BeltWitch®

Magically clean belt conveyor

RECA plastics

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BeltWitch®

The challenge

Revolutionizing transportation

At beltWich, we're redefining belt cleaning.
Conveyor belts using advanced high-pressure belt cleaning technology. Our solution ensures a consistently clean return belt, eliminates dust emissions along the entire conveyor belt, and reduces wear and tear on the components.
key mechanical components. By combining a robust unit
stainless steel cleaning, water blade technology
With high pressure and an integrated polyurethane scraper system, we achieve maximum cleaning efficiency and minimize maintenance and operating costs. The result is a cleaner, safer, and more reliable transport process.
that promotes long-term performance and operation sustainable.

BeltWitch GmbH

ÿ Founded in 2026 by mining professionals and a leading polyurethane manufacturer in Germany.
ÿ BeltWitch is based on a real-world problem.
ÿ The staff has decades of experience in mining. ÿ Flexible, medium-sized German company.
ÿ Engineering and manufacturing in Germany.

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BeltWitch

The situation

Conventional methods are no longer sufficient, for example, with worn belts, sticky or cohesive materials, or fully encapsulated conveyor modules. Under these conditions, dust becomes a major problem: internal data shows that around 55% of the dust on conveyor belts comes from the transported waste, impacting safety, compliance with environmental regulations, and working conditions. Therefore, BeltWitch is applied when an automated, PLC-integrated, high-pressure cleaning system is needed that can handle mine water, operate reliably in harsh environments, and significantly reduce dust, material loss, and maintenance effort.

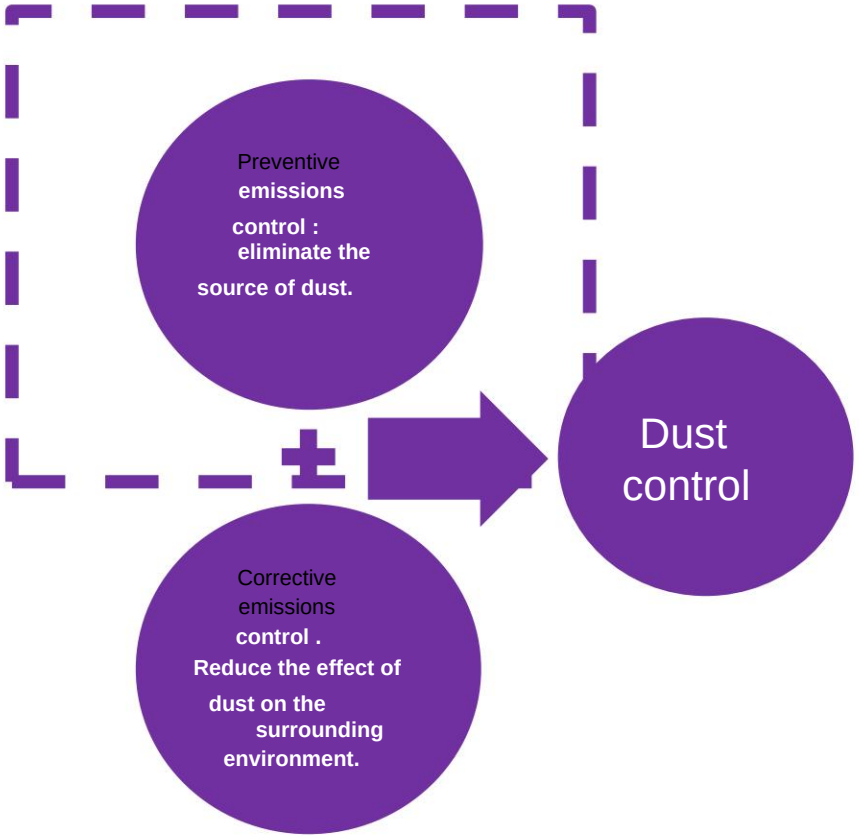
Example of an 1800 mm conveyor belt in Chile

Material loss: 3000 t/a.

Low equipment availability.

High cleaning and maintenance costs.

Employee health problems.



Dust control:

Effective dust control must address two issues important:

- Emission control, preventative through the elimination of the source of dust .
- Immission control, corrective through the reduction of the effect of dust in the surrounding environment.

Emissions control

through the elimination of the

A dust source should always be the preferred option, since which is, by far, the most effective and economical way to combat dust emissions fugitive.

WHAT'S AT STAKE

Massive loss of material at the transfer station

Employees work in very environments dusty using respirators.

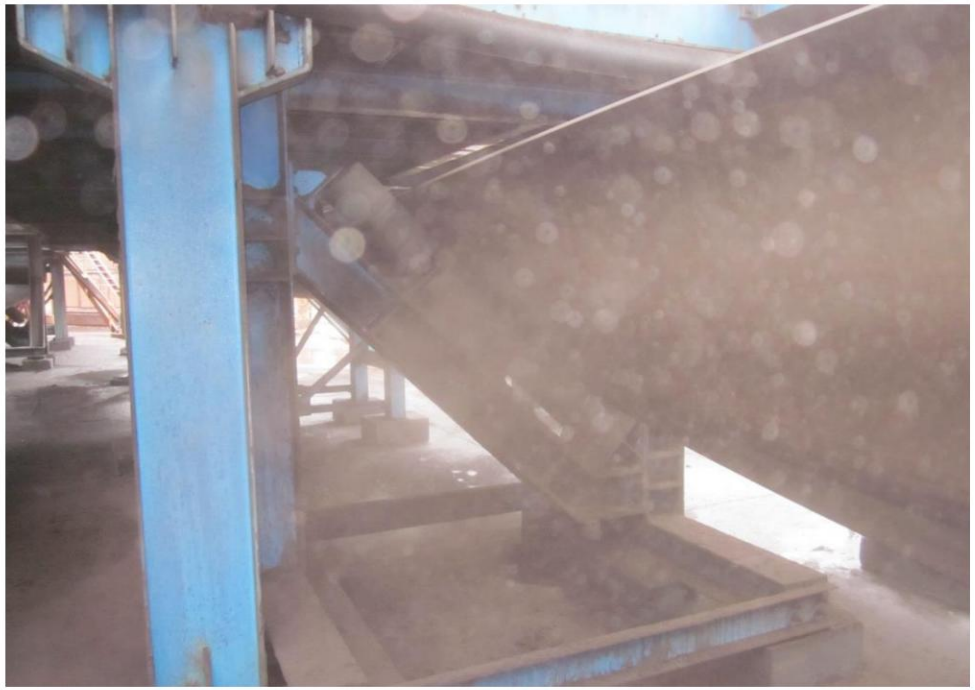
The return cable moves over Carryback, not on pulleys.

Headpulley is "grinding" more ore.

WHAT'S HAPPENING

Massive contamination of CarryBack

CarryBack problems with the strap rotation



WHAT'S NEXT

CONVEYOR SYSTEMS

Root cause:
Sealed insufficient of the stations
of straps.

1

Transferstations are causing
Ø 45% of the dust emissions

Root cause:
Transfer

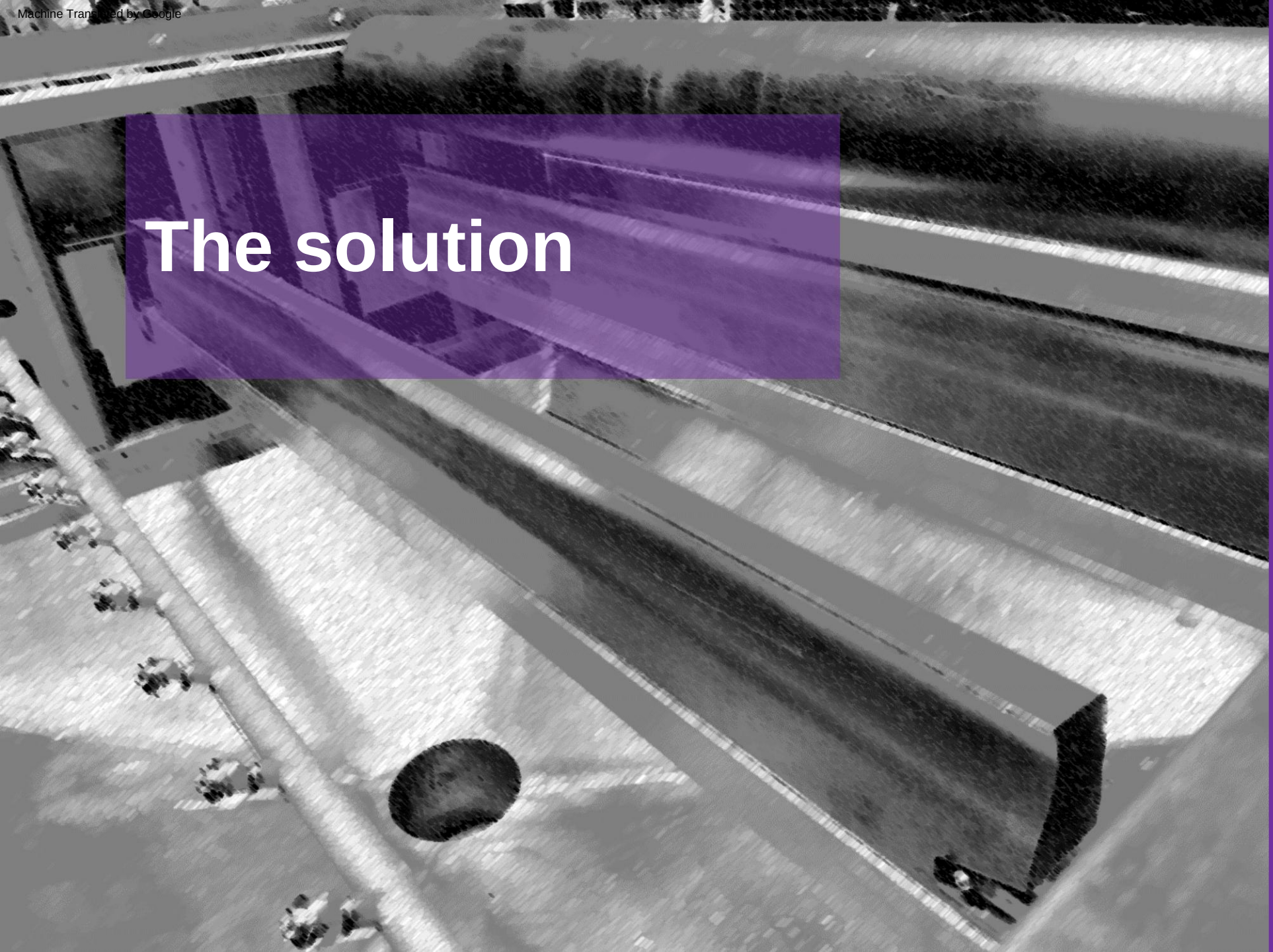
2

Return strand idlers are causing Ø 35% of the dust emissions

Root cause:
Transfer

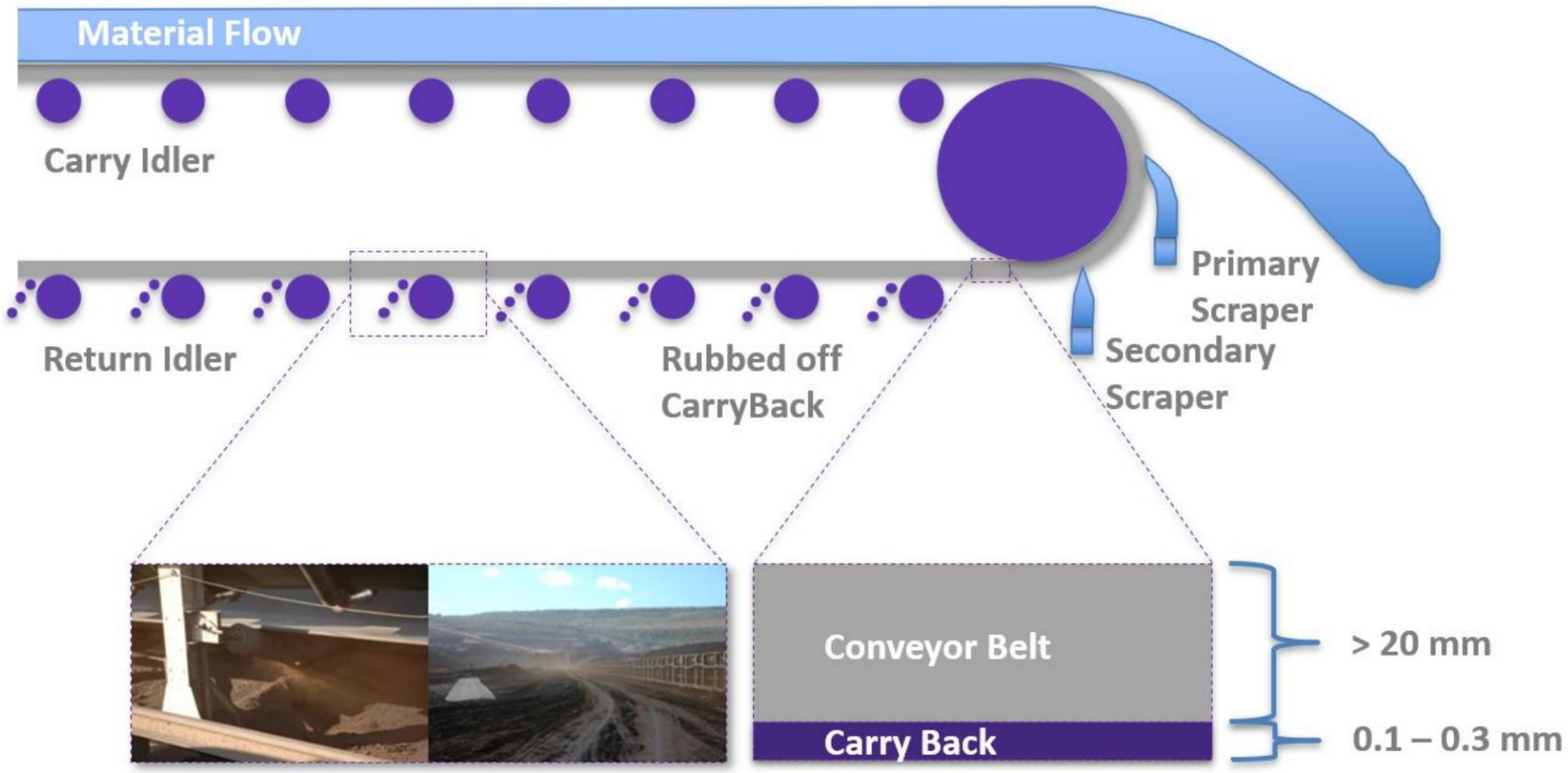
3

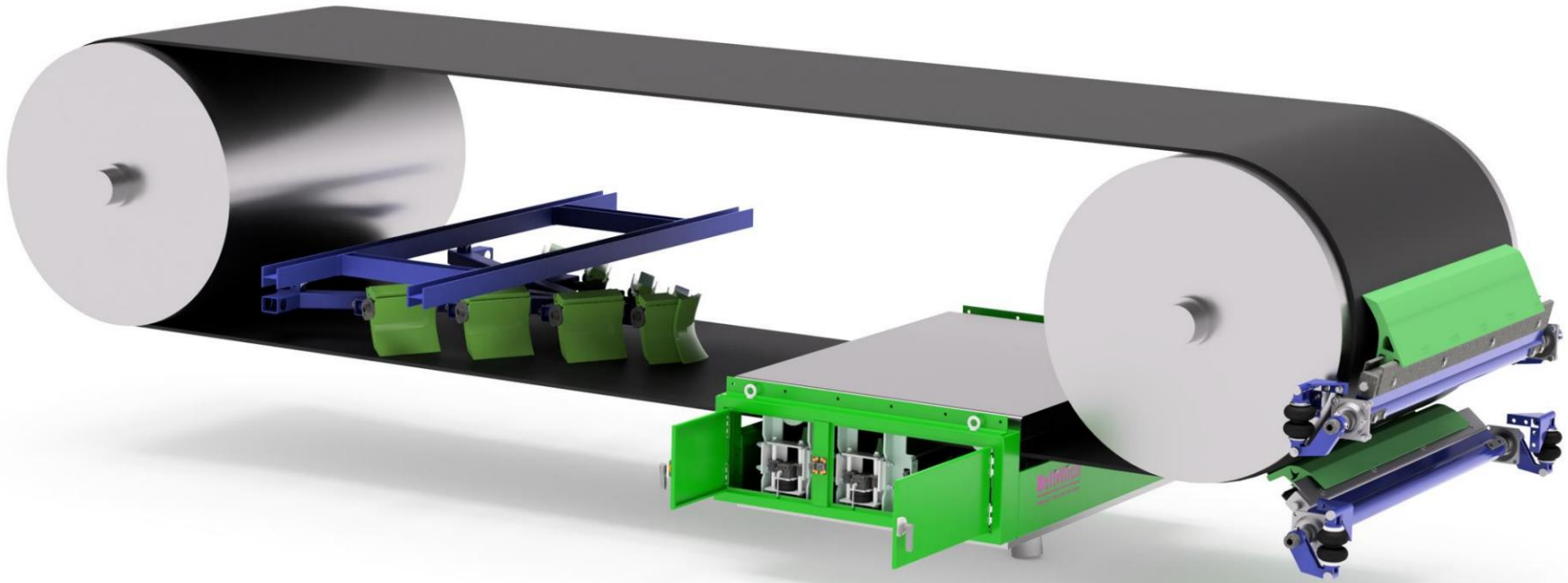
Conveyor Belt Pulleys are causing Ø 20% of the dust emissions

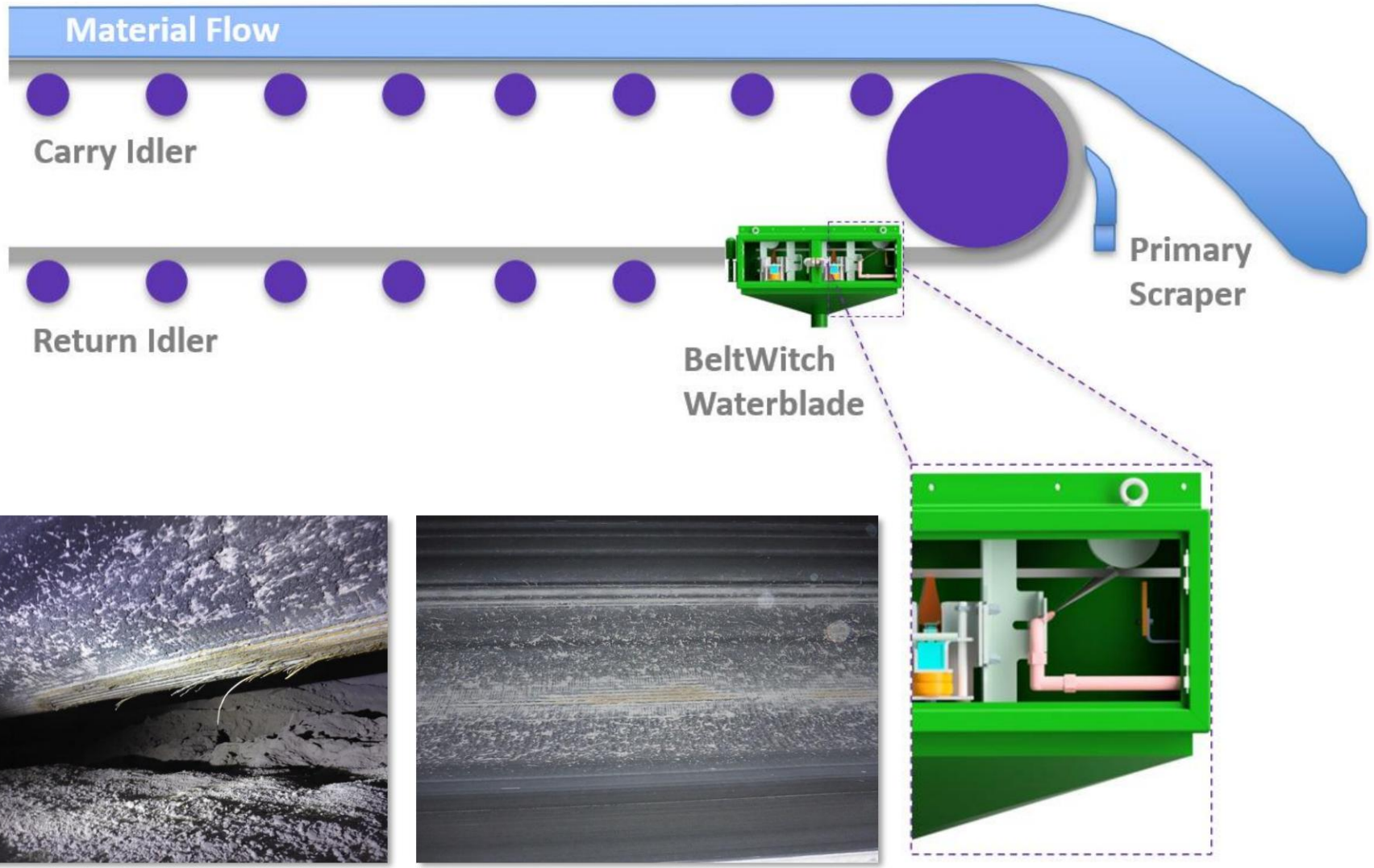


The solution

BeltWitch







BeltWitch Concept

High-pressure conveyor belt cleaning to ensure a return chain

always clean.

Prevention

The dust emissions and spills in the modules conveyors.

Modular

Scalable units for different tape widths and easy integration.

Compatibility Suitable for all major transport systems.

Service model

Business model of

Low risk with proven performance in the field.

Platform independent . PLC-ready integration (Siemens, ABB, Rockwell, Mitsubishi).

RWE

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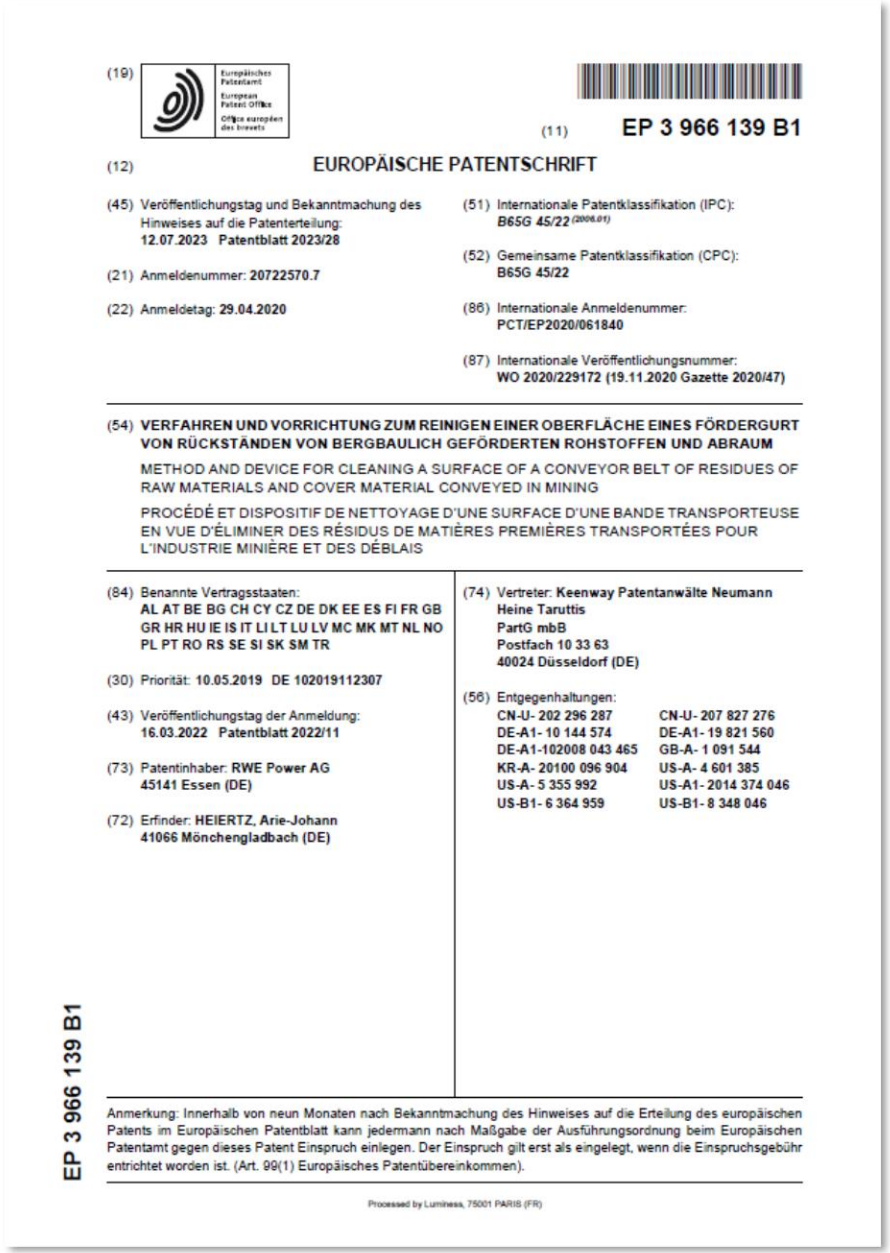
The



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METHOD AND DEVICE FOR CLEANING A SURFACE OF A CONVEYOR BELT OF RESIDUES OF RAW MATERIALS AND COVER MATERIAL CONVEYED IN MINING

PROCÉDÉ ET DISPOSITIF DE NETTOYAGE D'UNE SURFACE D'UNE BANDE TRANSPORTEUSE EN VUE D'ÉLIMINER DES RÉSIDUS DE MATIÈRES PREMIÈRES TRANSPORTÉES POUR L'INDUSTRIE MINIÈRE ET DES DÉBLAIS

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DE-A1- 10 144 574	DE-A1- 19 821 560
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KR-A- 20100 096 904	US-A- 4 601 385
US-A- 5 355 992	US-A1- 2014 374 046
US-B1- 6 364 959	US-B1- 8 348 046

Anmerkung: Innerhalb von neun Monaten nach Bekanntmachung des Hinweises auf die Erteilung des europäischen Patents im Europäischen Patentblatt kann jedermann nach Maßgabe der Ausführungsordnung beim Europäischen Patentamt gegen dieses Patent Einspruch einlegen. Der Einspruch gilt erst als eingelegt, wenn die Einspruchsgebühr entrichtet worden ist. (Art. 99(1) Europäisches Patentübereinkommen).

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The

RWE Technology International

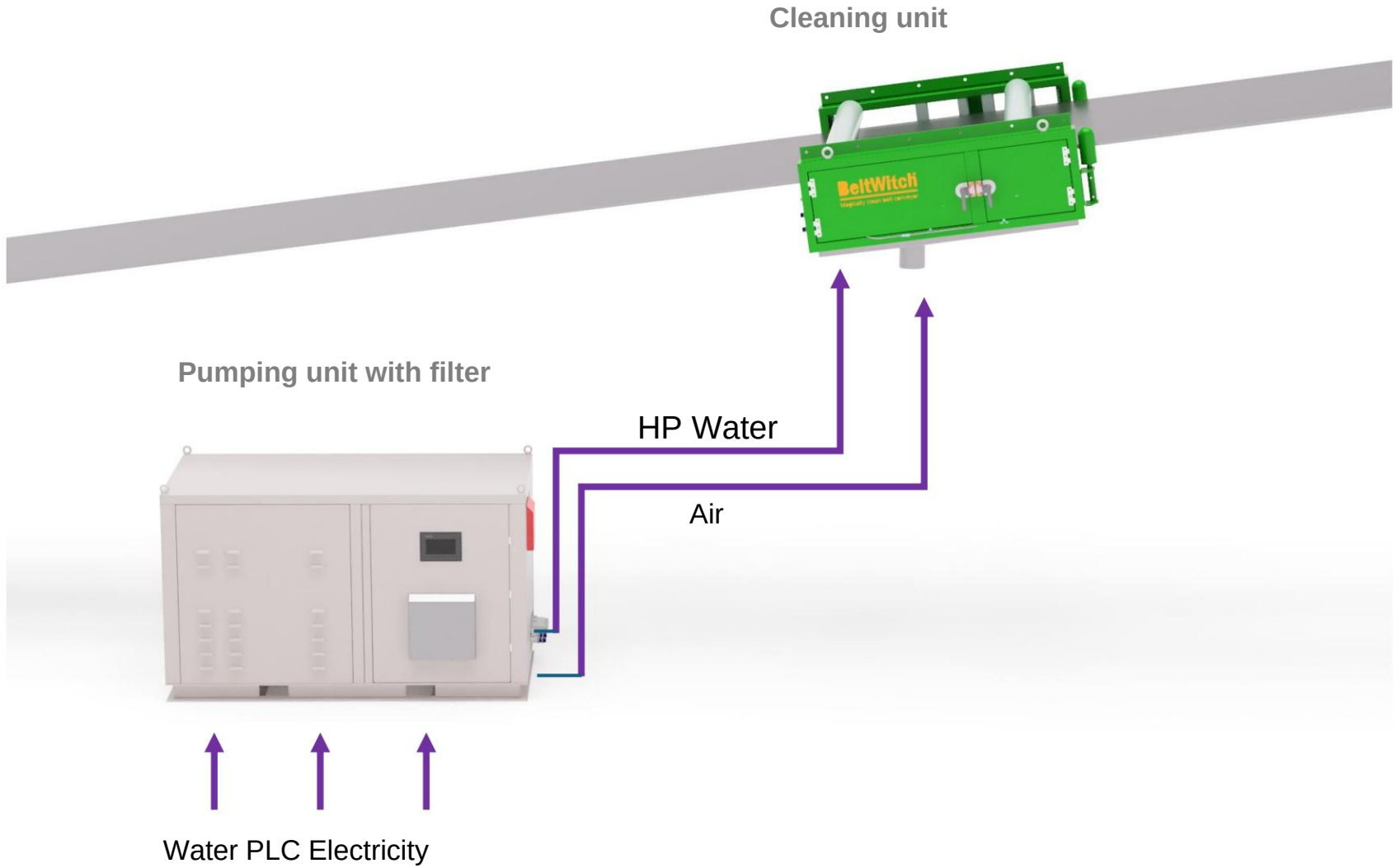
CERTIFICATE

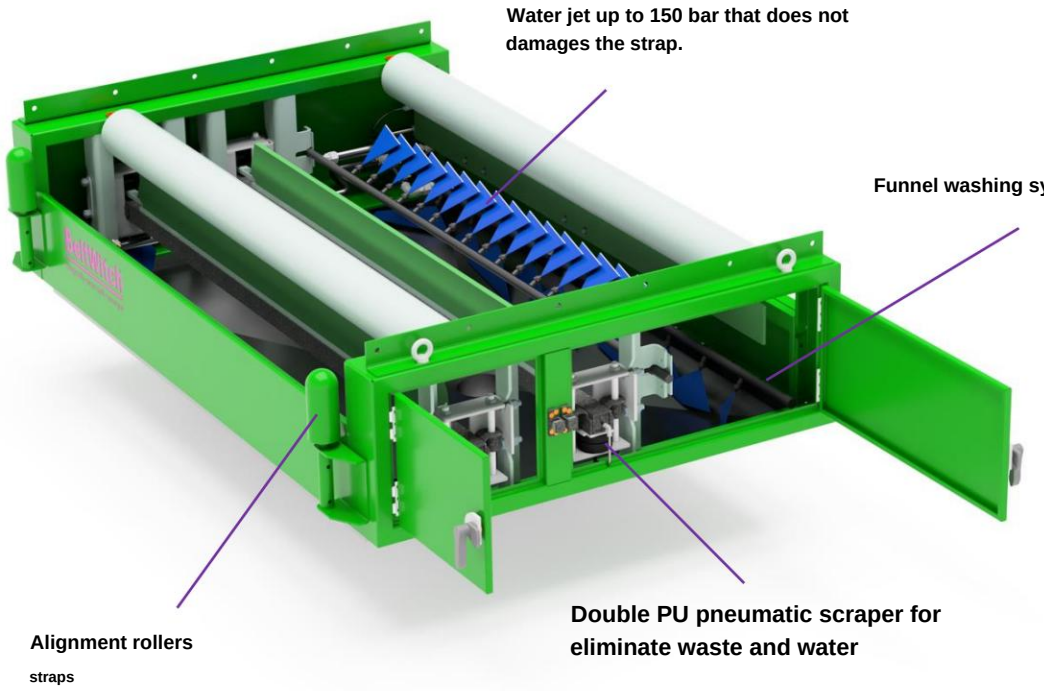
BeltWitch® - High Pressure Conveyor Belt Cleaning System

Client: Vale S.A., Tubarão Port Operations

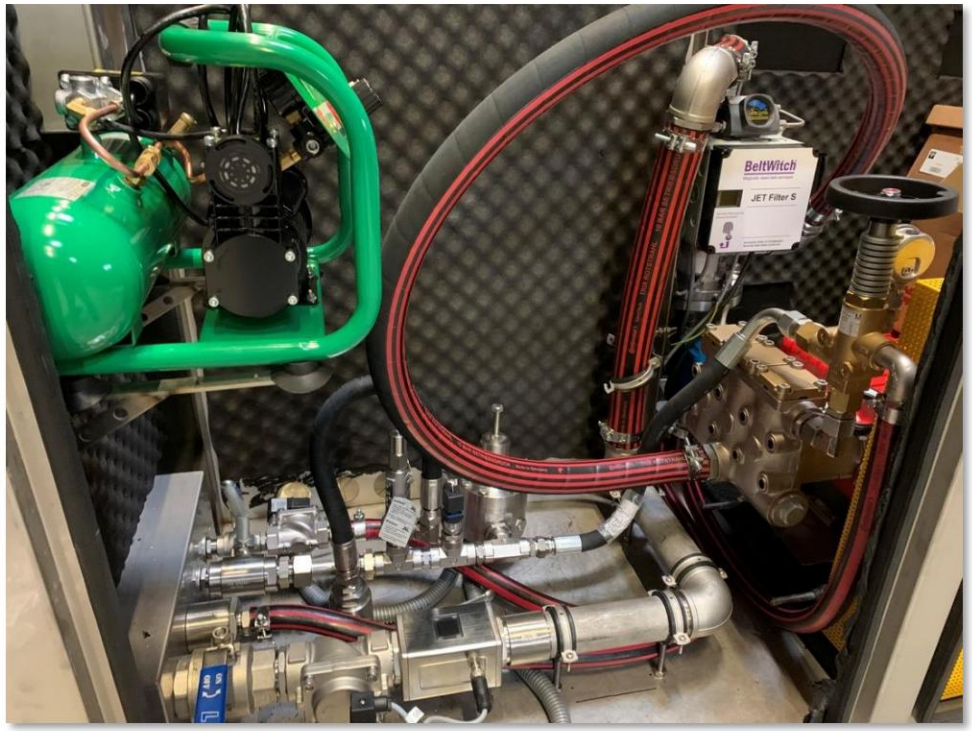
Date: 09th January 2020

RWE





Cleaning

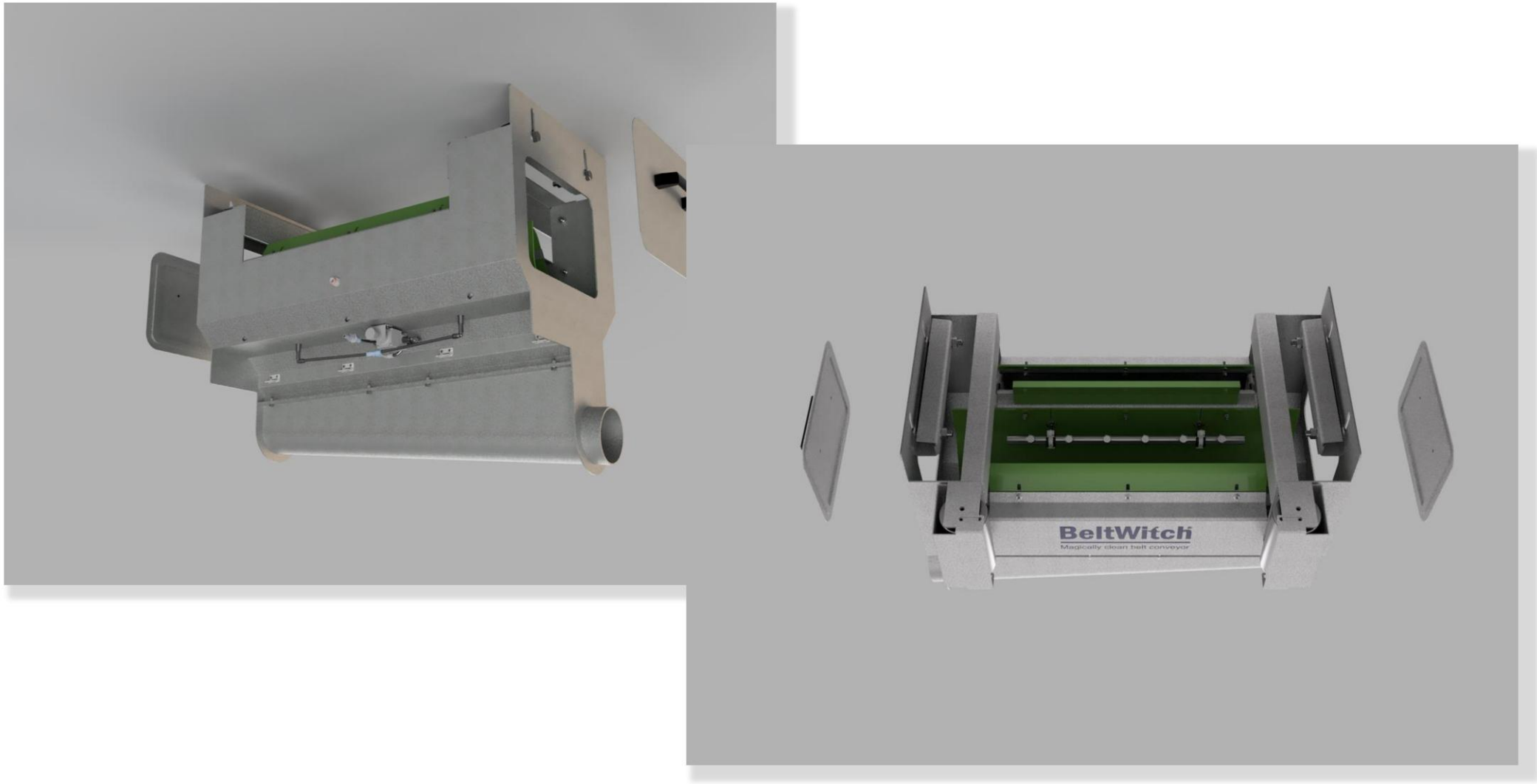


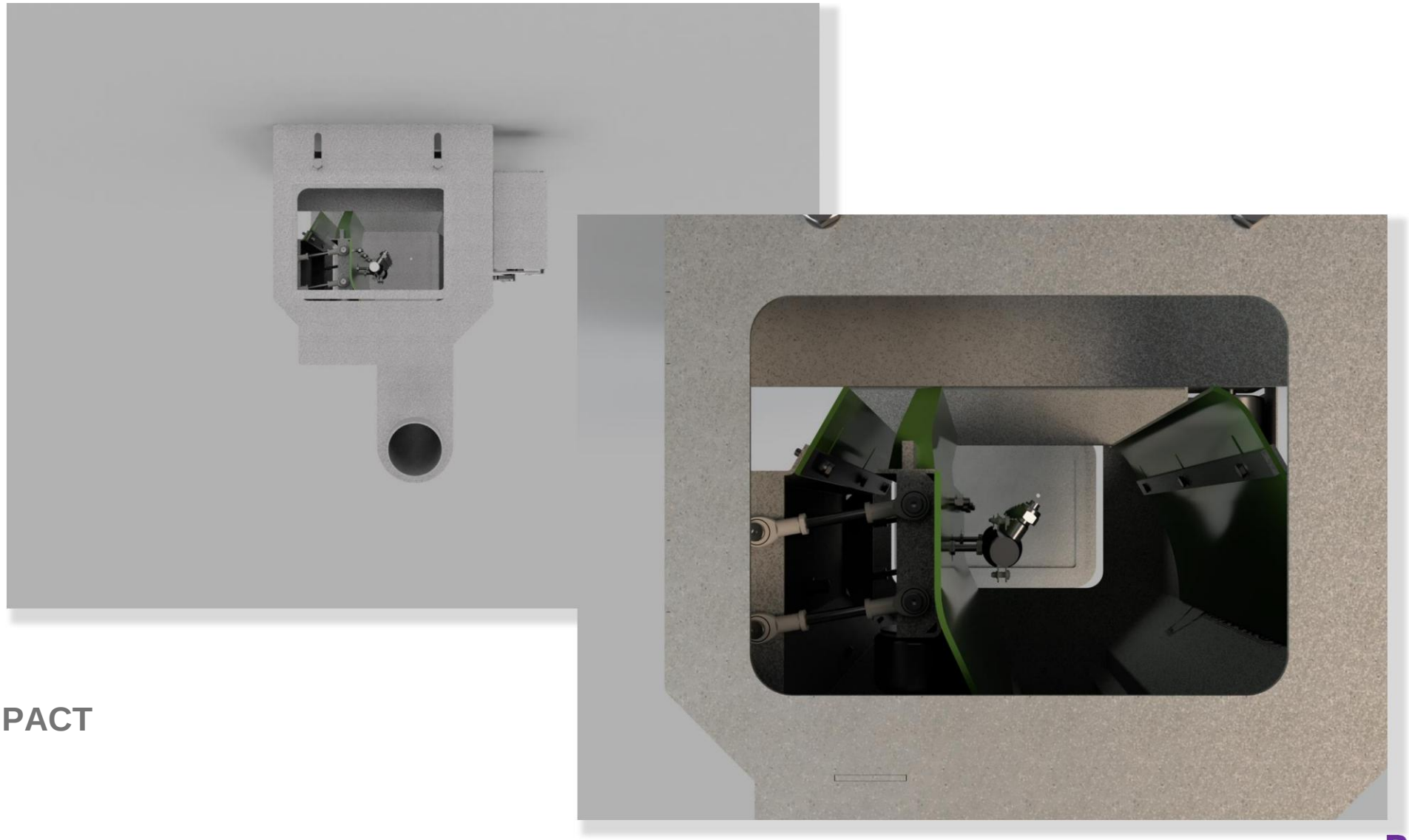
Unit **pumping**

BeltWitch Models *	BWB 1200	BWB 1400	BWB 1600	BWB 1800	BWB 2000	BWB 2200	BWB 2400	BWB 2800
Belt Width [mm]	1200	1400	1600	1800	2000	2200	2400	2800
Water Consumption [m^3/h]	3,91	4,69	5,47	6,26	7,04	7,82	8,6	9,77
Water Consumption [m^3/h] Water Saving	2,42	2,91	3,39	3,88	4,36	4,85	5,33	6,06
Number of Nozzles	10	12	14	16	18	20	22	25
Operating Pressure [bar]	150	150	150	150	150	150	150	150

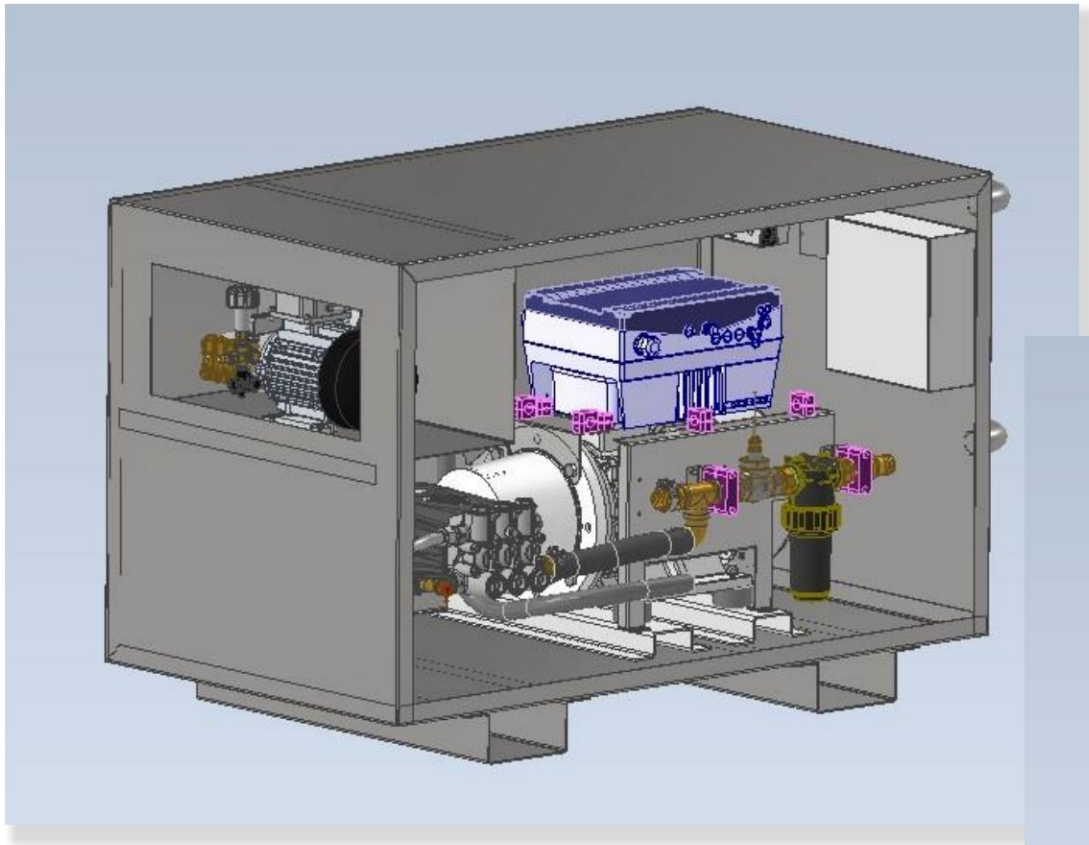
Cleaning

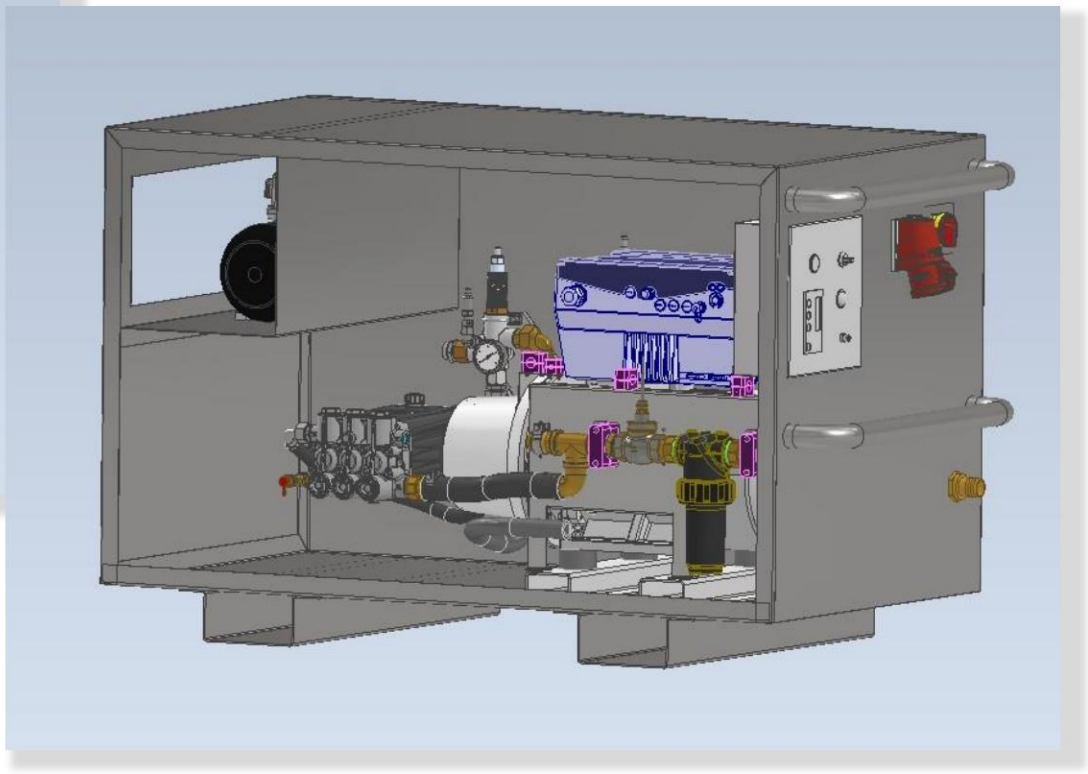
** not all models are shown here. Special applications depending on client demand. * depending on conditions with 150 bar.





NEW COMPACT





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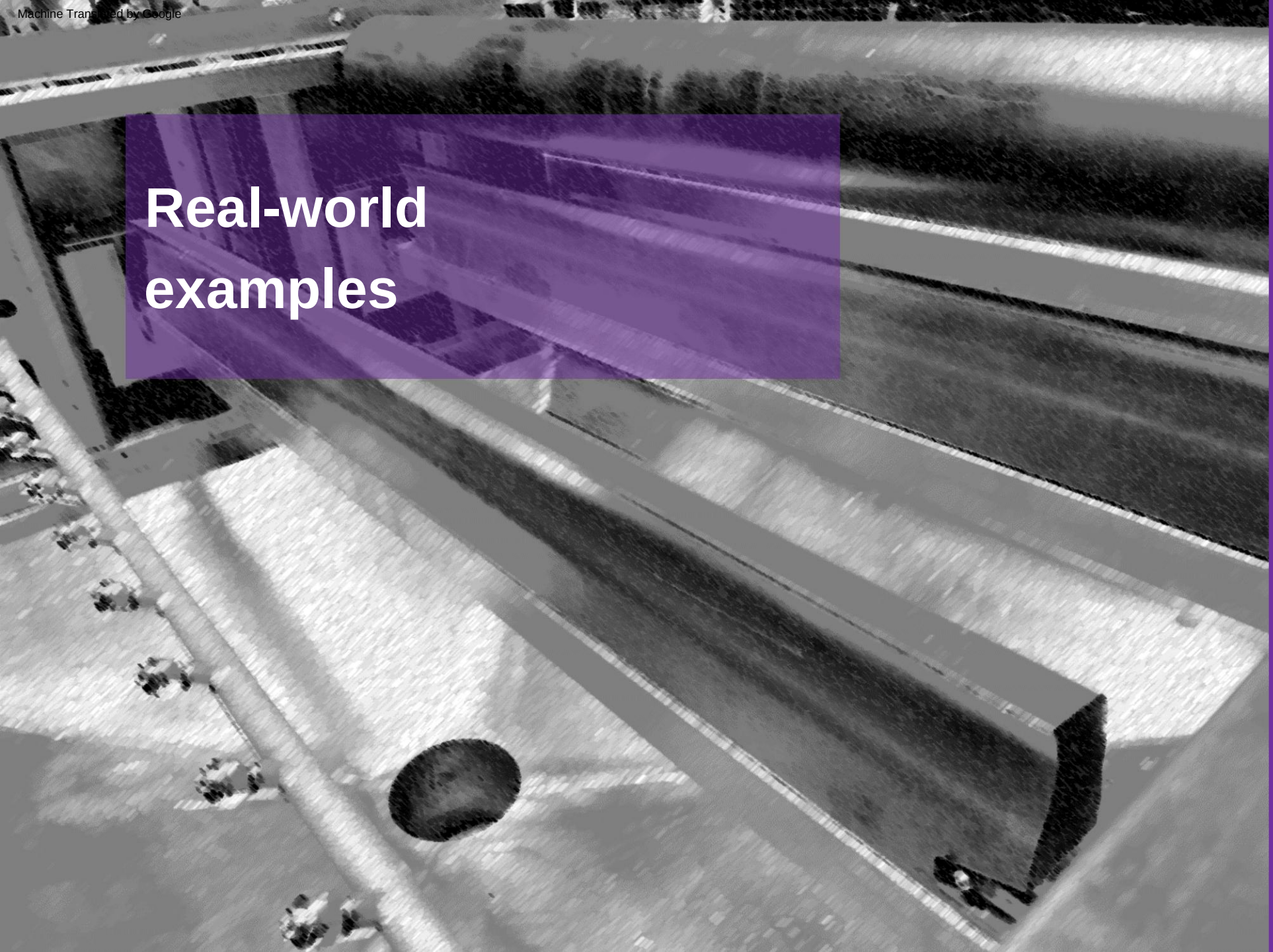

Real-world examples

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OK, Brazil
Iron ore

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EPTL, Pakistan Coal

EPTL, Pakistan Coal

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Cleaning with water and return on investment

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Calculation of copper mineral transport

Entrance

Strap width	1,800mm
Free belt edge	200mm
Cleaning width Rear	1,400mm
conveyor height Belt speed	0.01mm
	4.5 m/s
Apparent density	2.2t/m³
Time/Day	18h
Days/month	30d
Days/year	306d
Hours/year	5508h
Hours/Cleaning Stopps	8pm
Nominal capacity of the conveyor	10000t/h
Copper price	9850€/t
Mineral price	€57.6225/t
Electricity price	0.12€/kWh

Results

Quantity of material m³/s	0.000014m³/m
	0.000063m³/s
t/s	0.000139t/s
t/h	0t/h
t/8h change	4t
tons/day tonnage/	9t
month tons/year	269t
	2748t

BetWtich Investment		TO BE DEFINED €
Electricity costs		€14,541
operating costs / a		€25,000
Water treatment / mineral recovery		€100,000
Subtotal.	VALUE WITHOUT EQUIPMENT COST	€139,541
Costs of a 10 km conveyor belt		25M €
20% reduction in maintenance due to cleaning.		€200,000
Mineral recovery		€158,362
Greater availability of equipment		€11,524,500
Reduction of cleaning costs		€350,000
Total		€12,232,862
Cost reduction per day of operation		€39,977

ROI

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