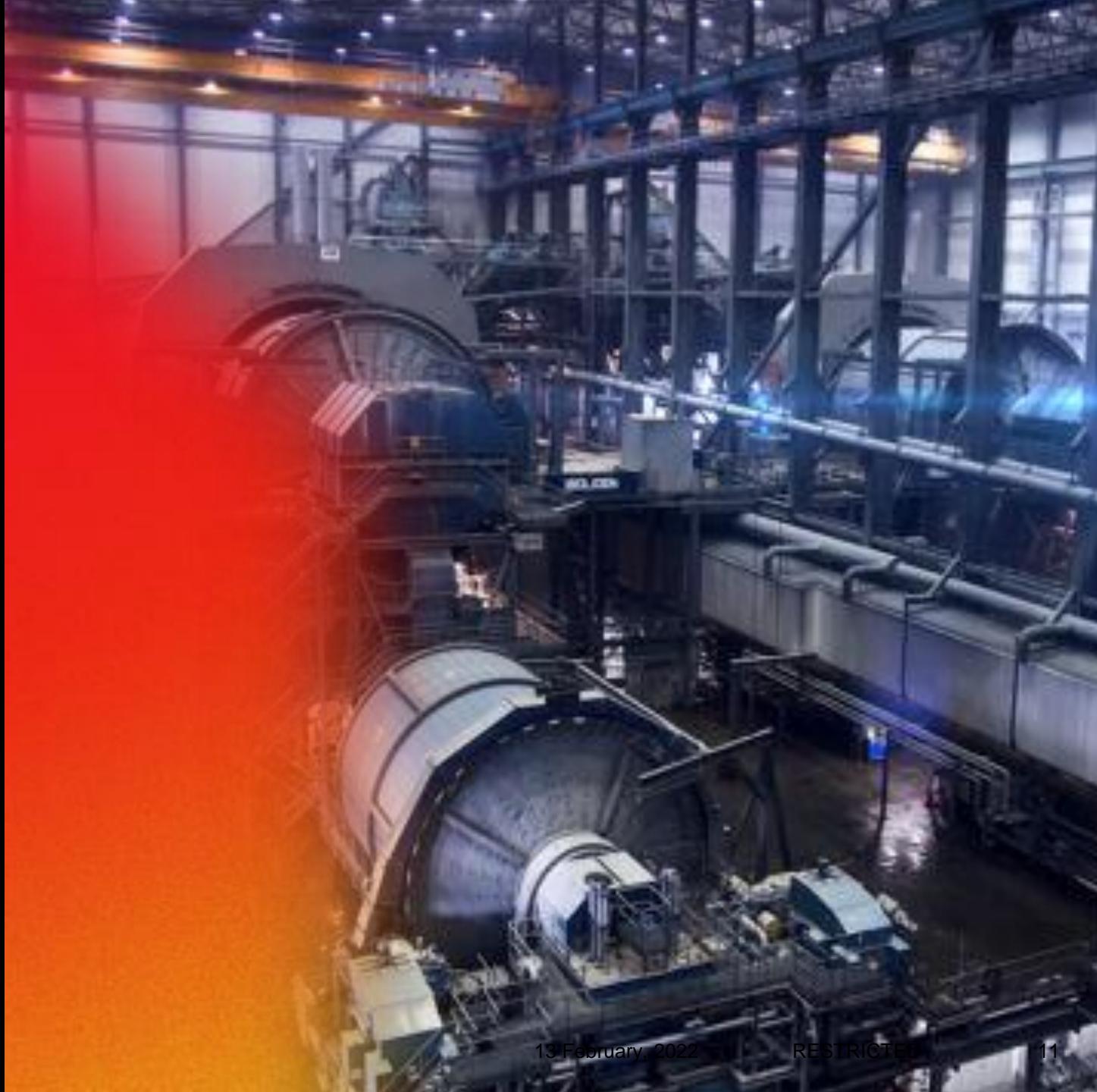
Murskaus- ja jauhatusenergian optimointi

Planet Positive
-tuotteisiin lukeutuvat
stirred mill -teknologiat:

Vertimill®, HIGmill™, and
stirred Media Detritor (SMD)

Todistetusti
energiatehokkaampia
markkinastandardiin verrattuna

10-40% parempi
energiatehokkuus





Partner for positive change