

**We  
move  
people.**

**REPORT  
2022**

**HTI** 

# Think Ahead

We move people and shape the future with future-oriented technologies, resource-saving innovations, and high-quality product design. A strategy that's given us global success.



# Driving Force: High Technology Industries



Rope-powered passenger transport systems for use on mountains and in cities

Page 8 – 19



Rope-powered passenger transport systems for use on mountains and in cities

Page 20 – 31



Rope-powered passenger transport systems for use on mountains and in cities

Page 32 – 37



Material transport systems

Page 38 – 41



Snow grooming, tracked, and vegetation management vehicles

Page 42 – 53



Complete solutions for fully automatic technical snowmaking

Page 54 – 59



Open digital resort management platform

Page 60 – 63



Gearless wind turbines in the megawatt class

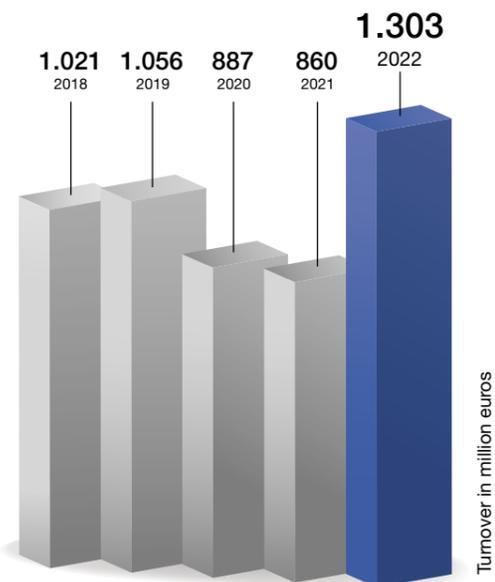
Page 64 – 67

# Building Strengths

## Turnover

Group turnover was € 1,303 million in 2022

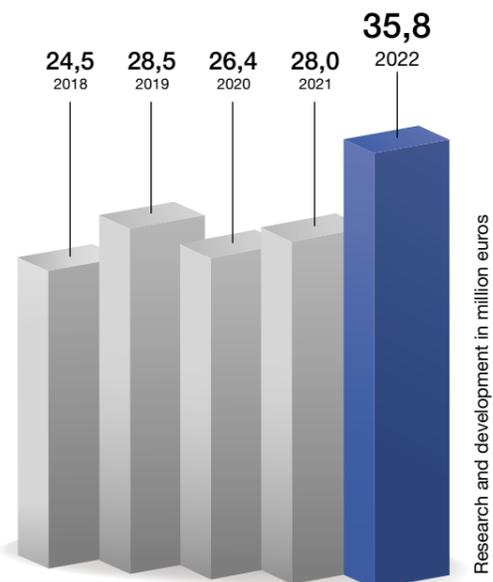
- 97 Ropeway systems
- 13 wind turbines
- 1,143 snow grooming, tracked, and vegetation management vehicles
- 2,000 snow guns



## Research

Technological innovation is in our Group's DNA. Which means our R&D investments are considerable. In 2022 they totaled € 35.8 million.

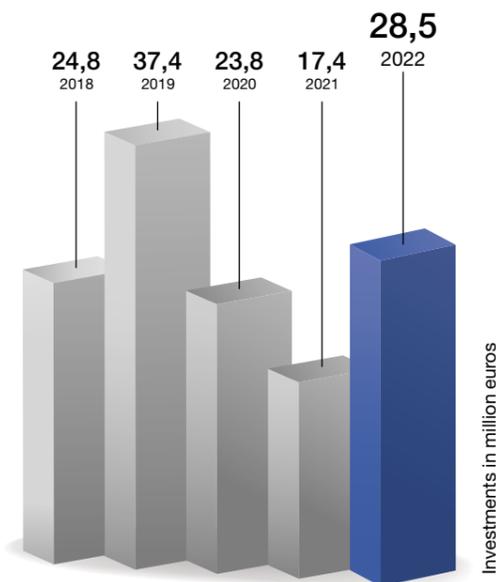
- Ropeway systems: further development of detachable stations and development of ConnX hybrid solution
- Snow grooming, tracked, and vegetation management vehicles: Product improvements and development of the existing product portfolio, such as LEITWOLF h<sub>2</sub>MOTION, RAPTOR 100, RAPTOR 200 and T-REX; market launch of the electric HUSKY eMOTION
- Snowmaking: Development of The Ghost, E-Tower, Ventus 4.0 Blizzard, and C150 Premium
- Wind turbines: Optimization of the LTW90



## Investments

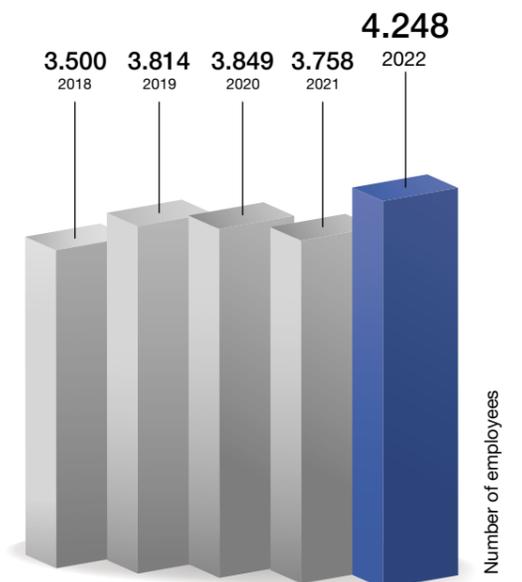
Our Group expanded its capacities and network in 2022 with investments of € 28.5 million, which helped strengthen our global market position.

- Expansion at the company headquarters in Herdwangen, Germany, Starà L'ubovna, Slovakia, Oslo, Norway and Chennai, India
- Swiss ropeway company Bartholet incorporated into the Group



## Employees

In 2022, the Group employed 4,248 people worldwide.



# Trending All Year Round

**LEITNER®**

Despite another year full of challenges, LEITNER made it very clear that it has its finger firmly on the pulse. Central to this was the way the company focused on technological innovation in the area of sustainability, as best demonstrated by all the exciting projects completed last year throughout the world. On the mountain or in the city, customers continued to demand environmentally friendly and economical products in 2022, which brought LEITNER's successful in-house developments even more to the fore. One example is the LEITNER DirectDrive, which is already well established as the industry leading drive system in new ropeways and is being retrofitted to many existing ones. LEITNER's new EcoDrive epitomizes the manufacturer's strategic and operational determination to continue consistently on the path to sustainability and climate neutrality. More and more alpine ropeways are being used in the summer season, which means utilizing existing infrastructure more efficiently. The LEITNER bicycle holder is an innovative, convenient system which accommodates this leisure trend perfectly. LEITNER's patented ConnX® mobility system has been progressing well and should be ready for the market in the next two years.





ITALY – CAMPO TURES

## Flying High

The new CD8C “Seenock” chairlift is a visible symbol of Speikboden ski resort’s modernizing and upgrading ambitions. LEITNER has replaced its 30-year-old 4-seater chairlift with a modern 8-seater chairlift. The new chairlift uses the existing route and features LEITNER DirectDrive, premium leather seats, weather protection bubbles, and seat heating. The modern station has been designed by Italy’s renowned Pininfarina studio. The new ropeway increases capacity to 3,400 passengers per hour, brings the journey time down to just four minutes, and gives easy access to the various slopes of this family-friendly ski resort, the highlight of which is the almost five-mile-long valley run with 1,450 meters of descent – one of the biggest drops in South Tyrol’s skiing world.

LEITNER developed a tailored solution for Speikboden AG’s new ropeway in the planning phase. The idea for using the chair magazine was what clinched the deal, allowing the operator to adapt the existing one and save money.

### CD8C Seenock

Inclined length (total):	_____ 1,192 m
Vertical difference:	_____ 294 m
Drive power:	_____ 679 kW
Carrying capacity:	_____ 3,400 p/h
Number of towers:	_____ 11
Number of chairs:	_____ 65



# Three In One

In 2022, Axamer Lizum set about modernizing things comprehensively with a view to sustainability and more comfort. At the former Olympics venue close to the state capital of Innsbruck, a new gondola lift was built over two sections with an impressive top station, which was placed right next to the existing Hoadlhaus. The new Hoadlbahn replaces with the CD4 “Schönbodenbahn” and the two fixed 2-seater chairlifts “Hoadl I” and “Hoadl II”, three ropeways at the resort, reducing the number of towers from 44 to 18. LEITNER’s DirectDrive has made an important contribution to even more sustainability, less maintenance, and maximum noise reduction. The new system will carry passengers from the parking lot to the highest point in the resort in just six minutes.

75 spacious Diamond EVO cabins offer ultimate passenger comfort and an all-round view of the surrounding mountains and into the Inn Valley.

GD10 Hoadlbahn	I	II
Inclined length (total):	1,185 m	950 m
Vertical difference:	422 m	356 m
Drive power:	794 kW	529 kW
Carrying capacity:	2,800 p/h	2,800 p/h
Number of towers:	10	8
Number of cabins:	40	35



Riyadh, SA



# Connecting Worlds

Since 2019, the “Boulevard” has been one of Riyadh’s most spectacular leisure attractions. The metropolis of eight million people, the capital and financial center of Saudi Arabia, is focusing intensively on economic and tourist revitalization with the mega-project and the Riyadh Season festival and has recently expanded the area with the Boulevard World. Entirely based on the model of Las Vegas, the Boulevard World is to become the new entertainment hotspot of the desert city. A 10-passenger gondola lift from LEITNER is being used for comfortable and rapid transport between this new area and Boulevard Riyadh City.

The ropeway starts at the parking lot to the north of Boulevard Riyadh City, flies over a wide road and then

leads into Boulevard World, where the ropeway station has been embedded in the impressive Greek landscape of Santorini. The gondola lift runs over a distance of 1.2 kilometers and reaches a maximum transport capacity of 2,808 people per hour.

GD10 Boulevard	
Inclined length (total):	1,128 m
Vertical difference:	5 m
Drive power:	441 kW
Carrying capacity:	2,808 p/h
Number of towers:	8
Number of cabins:	40

# Driving Ahead

## ITALY – AT THE CUTTING EDGE

The new 10-passenger gondola lift at Monte Cavallo in Vipiteno has replaced the 6-passenger gondola lift that began operation back in 1987. This ropeway is driven by the eco- and maintenance-friendly LEITNER DirectDrive and is equipped with new Diamond EVO Premium cabins. At the Alpe di Siusi, Speikboden, and Breuil-Cervinia-Valtournenche ski resorts, LEITNER replaced existing systems with ultra-modern, ultra-comfortable chairlifts with weather protection bubbles.

Modern upgrades have also been the order of the day at the Via Lattea ski resort on the border between Italy's Piemonte region and the French region of Provence-Alpes-Côte d'Azur, where the CD6 "Cit Roc" chairlift has been built. LEITNER also built a fixed-grip four-seater chairlift at San Martino di Castrozza and two surface lifts at the Passo Oclini and 3 Zinnen Dolomites ski resorts.



Alpe di Siusi, IT



## AUSTRIA – NEW HIGHLIGHTS

In the skiing hotspot of Tyrol, three new LEITNER installations opened this year's winter season alongside the GD10 "Hoadlbahn". The new CD8C "Kapaunsbahn" in Zell am Ziller replaced an existing ropeway in the Zillertal tourism region, while the new "Hornbahn 2000" 6-seater chairlift was completed at Ski Juwel Alpbachtal Wildschönau. LEITNER also built the highest ropeway system in East Tyrol in the Deferegggen Valley: the CD6C "Leppleskofelbahn".

LEITNER constructed the new GD10 "Galsterberg" gondola lift in the Schladming-Dachstein region; in the Murtal and Pyhrn-Priel holiday areas, two new 10-passenger gondola lifts heralded the arrival of the latest ropeway technology at the beginning of the winter season. Timed to coincide with 50th anniversary celebrations, the Telemix ropeway on Rittisberg in Styria boosted performance significantly. With its 3-in-1 technology, the TMX6-10 "Rittisbergbahn" can be operated as a gondola lift, a chairlift, or a combination of both.



### FRANCE – SPEEDING THINGS UP

The La Forêt Blanche ski resorts connects the two French winter sports venues of Vars and Risoul in the Briançon arrondissement. Surrounded by the peaks of the Ecrin massif, Ubaye valley, and Queyras national park, this winter sports area offers stunning views combined with every variety of snowy fun. The new CD6 “Vars Speed Master“ and the CD6 “La Mayt“ have given its ropeway infrastructure a much-needed upgrade.

These two chairlifts have replaced two predecessors, each with four seats. Not only have they made journeys faster, they also mean more people can travel. The new CD6 “Les Nants” 6-seater chairlift at the Saint Gervais ski resort replaced the Arbois fixed-grip 2-seater lift built in 1977, again significantly reducing travel times and boosting comfort.

### SWEDEN, NORWAY AND FINLAND – SKI & BIKE

LEITNER ropeways are becoming more popular than ever in the north, where there have been twelve new installations.

The new GD10 “Sydgondolen I + II” 10-passenger gondola lift is equipped with LEITNER DirectDrive, placing the emphasis squarely on sustainability at the Swedish ski resort of Idre Fjäll. This ropeway will remain open all year round and will offer bike transport in summer.

The CD6 “Snöberget Direkt” 6-seater chairlift is already LEITNER’s sixth installation at the central Swedish ski resort of Romme Alpin, close to Stockholm.

A comfortable ropeway for year-round use was also erected at the well-known Swedish World Cup venue of Åre. The CD6 “Stjärnliften” features holders for four bikes each, facilitating cycling excursions during the

summer months. In the Norwegian ski resort of Voss, the new CD6C “Trastølheis” 6-seater chairlift has replaced a fixed-grip chairlift which was built back in 1968. A modern 6-seater chairlift from LEITNER has also been built in the Vassfjellet – Klæbu family ski area south of Trondheim. The CD6 “MIDT-Expressen” has a capacity of 2,600 passengers per hour. It’s LEITNER’s seventh ropeway in this snow-sure resort.

LEITNER built the CD6 “Bitihorn Express” 6-seater chairlift along the summer bobsleigh course in the Norwegian town of Beitostølen this year. The Beitostølen Skisenter resort’s latest ropeway will provide top-quality transport all year round. Aside from engineering big ropeways in 2022, LEITNER built four surface lifts in Sweden, as well as one in Norway and one in Finland.



# 2023 Outlook

SWITZERLAND – ZERMATT

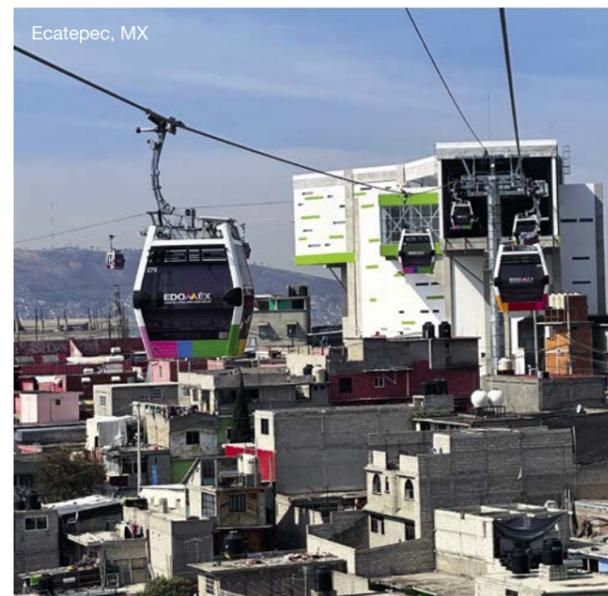
## Crossing the Alps

The new year promises a number of breathtaking projects. One of these is the TD28 “Matterhorn Glacier Ride II” in Switzerland. It’s a spectacular continuation of LEITNER’s successful work on the Klein Matterhorn, following the construction of “Matterhorn Glacier Ride I”. The new 3S system will create the highest continuous crossing of the Alps by ropeway, beginning July 2023.

MEXICO – MEXICO CITY

## Central Connection

The building of the last section of “Mexicable 2” and the opening of the 10-passenger “Linea Verde” gondola lift in April 2023 completes what is now a self-contained, high-performance ropeway system in Mexico City, delivering maximum efficiency and sustainability.



GERMANY – WARMENSTEINACH

## Twice as Good

Another major project is being built in Germany’s Fichtelgebirge. Aging chairlifts are being replaced by modern gondola lifts at Ochsenkopf. 2023 saw the beginning of construction work on GD10 “Ochsenkopf Nord”, while the south ropeway will be modernized in 2024. Equipped with spacious Diamond cabins, this ropeway will soon bring passengers quickly and comfortably up to Ochsenkopf in summer and winter, thereby also doubling transport capacity at the Fichtelgebirge’s biggest ski resort.



COLOMBIA – MANIZALES

## Urban Addition

Urban ropeways also have a long tradition in Colombia. Especially in Manizales, a municipality with more than 400,000 inhabitants in the department of Caldas, where two ropeway systems from LEITNER have been successfully integrated into the public transport system. A third ropeway is now being added.

AUSTRIA – KITZBÜHEL

## Sunny Times

LEITNER will be building highly sustainable chairlifts in Kitzbühel in 2023 in continuation of what is already a successful, long-established partnership. The company will be integrating its latest technologies to achieve minimum energy consumption combined with maximum operating efficiency. Kitzbühel’s new sustainable ropeway will be completed by photovoltaic panels on the station roof.

MONTENEGRO – KOTOR

## Sea Meets Mountain

In Montenegro, one of the world’s most spectacular ropeways will open in summer 2023, carrying its passengers from sea to mountain in just eleven minutes. Spanning a distance of 3.9 kilometers and 1,316 vertical meters, a LEITNER system will soon connect the UNESCO World Heritage Site of Kotor with Lovćen National Park. Constructing the ropeway will almost completely eliminate the use of the winding old Njeguš road, and that will significantly reduce carbon emissions from cars and buses because it will cut down motorized traffic to a minimum.

# Future Mobility



2022 was a successful year for POMA and one full of projects. In France, highlights included the opening of urban ropeways in Toulouse and Saint-Denis de La Réunion and the commencement of new urban projects such as the one in Ajaccio. In Latin America, five new ropeways were recently set up in Colombia and the Dominican Republic. These two countries have been sending out a clear signal: ropeways help to improve the quality of life for town-dwellers and they integrate perfectly into cities.

In the mountains, more and more stakeholders are joining forces to protect valuable, sensitive ecosystems. In Alpe d'Huez, for instance, ropeway mobility near to urban areas is part of a plan to sustainably develop the ski resort by providing a capable alternative to road transport.

Ropeway systems are increasingly becoming a key factor in blended, sustainable approaches. They provide access to high-altitude areas and can be deployed as an instrument in far-sighted regional development. New tourist facilities in Bhaleydhunga in India and Jiaozishan in China are perfect examples.

# World-First From One End to the Other

In 2018, the city of Santo Domingo decided to build a five kilometer long gondola lift in its north east, to connect to Line 2 of its metro system. The first gondola lift in the Caribbean is now delivering an average of five million rides each year. Building on this success, POMA was asked to build a second, 4.2 kilometer long line with four stations in the 400,000-population district of Los Alcarrizos in the north west of the capital. The gondola lift was inaugurated in Spring 2023 by the president of the Republic, Luis Abinader.

A total of 160 12-passenger cabins painted in the national colors of blue, white, and red and carrying 4,500 passengers per hour carry locals to the city center quickly and comfortably. Travelling at 7 m/s, this system also represents a world-first in urban ropeways.

The gondola lift's first station connects directly to the recently extended metro system and was designed as a new district center in its own right. The three other stations were kept as simple as possible, because they're right in the middle of densely populated residential areas.

GD12 Santo Domingo	
Inclined length (total):	4,156 m
Vertical difference:	15 m
Carrying capacity:	4,500 p/h
Running speed:	7 m/s
Number of cabins:	160
Number of stations:	4



Santo Domingo, DO



Santo Domingo, DO



FRANCE – ALPE D'HUEZ

## Green Journey to Skiers' Paradise

Alpe d'Huez is one of the foremost leisure destinations in the department of Isère. Surrounding the 3,330 meter high Pic Blanc, it enjoys an international reputation. Its operators are focusing closely on developing sustainable mobility solutions. Having opened the Alpe Express gondola lift in 2018, they have now commissioned a second Huez Express ropeway. This detachable 10-passenger gondola lift with 27 cabins, combined with the 60 cabins of the Alpe Express, forms an almost 2-km long link between the village of Huez at 1,450 m and the center of Alpe d'Huez and the entrance to the ski resort at 1,860 meters. This takes the place of a large number of shuttle buses. The two ropeways are integrated sustainably into their environment. They are equipped with special ropes to reduce noise and the ecofriendly

DirectDrive system. They can be run autonomously, or, when needed, with an attendant at the station. This new right-of-way public transport system delivers an eco-friendly and sustainable alternative transport solution and relieves the problem of heavy traffic in the mountains on the way up to the ski slopes.

### GD10 Alpe d'Huez

Inclined length (total):	_____ 1,200 m
Vertical difference:	_____ 300 m
Carrying capacity:	_____ 2,400 p/h
Running speed	_____ 5 m/s
Number of cabins:	_____ 27
Number of stations:	_____ 3

INDIA – BHALEYDHUNGA

## View of the Himalayas

Sikkim is a federal state in Northern India which borders on Tibet, Nepal, and Bhutan. Its government have decided to develop sustainable, responsible tourism in the mountain region, which is known for its unusual and untouched flora and fauna.

The Bhaleydhunga gondola lift was built just 60 kilometers from Gangtok, the capital of Sikkim, right in the heart of the jungle, and gives visitors the opportunity to admire these mystical and wild places, steeped in spirituality.

Travelling more than three kilometers, passengers can enjoy a view of ancient pines and numerous species of plants unique to the region. A ten-minute journey takes guests to the top station at an altitude of 3,200 meters. From there they can enjoy a panoramic view of the majestic Himalayan mountains. A Skywalk with a glass floor will soon be built as an additional attraction.

By building the Bhaleydhunga gondola lift, the local government intends to encourage economic development in the region by opening up this unique natural destination to visitors while preserving its valuable ecosystem.

### GD8 Bhaleydhunga

Inclined length (total):	_____ 3,508 m
Vertical difference:	_____ 1,348 m
Carrying capacity:	_____ 400 p/h
Running speed	_____ 6 m/s
Number of cabins:	_____ 18
Number of stations:	_____ 2



# New Perspectives

## CHINA — JIAOZISHAN

### RIDE WITH A GLACIAL VIEW

The Xiapingzi gondola lift is located in the picturesque Jiaozi mountains in the north-east of Yunnan. The ropeway carries visitors from the Xiapingzi bottom station to the Daheijing top station, giving them a view of the surrounding glacial landscape along the way. The Xiapingzi gondola lift employs various technologies such as the latest generation of DirectDrive, which reduces noise levels while saving energy and requiring little maintenance. It's also the first gondola lift in China to use the new Smartboard control center to optimize the use of space and monitor operations digitally. Its comfortable 8-seater DIAMOND cabins are black and green, harmonizing nicely with their surroundings.

## SOUTH KOREA – HADONG

### PICTURESQUE JOURNEY IN THE SOUTH OF KOREA

Located on the southern coast of the Korean peninsula, the Hadong Flyway Cable Car offers stunning views all around the Hallyeohaesang National Park's archipelago. The journey from Jungpyeong-ri Youth Training Center in Geumnam-myeon to the top of Geumosan Mountain at 849 meters above sea level is made all the more breathtaking if you ride in one of the 8 out of 40 super-modern 10-passenger cabins that have glass floors. With a capacity of 9,800 people per day and running seven days a week, this new ropeway is designed to help revitalize the local economy. As Asia's longest ropeway, it's set to establish itself as a popular tourist attraction on the South Coast together with the Sky Walk.



Tignes, FR



Hadong, KR

## FRANCE - LES DEUX ALPES

### TELEMIX FOR MORE FLEXIBILITY

To meet the needs of visitors to the popular Vallée Blanche, the SATA GROUP has replaced a chairlift with a new Telemix ropeway in the Les 2 Alpes ski resort in the department of Isère. This has halved the journey time to a total of five minutes. With its 6-seater chairs and 10-passenger EVO cabins, the Telemix ropeway is now suited to guests of all levels and carries 2,800 people per hour in summer and winter. The ropeway is equipped with EcoDrive technology, which allows the operating speed to be adjusted to the number of passengers waiting at the stations, whether skiers, pedestrians, or mountain bikers. Vallée Blanche is the second Telemix after the Diable to be put into operation this season as part of the modernization of the Les 2 Alpes ski resort.

## FRANCE - TIGNES

### HIGHER PERFORMANCE AND ENERGY EFFICIENCY

The unusual landscape of Vanoise National Park in Savoie Mont Blanc is the setting for Tignes ski resort. Linked to Val d'Isère, it forms an extensive ski area containing 1,000 kilometers of slopes in a total of 3,680 hectares. At Tignes, the Aiguille Rouge chairlift has been replaced by a detachable 6-seater chairlift which can carry more people. The link between Tignes 1800 and Tignes 2100 is an important one, which is why they chose a chairlift that could meet customer demands: more comfort, shorter travel time, more safety, especially when transporting children. The ropeway is equipped with EcoDrive technology and SmartBoard control. It's designed for higher performance and energy efficiency and has helped the ski resort obtain the "Flocon Vert" sustainability label.

**USA**

**LPOA AND SKYTRAC**

**LOOK BACK ON RECORD YEAR**

LEITNER-POMA OF AMERICA (LPOA) and its subsidiary SKYTRAC can look back on their busiest financial year ever. A highlight of this was the Base to Base 8-passenger gondola lift, which connects the Palisades Tahoe and Alpine Meadows resorts in the Sierra Nevada, creating the largest skiing area in California. LPOA also built eleven detachable chairlifts, six 6-seater chairlifts and five 4-seater chairlifts. The LPOA subsidiary SKYTRAC also had a successful financial year with the implementation of ten fixed-grip chairlifts, nine 4-seater chairlifts and one 3-seater chairlift.

**USA – BRECKENRIDGE**

**NEW ROPEWAY FOR ONE OF THE WORLD’S HIGHEST SKI RESORTS**

One of the world’s highest ski resorts, Breckenridge lies right up in the Rocky Mountains and enjoys outstanding snow and a long skiing season. Its new Rip’s Ride beginners’ lift is the latest addition to Breckenridge’s lift fleet and is used exclusively by the resident ski school. This ropeway operates at a low speed to accommodate newcomers to skiing and snowboarding. That’s how Rip’s Ride has helped Breckenridge succeed as one of North America’s biggest ski resorts, attracting well over 1.7 million people each year.



Valmorel, FR

# 2023 Outlook

FRANCE – LUCHON

## Heart of the Pyrenees

The spa town of Luchon in the heart of the Pyrenees is getting a new gondola lift, which will connect it with its ski resort at 1,800 meters above sea level. The new Crémaillère Express carries up to 2,000 people per hour in 10-passenger EVO cabins of the latest generation to the Superbagnères plateau. This gondola lift climbs 1,150 meters in just eight minutes at an average gradient of 49%. Like in the neighboring municipality of Peyragudes, where the Skyvall ropeway has been a success since its opening in 2019, the new Luchon Crémaillère Express gondola lift is part of a plan to modernize and develop tourism in order to revitalize the spa towns of the Pyrenees

ificent views over the Savoyard Valley during the 4.5 minute journey. This new line has been completely redesigned for Valmorel's new large-scale ropeway in order to provide new levels of safety and comfort. This includes reducing the link to one section, an extended station, and wide lanes for easy boarding. The ropeway is also one of the first in France to achieve a rated speed of 7 m/s.

FRANCE – JANDRI

## 3S-Gondola for new Ambitions

The Jandri link is the main artery of the huge Les Deux Alpes ski resort and also the most important connection, because it carries passengers throughout the year from the center of the resort at 1,650 meters to the foot of its famous glacier at 3,200 meters. To make things more comfortable for visitors, the operator chose to construct a detachable tricable gondola lift (3S) with two sections and a capacity of just under 3,000 people per hour. Just seven towers are needed for this new six kilometer long ropeway with its 55 comfortable and elegant Symphony cabins, complete with Wi-Fi. The ropeway also has DirectDrive, which cuts its power consumption by five percent as well as significantly reducing noise emissions.

FRANCE – VALMOREL

## New X-Line

In the heart of Valmorel, the gateway to the high alpine valley of Tarentaise, the Sofival Group is equipping itself with a new gondola lift for year-round operation. The Planchamp gondola lift will be fitted with 75 10-passenger cabins of the latest X-Line EVO generation, giving it a capacity of 3,600 people per hour, who will enjoy magni-



Sierra Nevada, USA



USA – UTAH

## More Power

Snowbasin Resort in Utah extends over 3,000 hectares at 3,000 meters of altitude, offering comprehensive facilities for skiers of every ability. The region has always been known as a world-class destination and is one of North America's oldest continuously operating ski resorts. It hosted the Salt Lake Winter Olympics in 2002. Further upgrades to this famous ski resort will include a new detachable 6-seater chairlift which will be installed in the extensive Strawberry ski area. The "DeMoisy Express" will run parallel to the "Strawberry" gondola to give extra capacity to this highly popular section of Snowbasin. Groundbreaking will take place in June 2023, with opening planned for the 2023-24 ski season.

DOMINICAN REPUBLIC –  
SANTIAGO DE LOS CABALLEROS

## Innovative Mobility

Santiago de los Caballeros, the second-largest city in the Dominican Republic, is building SITS (Santiago Integrated Transport System), a sustainable mobility system that includes a monorail, bicycles, electric buses and a nearly four-kilometer-long 12-passenger gondola lift. Like in Santo Domingo, Santiago's gondola lift will be equipped with DirectDrive and will carry 4,500 people per hour quickly, reliably, and without harming the environment, at a speed of 7 m/s. Painted in the city's iconic red color, its comfortable 12-passenger cabins will float through the Dominican sky. The ropeway will pass over the most congested areas in this city of 130,000 inhabitants, connecting a total of four stations in just ten minutes. The Santiago de los Caballeros gondola lift will be the third POMA ropeway to be built in the Dominican Republic in just six years. The ropeway is set to be a symbol of intelligent, innovative mobility that boosts development in the country.

CHINA – ZHUHAI

## Unique Triangular Connection

The Chimelong Group operates an extensive leisure complex constituting theme parks and hotel complexes at Zhuhai and Guangzhou in China. Guangzhou Safari Park, one of the largest zoos in Asia, was equipped with three ropeways connected in the form of a triangle in 2017. They have since become one of the zoo's biggest attractions. The Group now wants to install a ropeway unlike any other in the world at the second theme park, Ocean Kingdom, which attracts 8.5 million people each year. This 4.5 kilometer long system consists of three interlinked detachable tricable ropeways in the form of a triangle. Its comfortable Symphony cabins, with their elegant Pininfarina design, can accommodate 32 passengers and are equipped with large windows so passengers can enjoy the incredible views of Macau Bay. The cabins are equipped with an LED lighting system that illuminates the sky above the park at dusk, making the ride a unique experience.

CHINA – XILINGXUESHAN

## Breathtaking Views

The Xiling Snow Mountain ski resort is 100 kilometers west of Chengdu in the province of Sichuan and lies at the foot of a 5,364 meter high mountain. To make the resort easier and more comfortable to get to, two ageing pulsed gondola had to be replaced: "Yuanyangchi Lift No. 1" was replaced in 2010 with an 8-passenger gondola lift built by POMA. Since then, skiers and tourists have been able to cover the two kilometers to the ski resort comfortably in 8 to 10 minutes. POMA has now been given the go-ahead to build another 8-passenger gondola lift called "Yuanyangchi Lift No. 2". Once completed at the end of 2023, the new ropeway will improve the region's tourist infrastructure and triple the number of passengers that can be carried, and offer a unique experience among ice and scenic views.



# Swiss Made



2022 was a particularly eventful year for BARTHOLET. The company was successfully integrated into the HTI Group, but there were challenging framework conditions to be surmounted, from restrictive coronavirus protection measures in China to extensive EU sanctions against Russia in connection with its invasion of Ukraine.

One of last year's highlights was the 60th anniversary week celebrations. A total of around 400 guests took the opportunity to gain an exclusive look behind the scenes at production.

BARTHOLET also made a convincing business impression despite the tense global economic situation. A large number of realized projects are evidence of the company's successful trajectory. Following its motto of "Swiss innovation, design and quality", BARTHOLET was awarded contracts for its first ever installation in Uzbekistan and India – among other places. Another milestone was the evolution of the unique ROPETAXI® system, which is now in the final phase prior to commissioning of the first two sections in Flims-Laax, Switzerland. The standard, Porsche-designed 6-seater chair was successfully redesigned in 2022. In addition to its attractive looks, it now offers even more comfort for passengers as well as improved wind stability.

At its production site, the company invested in modern new machining centers and powerful laser systems, thereby forming the basis for the highest standards of service and product quality.



## Design With a View

### SWITZERLAND – STYLISH AND FAST

Varied slopes and excellent snow conditions surrounded by unspoiled nature: Bruson ski resort in the 4 Vallées ski area is a very special place for hiking, biking, and skiing. Hospitality and comfort are top of the agenda for locals and for visitors from all over the world.

In December 2022, a new, detachable 6-seater chairlift replaced the fixed “La Pasay” 3-seater chairlift from the 1990s. BARTHOLET’s modern ropeway, designed by Porsche Design Studio, offers more comfort because it features more comfortable chairs with weather

protection bubbles, a higher capacity, and less than half the travel time. The new chairlift carries up to 2,000 people per hour at six meters per second. Travel time is reduced from the previous chairlift’s eleven to less than five minutes.

Construction work was completed in time for the winter season in December 2022, which meant a timely start to relaxed, pleasant travel amidst the picturesque snow-covered mountain landscape.



Golden Mountain, CN



Verbier, CH

### CHINA – COMFORT IN RED

In one of the most famous ski resorts of Jinshanling – Golden Mountain – near the Great Wall of China, there is a BARTHOLET gondola lift with 8-passenger cabins designed by Porsche Design Studio. Jinshanling belongs to the mountainous area in Luanping County, 200 km northeast of Beijing. This 8-passenger gondola lift with its striking red livery transports 2,800 passengers per hour up to 1,675 meters above sea level. Seated in its luxurious panoramic cabins, you can relax and enjoy the breathtaking views before arriving at the ski slopes, comfortable and well prepared. Two sections with a total of 86 panoramic cabins began operation in 2022.

### CHINA – RIDE WITH A VIEW

In the mountains of Laoshan in the eastern Chinese province of Shandong, a new BARTHOLET gondola lift carries up to 2,000 visitors per hour to an elevated mountain viewpoint in Qingdao Laoshan National Park. Guests can enjoy the varied landscape during a ride of almost three minutes in comfortable 8-passenger cabins with glass floors. The Laoshan mountains are famous for their granite landscapes that include around 230 stone attractions. Other popular destinations include numerous lakes, springs, and waterfalls in the Lao Shan area. The Lao Shan Reservoir and Beijiushui River Scenic Area are other essential tourist stop-offs. That’s why the gondola lift is also to be extended to include a second section in the near future.

# 2023 Outlook

INDIA – VARANASI

## India's First Urban Ropeway

Varanasi is a city in the northern Indian state of Uttar Pradesh with about 1.2 million inhabitants. It lies on the River Ganges. One of the oldest cities in India with over 2,000 temples, it's considered Hinduism's holiest city and attracts countless pilgrims and tourists every year. BARTHOLET has been appointed by National Highways Logistics Management Ltd to work with Vishwa Samudra Engineering to commission India's first urban ropeway there in 2025. As well as relieving traffic congestion, this will significantly reduce travel time along the congested route between the main Varanasi Cantt station and Godowalia Chowk station near Kashi Vishwanath temple, which was built in 1780. With a total length of 3,660 meters, the ropeway is designed for a maximum capacity of 3,000 passengers per hour in each direction. Around 150 Panorama 10-passenger cabins designed by Porsche Design Studio will travel at six meters per second and connect a total of five stations.

CHINA – NANCHANG

## Consistently Successful

BARTHOLET has completed a lot of exciting projects in China in recent years. China is especially keen on Swiss quality and the precision and reliability it brings. Premium cabins designed by Porsche Design Studio are also highly popular. This proven design has been chosen for all of the projects currently under construction, including Meiling Mountain, which was awarded to BARTHOLET in July 2022.

Meiling Mountain Scenic Spot is located in a western suburb of Nanchang in China's Jiangxi Province. It's famous for its steep peaks, extraordinary cliffs, plunging waterfalls, and clear lakes. The top of Meiling Mountain is a popular place to watch the sun rising over a sea of clouds.

This year-round installation will feature two sections and a total length of 5,560 meters, carrying up to 1,500 passengers per hour to 758 meters above sea level with a total of 112 cabins designed by Porsche Design Studio.



Flims Laax, CH

WORLD FIRST

## ROPETAXI®

This newly developed detachable single-cable gondola lift approach enables on-demand operation in conjunction with branched route networks. Passengers can choose a direct destination without having to change cabins. Inside the stations, cabins move autonomously by means of separate battery-powered eMotion drives in the grip area and are steered to their destinations using switches.

Passengers can select their final destination by pressing a button on the destination column before boarding. They can then travel straight there without changing cabins. An integrated, intelligent passenger allocation system with a display regulates entry into the stationary cabins inside the stations.

Another feature of ROPETAXI® are its timeless, elegant Panorama Cabins designed by Porsche Design Studio, which offer incomparable views combined with an impressive feeling of space as well as fabulous comfort. The first project to feature ROPETAXI® is being built in

the winter resort of Flims Laax and will be called the Flim Xpress. A symbolic groundbreaking ceremony was held at the bottom station in Flims on June 29, 2022. To keep the mountains around Flims looking as natural as possible, the stations are being integrated very much into the landscape. Existing building materials are being reused and additional structures are being built using local resources such as wood and concrete. The first two sections, Flims – Foppa – Startgels, will be commissioned in December 2023. The remaining sections are then scheduled to be commissioned in December 2024. Because the Flim Xpress will operate all year round, guests will easily be able to bring their skis and snowboards into the 10-passenger cabins in the winter, and in the summer, each cabin will accommodate five bikes without passengers having to give up their seats. Passengers will also enjoy panoramic views from every seat in the cabin.



Varanasi, IN



Nanchang, CN

# Ecofriendly Equipment



2022 was a year of recovery for many projects that had been on standby because of the COVID pandemic. Agudio was involved in a number of important feasibility studies in which AGUDIO's systems played a key role in the successful execution of a project: cable cranes for assisting with work in unstable and inaccessible terrain, as well as material ropeways for the ecofriendly transport of excavated material to suitable places of storage.

Sustainability and low environmental impact are now major considerations in mining projects and large construction sites. Ropeways have always been an ecofriendly solution. Nowadays, engineering, construction, and mining companies are more open than ever to alternative transportation solutions that offer more sustainability. That's why AGUDIO is becoming increasingly involved in feasibility studies, because stakeholders wish to better evaluate pros and cons of conventional and innovative solutions.



# Custom Solutions

## PORTUGAL – ALTO TÂMEGA CABLE CRANE RELIABILITY AND LONGEVITY

AGUDIO's two 28-ton cable cranes have successfully completed their work on the Alto Tâmega construction site in Portugal in 2022. The result is a 105 meter high, 335 meter long dam on the Tamega River. With spans of 620 meters, load capacity of 28 tonnes and speed of eight meters per second, the two systems helped work finish on schedule by transporting the 300,000 cubic meters of concrete required for the construction of the dam in an ecofriendly manner, and moving machinery efficiently around the site. The machines were built ten years ago for the construction of the Baixo Sabor dam and were completely overhauled for the Alto Tâmega project.

## BRAZIL – ADRIANOPOLIS FLYINGBELT A TRULY SUSTAINABLE PROJECT

The FlyingBelt in Adrianopolis, Parana – the second FlyingBelt to be installed in Brazil – connects a limestone quarry with a production plant and has been carrying up to 900 tonnes of limestone per hour since 2020 while minimizing environmental impacts. By using the FlyingBelt for almost 5,000 hours per year, the number of trucks on the main road through the city of Adrianopolis has been significantly reduced, that being the only available road connection. The FlyingBelt connects the quarry directly to the cement plant by crossing a valley with a width of 850 meters, reaching the storage ground in just 1,750 meters. That's just under a quarter of the 6,500 meters that would have to be covered by trucks.



Adrianopolis, BR



Alto Tâmega, PT

# 2023 Outlook

There were important signs of an upturn in 2022, allowing a positive outlook for 2023. The focus was on a number of feasibility studies which are now complete, and which may lead to important projects in the coming years. Furthermore, the past year also saw an increase in projects involving renewable energies, not least because of rising prices for fossil resources. More new hydroelectric projects and the resumption of old projects that had been on hold represent major oppor-

tunities for AGUDIO cable cranes. Strategic equipment for the construction of dams in inaccessible areas and for the handling of heavy machinery on these complex construction sites. The commissioning of a FlyingBelt at the Rogun Dam construction site in Tajikistan, planned for summer 2023, will demonstrate how AGUDIO's technology can deliver sustainable added value when handling aggregates within large-scale construction sites.

# Sustainable Success

*Prinoth*

At PRINOTH, the year 2022 was marked by the 60th anniversary of the company. In 1962, Ernst Prinoth developed his first snow grooming vehicle in Gröden, laying the foundation for today's organization. There were also other reasons to celebrate: the fiscal year was very successful. The business units of Crawler Carriers and Vegetation Management continued their strong growth. Sales in the snow grooming vehicle business were back to pre-coronavirus pandemic levels. Despite challenges posed by shortages in global supply chains, production was able to be increased in most business areas.

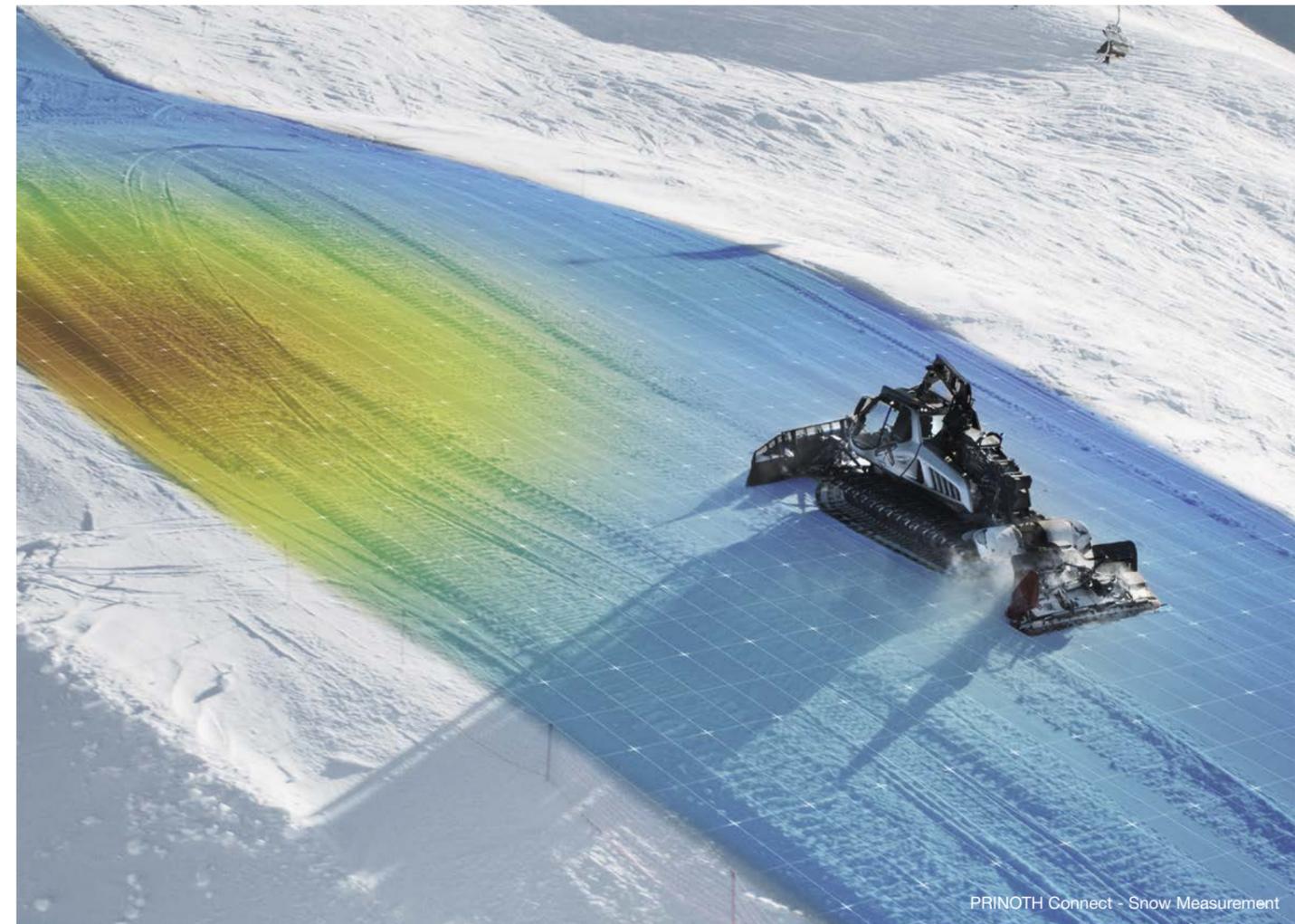
PRINOTH underlined its technological leadership in the development of sustainable snow groomers through its electric and hydrogen-powered vehicles. In the Crawler Carrier business unit, PRINOTH was able to further strengthen its position, particularly in the Japanese and North American markets.

In 2022, the company Jarraff, which PRINOTH had acquired the previous year, was integrated into the PRINOTH Group. This expanded the portfolio of the Vegetation Management business unit to include machines for tree care. The newly acquired JARRAFF tree trimmers, together with the RAPTOR and PANTHER vehicle series, now offer an end-to-end solution for all stages of infrastructure development and maintenance, making it best positioned for the future.

# Snow Groomers

It's been a very successful year for our snow groomers. PRINOTH has invested heavily in research and development in recent years, and this was demonstrated in 2022 with two important product innovations: the world's first series-production electric snow groomer the HUSKY eMOTION, which was first presented as a concept vehicle in December 2020, was delivered to the first customers. Moreover, the hydrogen-powered LEITWOLF h2MOTION with a hydrogen combustion engine was

showcased at the 60th Anniversary celebrations. This means, in addition to the hydrogen fuel-cell concept vehicle which was unveiled in 2020, PRINOTH now has a second hydrogen-powered machine. Both concept vehicles are the first of their kind in the world. With the HUSKY eMOTION and the LEITWOLF h2MOTION, PRINOTH underscores its leading role in the development of sustainable snow grooming vehicles.



PRINOTH Connect - Snow Measurement



LEITWOLF h<sub>2</sub>MOTION

PRINOTH Connect is a suite of digital technologies that helps ski resorts save time, money, and resources. Tools such as snow depth measurement, fleet management, and task manager connect people, machines, and data to optimize operations in ski resorts and make complex workdays easier. In 2022, numerous updates

were made to the applications allowing them to be extensively customized so that ski resorts can easily tailor them to their specific needs.

In the North American Market, the BISON with a Stage V engine was very well-received by customers.

## COOPERATIONS

## World-Class Partner

PRINOTH built on many valuable alliances and partnerships in 2022 – and established new ones. As an official partner to FIS, ÖSV, and IBU, PRINOTH's snow groomers were used to create the best competition conditions at a range of world-class events.

The year started with a highlight as a fleet of over 50 PRINOTH snow groomers exclusively prepared the slopes, parks, and trails for the Olympic and Paralympic Winter Games in China. The LEITWOLF, BISON, and HUSKY models were all in use, and PRINOTH provided on-site training for the drivers.

PRINOTH Connect's precise snow depth measurement supported the preparation of the slopes, parks, and trails, contributing to a successful and smooth-running event.

Additionally, PRINOTH demonstrated the quality of its vehicles in the preparation of World Cup slopes in the North American market. Since 2022, PRINOTH has been an official partner of the US Ski & Snowboard Teams.



HUSKY eMOTION

## HUSKY eMOTION

## Perfect, Sustainable Slopes

In 2022, PRINOTH introduced the world's first series-production electric snow groomer, the HUSKY eMOTION. The emission-free vehicle enables ski resorts to reduce their ecological footprint. The first buyer was the city of Oslo, which purchased the HUSKY eMOTION for use in the national Ski Arena Holmenkollen to groom cross-country ski trails. Furthermore, the HUSKY eMOTION is now in daily use in France, Sweden, and Italy.

The electric motor delivers 245 horsepower and an instant torque of 1,000 Nm, making it more powerful than the diesel model. The electric motor requires less maintenance and has a 208 kWh battery that provides up to three hours of runtime. The HUSKY eMOTION is also quieter than any other snow groomer, making it perfect for cross-country ski trails, short descents, ski halls, or slopes near residential areas.



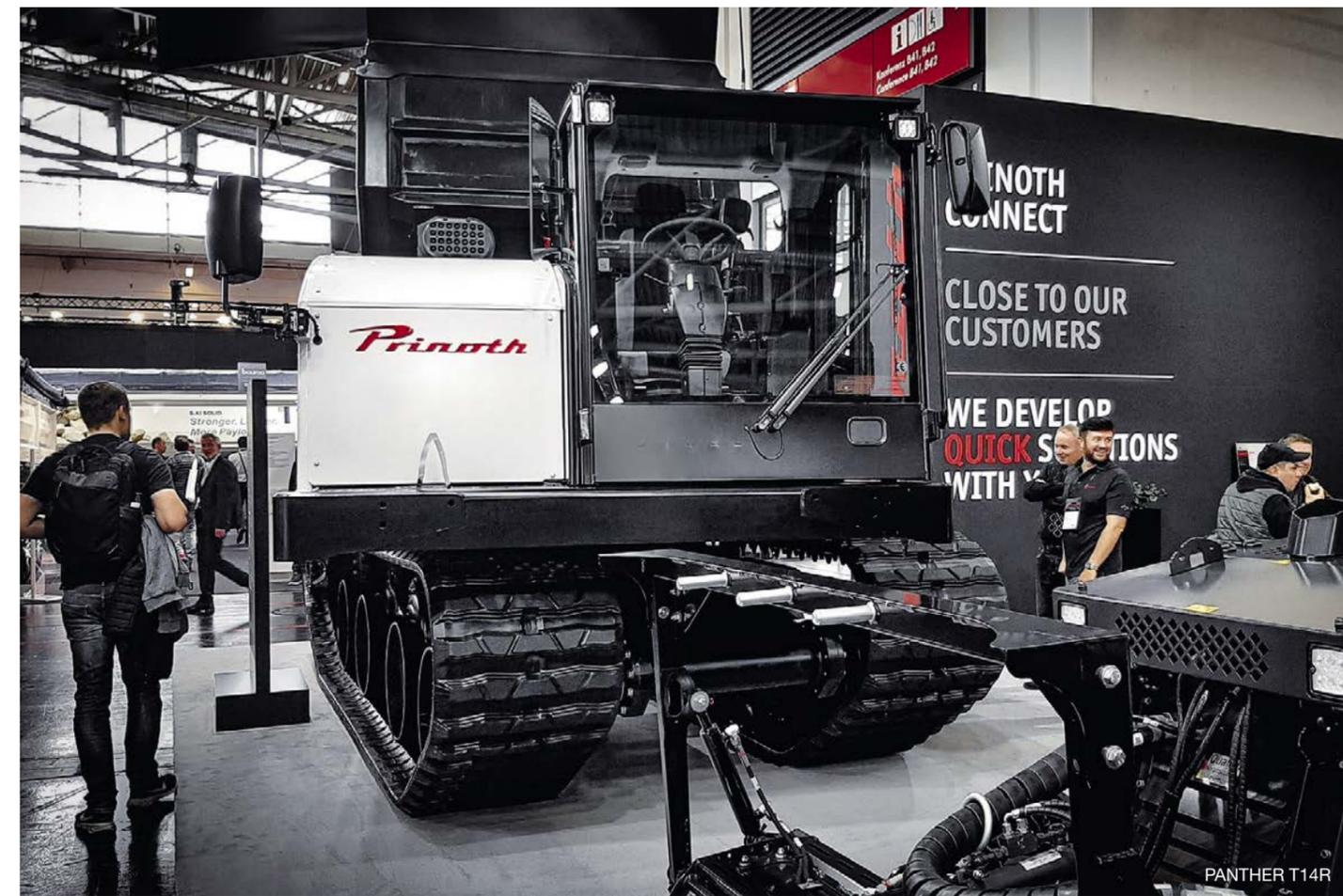
LEITWOLF

PRINOTH

# Crawler Carriers

The performance and growth potential of PRINOTH's Crawler Carriers' business unit was confirmed in 2022. Like most global manufacturers, PRINOTH faced supply chain disruptions, parts availability issues, and increased transportation costs. However, through a tremendous effort and close collaboration with suppliers, coupled with a high degree of flexibility in production areas, the company was able to preempt difficulties.

Despite this situation, in our main market North America, we even managed to gain market share. High investments in infrastructure, construction and maintenance as well as the continued boom of the US power industry enabled us to realize new projects. Due to this, the demand for PRINOTH's products has increased while putting us in an excellent position for the future.



TRADE FAIRS

## Growing Markets

In other countries Prinoth also had great success in 2022. In Japan, the company was able to further penetrate the market with a strong presence at the CSPI-EXPO. Efforts are well underway in continuing to develop the PRINOTH organization in Japan to leverage its high market potential. In Europe, the year 2022 marked the return of well-attended trade shows. At the Bauma in

Munich, PRINOTH presented the latest version of the PANTHER T14R for the first time at a major European trade show. Visitors to the booth were also able to learn about services such as PRINOTH Connect and fleet management, as well as the online parts shop and the PRINOTH Academy.

# Vegetation Management

The Vegetation Management business unit also experienced a strong increase in demand for RAPTOR carrier vehicles and various attachments in 2022. The extensive portfolio was expanded with several products, not least through the integration of Jarraff and its machines.

The construction work, which began in November 2021 to expand the production site in Herdwangen, is progressing well. A new building of approximately 2,000 square meters is being built to expand production and storage capacities. The first new production hall was already put into operation in November 2022.



JARRAFF All-Terrain Tree Trimmer



Construction Phase November 2022

JARRAFF

## New Heights

The US manufacturer Jarraff, which was acquired in the previous year, was successfully integrated into the PRINOTH group in 2022. The machines for tree care and right-of-way maintenance are an important addition to the portfolio of the Vegetation Management business unit.

At the St. Peter location, the number of employees was increased, and the reach in the North American market was expanded, resulting in significant sales. The LineBacker multi-functional carrier vehicle was further

developed and replaced by the T-REX which was subsequently successfully introduced to the market. In Europe, PRINOTH used this year's trade fairs to showcase the JARRAFF All-Terrain Tree Trimmer to the public. Whether at Elmia Wood, Interforst, or Bauma, the machine with its extendable telescopic arm was always an eye-catcher. The industry's unique, 180-degree rotating saw head of the Tree Trimmer makes vegetation maintenance near power lines and supply routes a one-person job, and scores high on efficiency.



RAPTOR 100

RAPTOR 200 &amp; M500e

## Compact Power Packs

In 2022, the vegetation management product portfolio was also expanded with the RAPTOR 200. With 190 horsepower and a weight of only 9.2 tons, it offers a unique power-to-weight ratio in its class. In combination with the proven attachment M450s, the carrier vehicle is the first choice for forestry work, trail maintenance, and everyday mulching, whether on steep slopes or soft ground. An air-conditioned, ergonomic, and spacious driver's cabin meets the highest safety standards and makes working with the RAPTOR 200 particularly user-friendly.

The M500e-1100 mulcher attachment for excavator vehicles was developed specifically for the North American market. It impresses with its robust construction and is equipped with the unique "Tilt" function. This allows the mulching head to tilt 10° forward and 90° backward, making it easier to work on trees.

RAPTOR 100

## Remote-Controlled Bestseller

Since March 2022, the RAPTOR 100 has been on the market and is already a bestseller. The powerful and technically unique remote-controlled carrier vehicle in conjunction with the M450h mulcher can be used in a variety of applications and areas: mulching of brush and branches in rough terrain or tight spaces, maintenance of green areas and forestry work, work on steep slopes or on roadsides, as well as low-impact work on sensitive surfaces where the ground needs protecting.

Thanks to its compact design and low weight, the RAPTOR 100 can be quickly and easily transported to the deployment area. Good ground clearance, wide rubber tracks, and a mulcher with a 600 mm excavation height allow for the processing of almost any terrain. The adjustable chassis allows the RAPTOR 100 to easily handle steep sections and narrow passages. Due to its compact design, the RAPTOR 100 is the perfect addition to the product portfolio in lower horsepower classes.



RAPTOR 200



M500e



# Rethinking Snowmaking



DEMACLENKO has had a very strong financial year and set a new sales record. This was due in part to numerous international projects and some pioneering new products that set new standards in the snowmaking market. The most impressive of these was “The Ghost” (pictured left). It is based on a snow gun mounted on a hydraulic lifting device that can be lowered completely into a pit via a hatch. This has advantages when it comes to garaging, handling, and maintenance. As well as the practical benefits, it also allows the snowmaking components to be hidden away from the landscape.

The past year was also more than ever about sustainability and the conscious use of resources. This is where DEMACLENKO has been focusing its product development for a number of years. Firstly this involves continually optimizing energy efficiency in snowmaking, while making the best possible use of resources through automated, data-driven snowmaking. Secondly it means making the products as easy as possible to maintain and use.

Numerous milestones have already been reached over the years and measurable improvements achieved. And these are precisely the arguments with which a company can set itself apart from its rivals when resources are scarce and energy prices are rising fast.



## Year of Innovation

Another key guiding principle at DEMACLENKO is daring to make real progress and thereby offering customers verifiable benefits they can feel. When it presented “The Ghost” shortly before the end of 2022, DEMACLENKO once again cemented its reputation as an innovation driver in the industry. The foundation for this technology had already been laid with the E-Tower, which was unveiled at 2022’s Grenoble trade fair, and in which a snow gun is mounted on a retractable inclined elevator. The new

C150 Premium concrete pit achieves a new level of work safety. Its extra-large access hatch provides even more safety and comfort. The Ventus 4.0 Blizzard, which is a new, improved edition of the Ventus 4.0, also celebrated its official launch in France. One of its many innovative features that ensure maximum energy efficiency is a heat exchanger integrated in the nozzle ring, which heats the ring and cools the compressed air at the same time.

## Enabling Resource-Efficient Snowmaking

For many years (and not just since the word sustainability has been on everybody’s lips), DEMACLENKO has been focusing on developing increasingly efficient and resource-saving snowmaking solutions. Over the course of twenty years of research and development, the company has achieved significant efficiency improvements through a series of technical innovations. The latest fan guns, for exam-

ple, produce twice as much snow using the same amount of energy, and the latest lances produce no less than three times more than the old models. An independent study has also proven that the latest DEMACLENKO 4.0 series models compare especially well with their competitors: they consume up to 20% less energy than equivalent rival products to achieve the same performance and throughput.

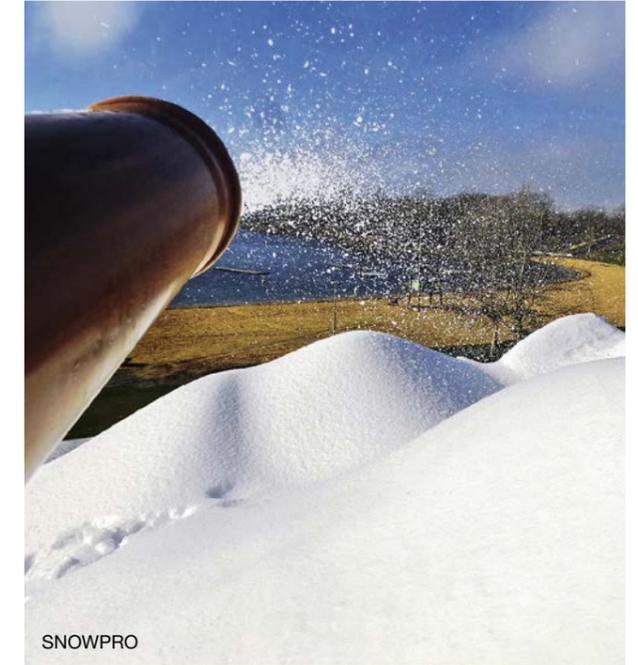


Ventus 4.0 Blizzard / E-Tower / C150 Premium

# On the Road to International Success

DEMACLENKO did especially well in some countries in 2022, first and foremost Italy. A number of Italian ski resorts drew on DEMACLENKO's expertise to expand their snowmaking systems. Over 700 snow guns were sold in Italy alone and around 40 pumping stations were built or upgraded. In Scandinavia, DEMACLENKO won a major contract from SKISTAR to upgrade five ski resorts. Significant successes were also achieved in Austria, where numerous existing systems were expanded and

modernized. DEMACLENKO's branches in Switzerland, France, and Poland also managed to implement important projects in their respective markets. Outside Europe, DEMACLENKO made the biggest progress in North America. Customers included names like Aspen, Snowshoe Mountain, Wolf Creek (all in the US) and Ski Cape Smokey (Canada). Chilean ski resort El Colorado placed a major South American order.



## BETTER AIR QUALITY THANKS TO WLP SYSTEMS

WLP Systems, which has belonged to DEMACLENKO since 2020, specializes in dust and odor control systems. Like snow guns, these are based on water atomization technology, so they diversify the product range. An important project was completed in 2022 at the Hambach opencast coal mine in western Germany. Five WLP Systems Demolitor 50s were purchased to help contain dust. Firefighting is emerging as another potential market. A turbine aptly named 'Poseidon' has been developed based on in-house technology and can be used efficiently against fire and for cooling.

## STRONG PARTNERSHIP

DEMACLENKO has been the official distributor for KTI-Pfersch Kältetechnik GmbH, the leading manufacturer of flake and plate ice technology, since the beginning of 2022. This gives DEMACLENKO international distribution rights for the renowned SNOWPRO, a turnkey container solution for efficient snowmaking at temperatures of above zero degrees Celsius. This system is the only one of its kind to be manufactured exclusively using components from European suppliers. It's also a simple to set up, quick to commission plug & play system.

# 2023 Outlook

DEMACLENKO has started the new year full of energy. Its research and development is focusing even more on resource efficiency, quality, and diversification. In April, DEMACLENKO will present itself again at Interalp in Innsbruck to showcase some of its new products together with other members of the HTI Group.

A number of new plant engineering projects were already nearing completion at the beginning of the year. One of the highlights of 2023 will be the commissioning of a new snowmaking system on the Stubai Glacier. In addition to the new Gamsgarten II storage pond, a new pumping station was built as part of a large-scale, two-year project. Once completed, it will be the largest in the entire Alpine region.

# Resort Management Redefined

**skadii**

Skadii sets new standards in digital resort management on which more than 400 customers worldwide now rely. The open resort management platform Skadii was developed in close collaboration with leading ropeway, snow groomer, and snowmaking partners and is constantly being improved and adapted to their needs based on customer feedback.

Skadii gives its customers full and centralized control over their ski resorts. The entire infrastructure and all of the important data can be managed at one location with only one account. Skadii is an open, vendor-independent platform into which different software and hardware solutions can easily be integrated. Its modular design offers maximum leeway for customization. Its database, which is synchronized in real time, provides customers with all of the data they need, giving them a clear overview of their ski resorts at all times. As a central, digital communication tool, the Skadii platform makes it much easier to exchange knowledge and information and promotes smooth, efficient processes. This results in smart decision-making, and more efficient and economical use of resources like fossil fuel, water, electricity and – most of all – time.

**DIGITAL UPGRADE 2022**

Software has become an integral part of daily ski resort management in recent years. It optimizes the operation and maintenance of ropeways, snow groomers, and snowmaking systems, and is used in many other areas as well. The aim is always to encourage the efficient use of resources and optimize processes. To achieve this and respond as effectively as possible to customer requirements, Skadii developed numerous new applications and features in 2022.

In task and maintenance management, for example, customers can now create their own maintenance plans and checklists for their entire infrastructure, enabling them to perform maintenance and work processes more efficiently in their ski resorts. New energy management applications help customers to operate their infrastructure as sustainably and efficiently as possible. Skadii Flow, a privacy-compliant camera system for counting downhill skiers and ski tourers, allows customers to monitor the way their slopes are used.



Skadii – everywhere and anytime at your side



Skadii – your central digital communication tool

**NEW FEATURES 2023**

New developments, improvements, and innovations will stay on Skadii's radar in 2023. New features and upgrades are at the development stage and will be introduced later this year; the first of them Skadii will present at Interalp and the NSAA National Convention & Trade Show.

In addition to the European market, Skadii will continue to focus strongly on its global activities in 2023, in which the American market is playing an increasingly important role. Skadii aims to expand its market position there and acquire new customers.

# Wind as Added Value



The climate crisis, the pandemic and geopolitical tensions of recent years have brought home to all of us the importance of renewable energy and fossil fuel independence as significant factors for the future. Investing in renewable energies, therefore, isn't just about environmental protection. It also creates real added value in energy efficiency and in growing social awareness. One result of these developments is that clean energy producers have experienced a sharp increase in demand. This major trend is also making itself felt at LEITWIND, which has been receiving numerous signals from new markets, leading to an optimistic outlook for the coming years.

2022 was a very special year for LEITWIND. As well as building ten new turbines and signing ten further orders, the first LTW42 turbines in 250 and 500 kW configurations were installed in Puglia and Basilicata in Italy. In Germany, following the commissioning of a prototype in Steinfeld in 2019, another LTW42 250 kW turbine has now been erected in Ketzin near Potsdam.

# Global Power

## FOREIGN MARKET

While global interest in wind turbines grows, Italy remains one of the most important markets for LEITWIND. The company has also had success in Turkey, where an order was signed in spring 2022 for the installation of the first LTW90 1.5 MW turbine. Current negotiations for more of this type of wind turbine are additional proof of the trust LEITWIND enjoys in Turkey.

LEITWIND 2022 also managed to conclude other significant supply contracts in various European Countries. For example, the first LTW42 250 kW will be commissioned in Slovenia in 2023, and the first LTW80 1.0 MW in Belgium.

Negotiations are also underway in other countries such as Poland, Greece and Germany, and in this country more than ten customers hope to successfully complete approval processes for LTW42 250 kW hh28 turbines over the course of 2023.



LTW42, Marra, IT



LTW90, Avigliano, IT

## SKI RESORTS

In 2022, Austrian ski resorts showed growing interest in how they might install wind turbines due to the current energy crisis. Expanding their energy spectrum to include this technology could provide the basis for greater energy independence in the future, while also making it easier to plan ahead and improve costs. Thanks to its considerable advantages, wind power would contribute to the creation of a new concept: the "green ski-resorts".

Thanks to the synergies within the HTI Group, its customers benefit from a broad mix of expertise around every dimension of ski resorts: from ropeways, to snow groomers and snowmaking systems, to renewable energy sources.

Because it's so near to Austria and has so many years of experience and such a broad product range, and continuously invests in research, development and expertise, LEITWIND is ideally placed to assert itself in this new and potentially strategic market niche.

## RENEWABLE ENERGY COMMUNITIES

Renewable energy communities are associations involving the production, consumption and exchange of renewable energy, which bring significant environmental and economic benefits. Renewable energy communities are a significant step towards decentralized power generation. They encourage the development of locally generated energy and smart grids.

LEITWIND's strategy and vision are based precisely on this model. We pursue the vision of the stable generation and distribution of wind energy near to where it is used – a vision accessible to small and medium-sized investors.

LEITWIND focuses very much on communicating this vision. For example, we launched a webinar called "The Potential of Renewable Energy Communities in Italy" as part of last year's Key Energy fair, which showcases sustainable technologies. LEITWIND also continues to specialize in solutions for organizations who need energy for themselves, which makes it an ideal partner for renewable energy communities that can make such an important contribution to the energy transition in our country.

# For the Environment's Sake



Climate change, energy crisis, cost pressure – using ecofriendly, efficiency-enhancing technologies has never been as relevant as it is today. Our Group's developments in the field of sustainability put us right at the cutting edge. We never stop pursuing our aspiration of creating social and ecological added value with our products, because we know just how important resource-saving innovations are. New initiatives are helping to fulfill this vision for our customers and for ourselves inside the company. This includes creating a new position of sustainability manager, and quantifying our company's carbon footprint for the first time so that we can make decisions about future areas of activity and optimize our day-to-day work to make it more sustainable. This is how our Group is making the things it does serve the public at large, so that we can contribute in a way that helps future generations.

# Less is More

## ECOFRIENDLY UPDATE BRINGS QUANTIFIABLE RELIEF

Dantercepies ropeway between Wolkenstein and Grödner Joch has brought itself fully up to date on the sustainability front by retrofitting two DirectDrives on its two sections and installing a LeitDrive frequency converter. Experts at the Università degli Studi di Perugia performed a scientific study which confirmed that noise had been reduced by 15 decibels and potential energy savings of 12 % had been achieved over and against the previous system with its planetary gears. Other positive outcomes include significantly reducing the amount of maintenance, reducing wear, eliminating servicing work, and completely eliminating machine oil.

up to **15 dB**  
*less noise*

up to **12%**  
*less energy consumed*



LTW77, Sibenik, HR



DirectDrive Installation, Dantercepies, IT

## LEITWIND CREATES AWARENESS OF COMMUNITY ENERGY GENERATION

Energy and supply security have been key themes of the past year. And LEITWIND is right at the forefront, not only because it generates 800 million MWh of power each year through its wind turbines, but also through its educational work around energy communities. The company held talks at a range of conferences and published a printed brochure explaining this model of generating and using energy together in the future.

LEITWIND is also actively addressing the subject in different communities, and helping to build awareness by doing so. The Group has also set out a clear aim of founding its own local energy communities. As well as helping the energy transition progress, these bring public benefit and economic, ecological, and social value to the regions where they are.



**OPTIMIZED LOGISTICS CUT COSTS AND TRUCK JOURNEYS**

Optimizing transport can do a lot to save money and resources, while reducing carbon emissions. That's why the Group's transport department focuses so much on utilizing truck capacity more efficiently. The department focuses closely on new solutions for boosting efficiency, and pursues the aim of gradually replacing less than truck loads (LTL) with full truck loads (FTL). They're succeeding: the proportion of FTLs has been raised by over

9% since 2019, from 74.07% to 83.12% in 2022. As well as utilizing every single truck journey to the greatest possible degree, they've also been trying to exploit every truck's payload capacity. Since 2019, the average weight of a complete load has risen from 13,754 kg to 15,021 kg. Both of these measures are doing a lot to achieve the aims of minimizing truck journeys and increasing efficiency.

**MARKED EXPANSION OF GREEN ENERGY SUPPLY**

The company is vigorously pursuing and promoting the expansion of renewable energy generation internally. Last year, for example, new photovoltaic plants went into operation in Lacedonia, Telfs, Sterzing Campi di Sotto, and Vipiteno Via Brennero in addition to existing locations. Not only is this making the Group less dependent on fossil fuels, it's also setting an example of how to sustainably modernize its own infrastructure. The plants currently in operation produce 1,259 kWp,

which means a potential annual output of 1,348,000 kWh. This corresponds to the annual demand of around 450 households. Because the experience has been so positive, we're already planning to expand our photovoltaics. As well as the plants that have already been built, we're currently assessing other locations where solar power can be harnessed. This is how our Group of companies is laying the foundation for an energy future which saves resources and money.

*1,348,000 kWh  
annual production*



Transporting a LTW77 blade

# Showing Solidarity

## SOLIDARITY WITH UKRAINIAN REFUGEES

The war in Ukraine has created millions of refugees. Our Group quickly realized that they had to take responsibility and look for ways of providing meaningful support. Due to the geographical proximity of LEITECH's base in the Slovakian city of Stará Ľubovňa, it was decided to accommodate refugees there. Working with the mayor of Stará Ľubovňa, we quickly converted our newly purchased building into housing for several families. We

also held a company collection and gathered around €1,200 for the people accommodated in Stará Ľubovňa. "The performance of each individual employee of our Group enables us to realize social commitment far beyond our own boundaries and legal obligations. As a strong team, social responsibility is very close to our hearts", explains Anton Seeber, Chairman of the Board at the HTI Group.



Stará Ľubovňa, SK

## POMA FOUNDATION TAKES RESPONSIBILITY AGAIN

For the POMA Foundation, 2022 was another eventful year full of good causes. In the area of social affairs and solidarity, more support for the children of 'Ma Chance Moi Aussi' from the poor neighborhoods of Grenoble and Chambéry was given in the form of cooking workshops in small canteens and exchanging messages with POMA Colombia and especially children in Medellin. In the environmental field, the 'Imagine tes montagnes' group was created, made up of ten mining-related funds and foundations, to support campaigns that raise young people's awareness of the environment. In this connec-

tion, three associations were given grants of between 5,000 and 12,000 euros. The POMA Foundation also supports two large organizations: Mountain Riders, who are active in environmental awareness in the mountains, and Sylv'Acctes, who are experts in sustainable forest management in the mountainous regions of France. The Foundation was also active on GIVING TUESDAY last November. To mark this global day of generosity and charity, they ran a number of events aimed at collecting food, clothes, and toys for local associations.

**13**  
supported or-  
ganizations

**23**  
organized  
campaigns

# Global Production and Administration Locations



Vipiteno, Italy



Vipiteno, Italy



Vipiteno, Italy



Telfs, Austria



Stará Lúbovňa, Slovakia



Flums, Switzerland



Castelnovo, Italy



Lacedonia, Italy



Turin, Italy



Voreppe, France



Gilly-sur-Isère, France



Montmélian, France



Passy, France



Vervins, France



Herdwangen, Germany



Granby, Canada



St. Peter, USA



Grand Junction, USA



Beijing, China



Chennai, India



Salt Lake City, USA







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 **BARTHOLET**

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