

# INSPIRING CHILE

In the midst of a pandemic, Chile has proved it has the capacity to respond to change with multiple transformative projects, which seek to make it a more sustainable country that leaves a mark on science and knowledge



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# Chilean talent is creating a better future

After a COVID-related economic contraction, Chile is experiencing a remarkable return to economic success thanks in part to its innovative export sector



At the start of September, the Central Bank of Chile upgraded its prediction for the republic's economic growth in 2021 to 10.5-11.5 percent, noting a recovery from COVID-19 that had "completely outstripped expectations."

Central to that performance is an export sector that captured a record-high \$61.2 billion in the first eight months of this year, 30 percent up on the same period in 2020, with sales increasing for over 1,600 diverse products and services. The continuous development of its export industries has been integral to Chile's economic success in recent decades, according to Jorge O'Ryan Schütz, general director of ProChile. "32 percent of our gross domestic product (GDP) comes from exports and, if you add associated investments, it's about 40 percent. So, it's very important that the sector remains dynamic." ProChile plays a core role in this as the public institution that assists Chile-based companies to promote, diversify and expand exports, while also helping to attract foreign investment and tourism, O'Ryan adds. "We have 56 offices in 41 countries and work with around 65 percent of Chile's exports. Companies that partner with us export to an average of seven markets, versus three for those that don't."

A major contributor to the country's ongoing export preeminence is its openness, he asserts. "Chile has 30 free trade agreements with 65 countries that are equivalent to 88 percent of global GDP. No other country has greater access." Another key reason is that—through a commitment to innovation, science and digitalization that is strongly supported by ProChile—it has moved from being an exporter of natural resources to being an exporter of talent and added value. In mining, for instance, the world's top producer of copper and second of lithium is now a global hub for cutting-edge mining services as well, he notes. "We are also the Latin American leader in fintech, for example, and very strong in areas such as agritech, edtech, retailtech and astronomy."

ProChile also works hard to promote sustainability in exports and O'Ryan points out that the country's agri-businesses are at the forefront of environment-friendly practices. Chile's unique climates, lands, seas and talented producers have made it a global leader in a vast range of fresh and processed foods, wines and forestry products, he states. "Our food and beverage exporters, which secured about \$18 billion last year, are guided by the strictest international sustainability protocols." As a result of its climate, Chile has also invested heavily in renewable energies and is well positioned to become a major exporter of green hydrogen. According to O'Ryan, one pillar of ProChile's strategy is the development of the country's numerous entrepreneurial small and medium-sized businesses. "Among many other things, we train companies in e-commerce and digital marketing, and have very strong online business-to-business and business-to-consumer platforms, while our GoGlobal

program offers high-potential entrepreneurs and innovators a soft landing in various markets, including the U.S. As I regularly say, copper was our most important export for the last 50 years but, for the next 50, it will be our talent."

Constanza Cea, executive director of Marca Chile, the agency that promotes the country's image around the world, agrees. "The talent of Chileans is creating the future. We are doing it in science, astronomy, food, forestry, mining, social entrepreneurship, arts and many more areas." Ranked first in the Global Entrepreneurship Index 2020, Chile has an extensive innovation ecosystem that includes publicly funded Start-Up Chile, the region's top incubator. Cea believes that the country's unique geography has also helped forge innovation. "Being at the edge of the world gives us a special resilience and creativity. But we are also very connected to the world, have an international outlook and respond to global needs. What distinguishes us is our capacity to break paradigms and find different answers." That capacity attracts international researchers, she says. "Chile is a natural laboratory and a reservoir of the future. Our narrow geography means it only takes an hour to go from mountains to sea, in the north we have the world's driest desert and we are the gateway to Antarctica. It's a great place to live."

**"Chile is full of opportunities and an ideal environment for foreign investors."**

Sergio Rademacher, President, AmCham Chile

Chile's entrepreneurial mindset has also attracted a lot of multinationals, with its investment inflows rising by 63 percent in 2020. "Despite COVID and a constitutional reform process that is taking place, investment, in particular from U.S. companies, has not slowed down. EIG Global Energy Partners' \$1.4 billion solar power project, plus recent investments in data centers from Oracle and Microsoft are just a few examples of the confidence U.S. firms have in Chile," says Sergio Rademacher, general director of Microsoft Chile and president of AmCham Chile, which has been promoting trade between the two countries for over 100 years. He offers more reasons why Chile is a destination of choice for investors: "It's an open, investor-friendly, modern country that is one of the most stable in Latin America, has a democratic tradition and deeply respects the rule of law. Plus its institutions are strong and it hasn't really amassed great debt, so has been able to cover the impact of COVID on the economy. Chile is full of opportunities and an ideal environment for foreign investors."

# Worldwide recognition for export quality

Jorge O'Ryan Schütz, General Director, ProChile, reveals how the agency is maintaining the competitiveness of the country's exports in the post-pandemic era



ProChile promotes Chilean goods and services through its extensive worldwide network of offices and via a range of initiatives that include international promotional events, online platforms, and the training, mentoring and disseminating of business intelligence to local exporters. Has the emergence of COVID changed your strategies for maximizing Chile's export potential?

The pandemic has been an opportunity to advance and accelerate our export promotion services in order to continue to have strong commercial presence in different markets. Our new priorities include focusing on international import demand, recruiting new exporters, implementing new market intelligence and management tools, strengthening public-sector alliances and consolidating our efforts in programs involving inclusivity, competitiveness, sustainability and innovation.

**"The pandemic has been an opportunity to advance and accelerate our export promotion services."**

Jorge O'Ryan Schütz, General Director, ProChile

How is ProChile utilizing digitalization to promote exports and innovation?

We created an innovation department a couple of years ago. We have also digitalized all our processes and will be the first public service in Chile and the first export and investment agency in Latin America to be completely digitalized. Since the beginning of the last decade, ProChile has been training our small and medium-sized enterprises in digitalization and e-commerce. Additionally, we are very strong in business-to-business (B2B) and business-to-consumer (B2C) platforms. For instance, we have launched a one-click online service to streamline contact between international importers and our exporters.

We have also developed various international e-commerce programs and collaborate with over 10 of the most important online marketplaces in the world, including Amazon and eBay. Through these, our companies have achieved about \$4 billion in sales. At the moment, our more prominent sectors on B2C platforms include food, wines, manufactured goods and digital services, while the most relevant category in B2B e-commerce is agro-food manufacturing, such as wines, fresh fruits, seafood, agricultural products and the forestry sector. We also offer specialized programs for select groups of

exporting companies, in which we closely support them in priority markets.

Chile has 30 free trade agreements with 65 different countries worldwide. How has this impacted foreign investment into its export sector?

In 2020, Chile's exports reached 201 international markets, with Asia accounting for around 38 percent, followed by North America at 24.2 percent and South America at 15.8 percent. In the past 30 years, we have seen a great expansion in our exports.

This has been the result of decades of public policy, plus free trade and commercial openness. Our free trade agreements are equivalent to 65 percent of the global population and, for foreign investors, they are of great importance. It means companies can have more price-competitive products and services, which in turn means that the end consumer and destiny markets can access them at a lower cost as well.

What part does sustainability play in Chilean exports?

The sustainability of exports is key in a global scenario of resource scarcity and increased demand. Sustainability also generates business confidence, leading to greater attraction of green capital, access to matching markets and differentiation. Some of our sectors are well prepared in this and we are implementing new initiatives that cover areas such as climate change and green hydrogen, which offers an excellent opportunity to diversify our export markets. ProChile is participating in Dubai Expo 2020, where we will be promoting the sustainability of our exporting companies and all the potential in our export products, services and knowledge.

## Facilitating export growth



ProChile supported **over 2,100 exporters** in 2020



Chile's FTAs reach **88% of global GDP**



ProChile exporters had an economic impact of about **\$20bn** in 2020



ProChile has **56 offices** in 41 countries

# Knowledge transfer boosts sustainable quality

Captains of Chilean viticulture are helping to strengthen the country's ecosystem for responsible science, technology, knowledge and innovation

In 2018, the Chilean government announced its ambitions for the future direction of the country's economy when it launched a new Ministry of Science, Technology, Knowledge and Innovation.

"It was created to articulate an ecosystem of science, technology, knowledge and innovation that today is richer and more diverse than ever, and which includes the academic world, the private and public sectors, civil society, plus international networks. The idea is to generate knowledge and transfer it for the benefit of the country," explains Andrés Couve, Minister of Science, Technology, Knowledge and Innovation. "Today, about 0.38 percent of gross domestic product is allocated to research and development (R&D), which is low in relation to other OECD countries. That gap must be covered with greater public investment and by promoting greater private investment. We have a very productive scientific community that generates high-quality knowledge and our challenge is to link that research with industry," he adds.

The pandemic demonstrated the capacities of this community, with Chile's vaccination campaign being one of the fastest worldwide, he says. "Thanks to our scientists' preparedness and existing links with laboratories developing vaccines, we attracted phase 3 trials from AstraZeneca, Janssen, Sinovac and CanSino. That made research an integral part of our vaccination campaign." Despite COVID, his ministry has forged on with initiatives that will contribute to the integrated sustainable development of Chile. "We've gone ahead with, for example, the country's first national science, technology, knowledge and innovation policy; plans for talent development, for centers of excellence and for gender equity; and policies for artificial intelligence and climate change."

The ministry is now working on multiple fronts to boost the knowledge economy, Couve states. "There are a lot of incentives for the private sector to participate in R&D. For instance, we have a very good R&D law that offers attractive tax benefits. The promotion of green bonds from Chile has also been well received, which means that innovative sustainable projects are being financed in areas like e-mobility." Another new initiative is Startup Science that is aimed at young entrepreneurs in high-tech and emerging scientific areas, he reveals. "Through this, early-stage startups can tap into mentorships, workshops and access up to about \$272,000 in financing. It's helping these enterprises to insert themselves in a globalized scenario of entrepreneurship."

At the forefront of promoting knowledge transfer to ensure its products continue to be recognized for their quality, innovation and sustainability is Viña Concha y Toro. Established in 1883, this leading winery is the second-biggest worldwide in terms of the size of its vineyards in Chile, Argentina and the U.S. From those vineyards come distinctive premium wine brands such as Casillero



Andrés Couve, Minister of Science, Technology, Knowledge and Innovation

del Diablo and Don Melchor that are sold in over 140 countries and whose outstanding reputations have made Concha y Toro one of the world's top-five most-admired wine brands, according to Drinks International.

"Over the years, We've taken part in many research projects with Chilean universities and in collaborations with other vineyards. When ideas or production processes emerge, they need to be transferred from an academic atmosphere to more applied scenarios and, as time went on, we realized we needed to add more value to our company to allow us to access, execute and implement sustainable innovation on a grand scale. So we launched our own Research and Innovation Center in 2014," says Concha y Toro's vice chairman, Rafael Guislasti.

Located in the winemaking heart of Chile, this cutting-edge facility is the only research, development and innovation center in Latin America for wine, Guislasti notes. "We are carrying out research in several important areas. First, the purification of the plants. We are involved in research surrounding virus eradication and genetic purification of vines so that they may resist adverse

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Andrés Couve  
Minister of Science, Technology, Knowledge and Innovation

conditions. The second area, which is extremely important for our territory, is how we respond to hydric stress with an intelligent use of water. The third area is the study of consumption, and evolving trends. This might be related to changing tastes, for example, which requires complex research as we export around 75 percent of our wine. A fourth area concerns a 'smart-wine industry' and covers the development of industrial Internet of Things systems and artificial intelligence models for key vineyard and winery operations."

One of Concha y Toro's most important research strands relates to sustainability and its prominence in this area was highlighted in April, when it was certified as a B Company, the global movement of around 4,000 enterprises in over 150 industries that meet the highest standards in social and environmental performance, transparency and corporate responsibility. "Wine is a noble product with roots in a long tradition. We want to keep improving and managing our environmental standards, sustainable techniques and tending to the most responsible agriculture possible," Guislasti asserts.

# Fertile ground for wine and investment

Rafael Guislasti, Vice Chairman, Viña Concha y Toro, provides an insight into how one of the top-five most-admired global wine brands marries excellence in tradition with innovation



What role has the Viña Concha y Toro Center of Research and Innovation in Maule played in the company over the years?

The inauguration of the center is the culmination of an elaborate process. We've taken part in many research projects with Chilean universities and in collaborations with other vineyards but, as time went on, we realized we needed to add more value to our company to allow us to access, execute and implement sustainable innovation on a grand scale. We launched the center with top-notch scientists and embarked on research in several important areas. First, the purification of the plants. We are involved in research surrounding vi-

**"The latest distinction we have received has to do with sustainability, and highlights our corporate activity and the great care we take."**

Rafael Guislasti, Vice Chairman, Viña Concha y Toro

rus eradication and genetic purification of vines so that they may resist adverse conditions. The second area, which is extremely important for our territory, is how we respond to hydric stress with an intelligent use of water. The third area is the study of consumption, and evolving trends and habits in viticulture.

What are some of the key factors that have contributed to Viña Concha y Toro's recognition?

A pillar of Concha y Toro's development is the commercialization of its distinctive wines. The recognition we have received spans a wide range of brands that are in different price ranges. But the latest distinction we have received has to do with sustainability, and highlights our corporate activity and the great care we take in our sustainability policies. This requires constant innovation to respond to evolving demands with an emphasis on how to reproduce best environmental practices on a large scale.

Concha y Toro is known for its focus on the consumer. Can you describe some current trends in consumer preferences for wines and how are you adapting to them?

We have introduced organic wines in response to consumer trends, but this is not the only trend in wine and there are many interesting factors that enter into the field of taste. There are trends wherein consumers are looking for a more moderate level of alcohol, around 10-12 degrees in whites and 12-13 in reds, for example. Some categories that have disrupted the market recently are

sparkling wines, rosés, natural wines and wines that are clearly well executed: regardless of the price of a wine, correct vinification means eliminating errors that could later become unpleasant tastes or aromas and to achieve that on a grand scale involves complex processes and technology.

All of these diverse trends vary and shift relatively quickly. There are times when we sell higher volumes of fresher-tasting wines or ones that are less intense in terms of sweetness, for example. The idea is to anticipate emerging trends and we pay close attention to the tastes of our new consumers, particularly young people who are increasingly drinking more wine.

As a vertically integrated winery, how did COVID impact your activities?

We have redirected the way we commercialize our wines and accelerated e-commerce. We had already been developing online programs and initiatives, but the pandemic put those into overdrive because consumer habits were being modified drastically and permanently. We were also helped by having offices in the U.K., the Scandinavian countries, Brazil, Mexico, the U.S. and China, which allowed us to be close to those markets during the pandemic.

Chile is the world's eighth-largest wine producer. Does the sector present opportunities for international investors?

There are many opportunities for investment in, for instance, the production process—be it in vineyards, nurseries, technologies, labs, equipment or processes. The suppliers all along the chain are incredibly important and need to be in sync with our needs and image. There needs to be constant renovation because there are constant advances in technology.

## Viña Concha y Toro: A global winery



**56 vineyards** and 10,248 hectares in Chile



Casillero del Diablo is the world's **2nd most powerful** wine brand



**13 wine cellars** and 3 bottling plants in Chile



Don Melchor 2018 received a **perfect 100** from James Suckling

# A global reference point for innovation

Across diverse sectors and with the support of government agencies, Chile's innovators and entrepreneurs are changing the world with pioneering technologies

**“The pandemic hit the world hard but it’s also been a tremendous opportunity for many innovative entrepreneurs in Chile to flourish by helping the rest of the world to thrive in this new situation,”** says Ricardo Navarro, founder and CEO of TOC Biometrics.

TOC is one of those companies. Founded in 2010 and with offices in Latin America and the U.K., it uses artificial intelligence (AI) to measure attributes such as fingerprints, faces and irises to verify identities and digital signatures. “The pandemic was a huge opportunity to grow our business. It didn’t change our pipeline of development, but what changed was that customers were all suddenly ready to start using the products we had for remote operations.”

TOC specializes in one-to-one biometric solutions in which, for example, one official ID document is compared to a selfie taken on a mobile phone, he explains. “It’s a much more accurate method and you always have the consent of the user. We’ve helped people open 250,000 bank accounts remotely with this technology in the last month, for instance, with no cases of fraud. If you compare that to doing it in person, the fraud rate is much higher.” TOC’s high-tech innovations are increasingly seen as a reference point in this sector and it received an AI Excellence Award from the U.S.-based Business Intelligence Group in March. “Recognizing people is what TOC does, so it’s nice to be recognized back. Our first aim was to create the best ID verification solution worldwide and we think we have.”

**“We produce 1,000 PhDs annually, which is high given Chile’s size and means we can count on a critical mass of people with advanced studies.”**

Aisén Etcheverry, National Director  
National Agency for Research and Development

Kura Biotech is also a Chilean frontrunner in an emerging industry. “We are the world’s biggest producers of enzymes for toxicology in the context of narcotics testing. We have a large presence in North America, the Asia-Pacific region and are positioning ourselves in Europe. We deliver the best enzymes on the market and our most recent, B-One, has revolutionized the testing process. Five years ago, the hydrolysis of a testing sample would take overnight. With B-One, it’s instant,” reveals founder and chief scientific officer Manuel Rozas.

Kura is now extending its enzymatic niche of expertise to redefine other expanding biotech markets: proteomics, glycomics, genetics and next-generation sequencing for precision medicine. But last year, it pivoted toward COVID, taking just three months to launch two testing kits—a confirmatory test and



Kura Biotech was the first national provider of COVID PCR tests

a screening test that uses RT-LAMP technology to detect the virus at an early stage, states CEO Eduardo Wallach. “Using RT-LAMP created a faster, less expensive process: we get results in two hours in much less sophisticated labs. In the official verification test for the Chilean government, the test had a 100-percent sensibility and specificity score. That sets it as a gold standard. Employers can now test all their employees weekly for a reasonable amount of money with same-day results, which transforms the workplace into a safe space.”

### A hub for technology

Wallach believes that Chile can become a hub for numerous emerging tech-based sectors: “It’s already very solid in biotech, clean energy and AI, for instance, because a group of entrepreneurs started early. Now there is a network for those sectors, including universities with interesting PhDs and undergraduate programs.” The creation of a Ministry of Science, Technology, Knowledge and Innovation is having an impact as well, Rozas highlights. “It’s presence triggers things such as the consolidation of funds. It understands that science must be paid for and is playing a role in that—for example, in science associated with startups.”

One way the ministry has consolidated its efforts is by launching a new National Agency for Research and Development (ANID). “The ministry has completely revamped Chile’s scientific and technological system, with the aim of grouping everything under one unified umbrella. Under the purview of ANID you now find funding for graduate scholarships, individual research projects, our research center for associative projects, applied research, and science- and technology-based innovation (STI). With the structural changes and new funds destined for knowledge transfer, STI and state-run innovation, we can better coordinate interactions between our academics, research projects and applied research,” says Aisén Etcheverry, ANID’s national director.

ANID’s scholarships are an impressive established tool for nurturing innovators. “Around a quarter of the agency’s total budget, which is over \$213 million, goes to our national and international Becas Chile scholarships. Between the two, we produce 1,000 PhDs annually, which is high given Chile’s size and means we can count on a critical mass of people with advanced studies. We also accept foreign students on our national program that has risen up the international rankings, allowing us to import talent,” he comments.

The Science and Innovation 2030 program, on the other hand, is one of Chile’s new initiatives for encouraging entrepreneurs, Etcheverry notes. “The challenge in developing STI is growing entrepreneurial culture and knowledge transfer out of the traditional scientific world. Mechanisms known to



Aintech’s sanitizing solutions are based on copper nanoparticles

accomplish this are technological contracts, startups, spinoffs and a tight-knit relationship between industry and universities. Science 2030 will support universities in their efforts in this.”

### Disrupting traditional industries

While many of today’s Chilean entrepreneurs have chosen new industries as a springboard to reach a global audience, others are disrupting or adding value to traditional sectors. Examples include Jeff Bezos-backed NotCo, which is developing novel plant-based foods with AI and is valued at around \$1.5 billion, and Cornershop, the on-demand grocery delivery startup whose acquisition by Uber for \$1.4 billion was finalized in July. Another, laboratory startup Aintech, has found an answer to a question Chile has been puzzling over for decades: how to add value to its vast mineral resources, especially its copper.

“We realized that nanoparticles from copper, silver and other materials have many uses. We founded the business in 2018, rented a lab, made a dossier for

**“There is a tremendous amount of talent and fluid collaborations between tech companies and universities here.”**

Charles Kimber, Senior Vice President for  
Human Resources and Sustainability, Arauco

investors, raised around \$1 million in our first meeting, and we were off and running. We created a new type of production method for nanoparticles that reaches industrial-scale levels,” says founder and commercial manager Vittorio Stacchetti. Aintech initially turned its attention to developing two disinfectants with copper nanoparticles, Aircop and Decutec. These eliminate 99.99 percent of all pathogens on any surface for 24 hours and 7 days respectively, and have since been certified by the world-leading testing company SGS and other authorities. “When COVID hit, we had to decide whether to continue just as a lab or take the leap to producing a mass-market item. We took on the challenge and invested in factories, personnel, packaging and marketing,” he says. Today, Decutec is registered in various countries and sold to companies in mining, public transport, retail, food processing and other sectors.

To illustrate the endless applications of its technology, Aintech has also produced additives for paint and concrete, is working with Agfa and Mitsubishi Chemicals on products for electronic circuitry and inks, and is investigating solutions for sectors as diverse as agriculture, food and health. It is now about to open a 4,000-square-meter Nanotechnology Research and Development

Center, Stacchetti states. “It will be the first private center of its kind in Chile and the largest in the region. It will contain 10 different labs for microbiology, cellular biology, nanomaterials and electronics, as well as an industrial-scaling component. We invite any interested parties to join us to develop or investigate products—our doors are open to the world as pioneers of a new mass trend.”

A longer-established Chilean pioneer is Arauco, the global leader in sustainable forestry, which manufactures a wide range of products including wood pulp, composite panels and lumber that are sold on five continents. “Innovation has been a fundamental to our development. In the 1980s, we established a center of excellence, Bioforest, where we combine researching and applying next-generation technology with digital transformation and innovation. We add value by building alliances with other companies, universities and the public sector, and examples of the fruit of that would be wood pulp with textile applications and planks with antibacterial melamine finishes,” says Charles Kimber, senior vice president for human resources and sustainability.

Arauco’s forestry and production practices involve state-of-the-art technologies like AI and big data. In 2020, with the aim of better understanding and slowing climate change, it acquired Odd Industries, which has developed AI technology that can count previously uncountable things, such as leaves on a tree. “We also employ LiDAR technology through precise imaging, which provides detailed data on each of our billions of trees. Combining nature with technology is an enriching and powerful formula,” asserts Kimber. He is keen to point out that Chile is an excellent location for innovators: “At first glance, it may seem to be a country that only exports natural resources but, if you scratch the surface, you discover there is a tremendous amount of talent and fluid collaborations between tech companies and universities here and great room for entrepreneurial freedom.”

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# Natural laboratory for green energy technologies

Chile's privileged climactic environment for renewables puts it on target to be a worldwide frontrunner in non-conventional clean energy sources

Chile is becoming a green energy and electricity powerhouse. Its renewable generation capacity has grown by around 1 GW a year for the last five years, 25 percent of its power came from renewables in 2020, and it is well on the way to meeting its targets of being carbon neutral by 2050 and closing its remaining coal-fired power plants within the next two decades.

Few countries are better positioned in this area, says Juan Carlos Jobet Eluchans, Minister of Mines and Energy. "We have the best solar irradiance on the planet in the Atacama Desert and one of the best, if not the best, winds of the world in different parts of the country." Chile is ambitious to take a global lead in not just clean energy, but also in non-conventional renewables and innovative sustainable technologies throughout its energy and electricity

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Sustainability is a commitment to bettering society through the promotion of digitalization and renewable energies, with decarbonization as the top priority. That's why, as part of the Enel Group we will fulfill our pledge to close all our thermoelectric plants, giving them a better use for local communities and all of Chile. With Enel, you can choose a better tomorrow.

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systems. "For example, we've launched a strategy for green hydrogen with clear goals: to be the cheapest producer in the world by 2030 and one of the top-three exporters by 2040. We're offering \$50 million in subsidies to accelerate the development of green-hydrogen projects and many companies, including most of the big ones already operating in Chile, such as Enel and AES Andes, are developing green-hydrogen projects already. If we can't transform the way we produce and consume energy, we won't be able to stop climate change. It's that simple," states Jobet.

As the most important electricity holding company in Chile, with operations across generation, transmission, distribution and other areas, Enel Chile is a crucial supporter of the government's goals for sustainability and innovation. For instance, its current installed generation capacity of 7,200 MW includes over 4,730 MW in solar, wind, hydroelectric and geothermal plants, representing 45 percent of Chile's renewable capacity at the moment. Committed to the total decarbonization of its generation network, Enel Chile has recently shut two of its coal-fired plants, the remaining one will close next year and it plans to have another 2,400 MW of grid-connected renewable facilities by 2023. At the other end of the chain, it distributes electricity to more than 2 million customers in the Santiago metropolitan region and is rapidly building up smart electricity infrastructure and services, which include an expanding electric-vehicle charging network.

**"We have the best solar irradiance on the planet in the Atacama desert and one of the best, if not the best, winds of the world."**

Juan Carlos Jobet Eluchans, Minister of Mines and Energy

Paolo Pallotti, CEO of Enel Chile, believes that the country acts as a natural laboratory for exportable energy technologies and practices. "It has a lot of resources, opportunities and options, and Enel Chile is playing with all the elements available to experiment and innovate. As an illustration, there is an ongoing test on electricity production through sea waves to explore how they can create value. There is a vast range of experience, activity and talent here, and we can run straight from scientific analysis into managing and building innovative new renewable plants." Sustainability will continue to be a driving focus for Enel Chile, Pallotti stresses. "We can't create value for the company, for our shareholders, if we are not creating value for the environment where we are operating."

# Leading the race toward renewables

Paolo Pallotti, CEO, Enel Chile, outlines the electricity giant's plans for the decarbonization of generation, distribution and consumption



Enel Chile appears in the Dow Jones Sustainability Index and received a silver in the Sustainability Yearbook 2021. What is the company doing to transition the country's energy mix toward renewable sources?

Enel is a pioneer in renewable energy. We started years ago in renewables in Chile and the potential for growth here is massive, with extensive areas of high solar irradiance in the north as well as wind power in the south. We are continuing to develop renewable assets and projects primarily in solar and wind technology, mainly because of the efficient turnaround time to market and simplicity of management. But we have also developed the first geothermal plant in South America, Cerro Pabellón, which is in the mountains at 4,500 meters above sea level. It's an obvious example of how to use the natural resources that Chile has embedded in the ground to generate green electricity.

**"Cities can be large contaminators, but they can also be one of the best opportunities to decontaminate the environment."**

Paolo Pallotti, CEO, Enel Chile

Today, we have 3.5 GW of hydro and 1.2 GW of wind and solar renewable assets, but we are building more plants. By 2023, we plan to have 2,400 MW of new renewable capacity connected to the system, 1,300 of those are under construction and we have set a target to reduce direct carbon dioxide emissions by 64 percent by 2023. The remaining 2.7 GW of our capacity is thermal, gas and our last unit of coal that will be phased out next year. We subscribed to the National Decarbonization Plan led by the Ministry of Energy in June 2019 and committed to close all our coal-fired plants by 2040. We stuck to our promise for the closure of the first two and are on target to reach the third by May 2022. By that time, our generation matrix will be totally free from the use of coal. We have also made the first move to build a pilot project for green hydrogen in the south of the country and are ready to start storing energy.

How are you adding sustainability to other parts of the electricity system?

We continue to develop innovative electricity supply services for our 2 million clients in the metropolitan area of Santiago. Mobility is a huge pollutant and we can reduce this contamination by transitioning to sustainable electric mobility. Enel Chile has helped Santiago become the first city outside China to have an important fleet of electric buses, for example. Private mobility is another key, so we are improving our network of chargers for electric cars and

have a five-year plan to install 1,200 chargers from the north to the south of Chile with a charging area every 60 kilometers.

Cities can be large contaminators, but they can also be one of the best opportunities to decontaminate the environment. We have projects to create wholly electric buildings and sensors that help adapt electric lighting in intelligent ways to improve energy efficiency in public lighting is another example. We are also digitalizing the grid. By improving the use of the electricity in homes, businesses and communities, we are helping the environment and supporting the fight against climate change while providing the client with better, safer and less expensive services.

Does Enel Chile collaborate with other entities on research?

Enel has group-level innovation hubs, one is in Santiago, and we have regular meetings with the startup community. We also have relationships with entities such as the MERIC Foundation and Huinay Foundation, and with universities. Sometimes, the relationship between universities and the private sector is limited to a company putting up money and the university researching something, but we create a structured relationship with a common goal.

What major challenges does Chile face in developing renewable capacity?

Transportation is key. The more you add solar in the north and wind in the south, the greater the bottleneck of energy transportation could be. To tackle this, a new interconnection route is expected to be finalized by 2028. In the meantime, it should be possible to adopt technical solutions that improve the situation. There are also certain approval processes that need to be reviewed.

**Enel Chile's sustainability targets**

- 2.4 GW new renewables by 2023
- Coal-free generation by 2022
- Direct CO<sub>2</sub> emissions down 64% by 2023
- 5-year plan for 1,200 EV chargers

# A clear vision of tomorrow's power systems

Chile's rapid advance in clean energy technologies has benefited from an "all-together" mindset from every stakeholder

Investment is flooding into Chilean clean energy, with over 3 GW of new generation capacity from renewable sources coming on line in the first eight months of 2021. According to Minister of Mines and Energy Juan Carlos Jobet Eluchans, "The two sectors under my remit account for more than 50 percent of investment being made in our country at the moment."

An obvious reason for this is its natural resources. Not only does it receive 4,000 hours of sunshine a year in its northern regions and blustering winds in Patagonia, but its long coastline offers opportunities for marine energy, its rivers have a hydroelectric potential of 11 GW and its mountains contain important geothermal reserves.

But there are other factors that make it an attractive destination for investors in sustainable technologies, says Jobet. "We have free trade agreements with 88 percent of the world's gross domestic product, which is important if you want to use our natural resources to produce and export green hydrogen, for example. Also, we have the right institutional framework, well-developed sector regulations and a very clear vision of where we're going with clean energy and green hydrogen. That vision was built through a process in which all the political spectrum and stakeholders participated, including non-governmental organizations, local communities and scientific experts. It's not the vision of this government; it's the vision of this country and it's a stable vision."

**"We have the right institutional framework, well-developed sector regulations and a very clear vision of where we're going with clean energy."**  
Juan Carlos Jobet Eluchans, Minister of Mines and Energy

Ricardo Manuel Falú, CEO of Chile's largest energy producer, AES Andes, agrees: "It's one of the few countries that has a 'national project' it's working toward for future generations, not for future elections. AES continues to support our communities, invest and plan for the future here because we believe in Chile: it's a country that is rich in clean energy, which is going to help the world become carbon free as the planet's largest producer of green hydrogen."

With operations in Colombia and Argentina as well as Chile, AES Andes is currently responsible for 25 percent of the country's energy generation, while another of its vital contributions is an international electricity transmission line that runs between Chile and Argentina. At the end of 2020, it had a total installed capacity of 3,512 MW that is based on diverse resources including hydroelectric power, solar, wind, biomass, battery storage and coal.

2019's voluntary decarbonization agreement, in which Chile's government and energy generators committed to removing coal from the energy mix by



Juan Carlos Jobet Eluchans, Minister of Mines and Energy

2040, is a perfect illustration of the country's "all-together" mentality, says Falú. "The government didn't have to resort to the threat of fines, legal actions, compensation or incentives, and it's an example of a model of cooperation that could be exported on a global level. AES Andes signed the commitment in 2019 promising to close two plants by 2022 and 2024. The first one closed two years early and the second will be closed three years earlier than agreed. We are closing our plants as soon as the system will allow us."

### Stepping up the pace of Chile's energy transition

Between 2018 and 2023, AES Andes plans to have invested \$2.8 billion in clean energy technologies and facilities within Chile that will increase its renewable capacity by 165 percent and reduce the amount of carbon dioxide per MWh of its portfolio by 44 percent. This April, the company also changed its name from AES Gener to AES Andes in order to stress its robust and growing focus on sustainability in energy, a focus that made it the first Chilean energy company to be acknowledged by the Dow Jones Sustainability Index.

"The name change has to do with a shift in our corporate image to better reflect who we are and our purpose, which is to fight climate change by accelerating the future of energy, together. We are moving beyond the traditional role of a power company into a wider array of business solutions with a customer-centric focus. Therefore, we have moved away from Gener, rooted in generation, and have taken on Andes in honor of the mountain range that forms a backbone and link for our three markets," explains Falú.

"Beyond a name, what we are today is the reflection of years of work delivering reliable energy with sustainable, innovative and competitive solutions to our customers, communities and the sector. We have simplified our corporate mission and values: we are accelerating the future of energy, putting safety first, applying the highest standards and working all together," he adds.

In 2009, Chile was chosen as the location for the first battery energy storage capacity deployed by the AES Corporation worldwide and the country's ability to collaborate on projects for common good has advanced other transformative innovations, such as AES Andes' Virtual Reservoir solution, which integrates batteries with run-of-river hydropower, and its Enhanced Solar initiative in the Atacama Desert that combines 180 MW of solar power with 112 MW, five-hour storage. According to Falú, "To be able to translate these pioneering energy sources into numbers and remuneration for the value they bring to the national energy supply, we needed the Ministry of Energy, Chile's National Energy Commission and the National Electric Coordinator to come together to conduct fluid conversations with the common goal of accelerating the decarbonization of the national grid. That is the key to launching many solutions that can later be exported to other markets."

# Safe and sustainable energy improves lives

Ricardo Manuel Falú, CEO, AES Andes, introduces the company's strategy for accelerating the future of Chilean energy to the highest standards through innovation



### How is AES Andes helping Chile to decarbonize its energy sector?

In 2018, we launched our Greentegra plan to accelerate the country's decarbonization by incorporating renewable energy and batteries into our portfolio and shutting coal plants, which we need to do responsibly so as not to jeopardize Chile's energy supply—by 2024, we will have shut down, sold or separated all contracted commercial obligations for 72 percent of our 3,015 MW of coal capacity.

Our strategy is to capture the great solar potential of the north, the wind of the south and to deploy batteries to add zero-emission capacity to the grid. As more and more green energy is incorporated, less and less coal will need to be employed. The intent is to rely on coal only as a backup for when the sun is not shining and the wind is not blowing and, at the earliest possible date, to phase it out all together with batteries, green hydrogen or other clean technologies. At AES Andes, the acceleration of a net-zero-carbon energy future is more than our ultimate goal, it's the clear mandate from our society and children.

**"The acceleration of a net-zero-carbon energy future is more than our ultimate goal, it's the clear mandate from our society and children."**  
Ricardo Manuel Falú, CEO, AES Andes

### What are the company's main focuses going forward?

Our portfolio and roadmap cover three areas: renewable energy, closing our coal plants and digitalization. In renewables we have solar, wind, batteries and green hydrogen. With respect to digitalization, it has facilitated things for us immensely. For instance, we can now operate our plants remotely through our Smart Center. Digitalization allows for a more efficient operation and planning of the national electric system and will contribute greatly to our mission to fight climate change. With precise data, we can also forecast how to safely shut down coal plants by anticipating the impact it's going to have on the national power supply. Digital modernization has a positive effect on the end user as well: the more we can add intelligent and flexible solutions to our processes, the better and more cost effective we can be.

### Can you describe a few of the innovations AES Andes is working on?

We are working on many projects, but I'll mention just three. The largest hydro power plant being built in the country is Alto Maipo, which is set to start production by the end of this year. It was a great challenge, with an im-

mense engineering effort needed to dig 74.6 kilometers of tunnels to provide 531 MW of run-of-river hydropower to Santiago, 50 kilometers away.


Our Virtual Reservoir is a project that integrates batteries located next to the hydro plant with run-of-river hydropower. This type of energy is generated through water flow and, instead of injecting it directly into the system, we store it in a battery for peak hours. There are plans to expand the current installation to accommodate 250 MW for a five-hour battery.

The third initiative is called Enhanced Solar: our Andes Solar II B solar-plus-storage project will combine 180 MW of solar from the Atacama Desert with a 112 MW, five-hour-duration energy storage system. We maximize the power of the sun by storing it and injecting it into the system during the night for a more cost-effective, dependable and environmentally friendly source of energy.


### Does AES Andes collaborate with others on research projects?

AES Andes and Chile as a country has innovation in its DNA. To innovate, one needs research, academic support and industry in an open ecosystem of entrepreneurship with common good as the primary objective. As a company, we work with many universities in several programs surrounding innovation. We participate in the Chilean Institute of Clean Technologies that is being formed and we are involved in the Chilean Association of Green Hydrogen. In addition, Energy for Talent is an AES program where we scout out young professionals and students with a passion and desire for having a positive impact on society—we have many effective ways to find this talent, which is so fundamental for our transformation and future.


### AES Andes' Greentegra strategy




**South America's leading renewable company**



**Investment of \$3.2bn between 2018 and 2023**



**88% of investments bound for Chile**



**+165% renewables in Chile by 2024**

# Resilient financial system is the perfect sandbox

Stable policies, effective regulation, a trusted banking sector and successful fintechs are supporting Chile's economy, while also promoting financial inclusion and innovation

The pandemic has validated the resilience of Chile's fiscal position and policies, says Minister of Finance Rodrigo Cerda Norambuena. "We entered 2020 with a low national debt and the assets to fund the relief effort required without compromising our long-term financial sustainability."

Chile has followed a prudent financial model since 2004 and the constitutional reform process it is currently going through will add even more stability to its legal framework, he states. "This exercise is showing how politically mature we are as a country and will allow for stable legislation for the next 30-40 years. It's positive news for investment because these laws will allow for long-term business planning." According to Cerda, "Chile will come out of the pandemic with fewer savings and more debt, like all countries, but our debt will most likely be under 40 points of gross domestic product."

This solid foundation enables Chile's financial authorities to innovate to drive the economy forward. In January, for instance, it issued the first-ever multi-tranche green and social bonds across both dollars and euros. "We're creating new financial structures that support climate-related, environmental or social projects. There's a lot of interest in these, which has allowed us to apply exceptionally low rates," explains Cerda. The government has also recently enacted a Financial Portability Law that, by letting users move financial institutions more easily, is likely to boost competitive innovation in the financial sector. And in September, it presented the draft of a new fintech law, which will introduce a targeted legal framework and incentives for operators in that area. "Few countries in Latin America have this type of financial architecture and Chile is going to be one of the leading countries in this space," he asserts.

The pandemic also highlighted the strength of its banking system. "The Central Bank of Chile has been one of the world's most proactive and effective in its response to the crisis," says its governor, Mario Marcel Cullell. "Our first challenge was to extract information about its impact on the economy more or less in real time. Due to our previous strategic planning, we were able to work more from a big-data type of model, rather than from conventional macro-statistics, which allowed us to respond extremely fast." Among other stabilizing initiatives, the bank provided liquidity for a substantial package of stimulus measures, he notes. "Those are composed mostly of allocations to households to stimulate consumption, there was an increase of around 15 percent in funding for infrastructure and guarantee schemes facilitated lending from banks to small and medium-sized enterprises." Marcel believes these measures have helped limit the pandemic's economic impact. "By the third quarter of 2020 the economy had started to recover, it has continued to do so and probably by the beginning of 2022 it will have returned to the levels of mid-2019."



Rodrigo Cerda Norambuena, Minister of Finance

Many of those measures were facilitated by a banking sector that has been ranked among the top-10 most solvent worldwide, comments José Manuel Mena Valencia, president of the Association of Banks and Financial Institutions. "In the last decade, we have reduced the number of entities and there are currently six large banks competing for a 20-percent share of the market, all of which have important parent companies or groups behind them." Chile is aiming to fully align with Basel III regulations within four years and Mena is confident this will be achieved. "We're competitive on an international level. In the last five years, our banking system has grown its capital base by \$9 billion or 30 percent. The public trusts our banks and has demonstrated it through deposits and account balances that have grown significantly."

A key way banks supported the country through the crisis was by accelerating digitalization. "Today, we have around 13 million digital accounts. Chile has visionaries that understand risks but also emerging opportunities. They are developing products, engineering technology and managing the newest risk factors. They have put Chile on the map for the innovation in our banking system and will help us achieve greater financial inclusivity," he says.

**"We're creating new financial structures that support climate-related, environmental or social projects."**

Rodrigo Cerda Norambuena, Minister of Finance

A startup doing just that is Migrante Sociedad Financiera, one of a thriving community of nearly 200 Chilean fintech firms. "Our founding in 2018 grew out of the problem immigrants to Chile, mostly from Venezuela and Haiti, were having accessing financial inclusion and bank loans. We assist individuals or businesses to establish their lives in a new country; for example, we help them purchase mobile phones or vehicles, provide financial guarantees to rent apartments, help validate qualifications and assist in starting businesses," states CEO Diego Fleischmann.

To date, Migrante has provided credit to over 11,000 clients, whose numbers are growing at a rate of 37 percent a month, he reveals. "There's high demand because we give them a good interest rate, charge no commission or fees, and we provide excellent service." Migrant has already expanded into Peru, he adds. "I envision our company operating throughout Latin America. As a fully digital fintech, there are no frontiers and, if something works in Chile, it will most likely work in another country. It's the perfect sandbox."



# Accelerating the future of energy, together

Wherever we are, we work together to improve lives by providing greener, smarter and competitive energy solutions the world needs.

At AES Chile, we have more than 1000 MW of new, innovative and sustainable energy solutions under construction.

At AES Andes, we're accelerating the greener energy transition in Chile and Colombia by adding 2.4 GW of renewables and voluntarily accelerating the retirement of coal facilities.



# Latin America's pioneering digital hub

Believing that having digital inequality in the country is totally unacceptable, the Chilean government is investing heavily in fiber-optic connectivity and 5G

Chile is racing ahead with investments in telecommunications. According to Minister of Transportation and Telecommunications Gloria Hutt Hesse, "One of our most critical initiatives is a transcontinental fiber-optic cable designed to reach Asia after passing through Australia and New Zealand, which will consolidate Chile's role as the digital hub of Latin America."

National infrastructure is being expanded too in a range of projects that will bridge the country's digital divide. The biggest is Fibra Óptica Nacional, a 10,000-kilometer backbone, the construction of which is being heavily subsidized by the government. As well as providing connectivity for 203 of Chile's more isolated communities within four years, this will be open to all national and international digital service providers that want to connect to it.



Gloria Hutt Hesse, Minister of Transportation and Telecommunications

This year, Chile also completed the first tender in Latin America to assign 5G spectrum. "About \$453 million in funding was raised from the participation fee alone. 5G is one of today's biggest opportunities and we estimate that required investments will be \$3-4 billion in equipment, support and technological platforms. In Chile, we are avid consumers of new technology: there are 54 million telecoms' accounts for our 19 million inhabitants, most have 4G and we expect a quick deployment and adoption of 5G," she says. Subtel, the country's telecoms regulator, estimates that 5G-related innovation will add an annual 1 percent growth to Chile's economy. "We've never seen a transition so well supported by a public-private ecosystem. Already, 19 universities have 5G labs with researchers working alongside entrepreneurs," reveals Hutt.

**TENEMOS  
LA RED  
QUE MÁS CRECE  
PARA SEGUIR MEJORANDO  
TU EXPERIENCIA**

# Private sector puts economic growth first

Christopher Laska, CEO, WOM, illustrates the company's efforts to bring the benefits of cutting-edge telecoms technologies to the country's businesses and citizens



Having only entered Chile's telecommunications market in 2015, WOM boasts millions of customers for its mobile services, launched a fiber-to-the-home offering in February and was a substantial winner in the country's recent 5G and fiber-optic development tenders. What do these latest wins entail?

In the 5G tender process, we won a share in all four bands we went for. We are probably the fastest-growing mobile operator in Latin America and, with this win, we went from fourth to perhaps number one in Chile in terms of spectrum portfolio. The process was an excellent example of how a government can have competitive auctions while incorporating strict requirements to cover hospitals, key institutions and rural areas where there is no connectivity.

WOM is also building 7,000 kilometers of the Fibra Óptica Nacional (FON) backbone system, which is huge. Chile has a very demanding geography, including deserts and high mountains, and, again, the government is being strict in its rules for the build out, but it is also putting up about 80

**"WOM's strategy has a strong focus on sustainability and we want our services to have a massive positive impact for Chileans."**

Christopher Laska, CEO, WOM

percent of the funding. I call FON a superhighway because this fiber is going to demand a lot of capacity in the future. New opportunities will be born out of this infrastructure and it will bridge the digital gap. It's also going to be the superhighway for our own 5G network, serving all of our cloud computing services.

How else is WOM helping to improve connectivity in Chile?

WOM's strategy has a strong focus on sustainability and we want our services to have a massive positive impact for Chileans. We have a multi-faceted community program to help with connectivity. Last year, we entered into an agreement with the Ministry of Social Development to provide 100,000 SIM cards for underprivileged students to enable them to study from home. We also collaborate with an organization called TECHO, which works all over Latin America in low-income neighborhoods, to provide families with connectivity.

These are things that really make a difference in peoples' lives and the feedback we've had from those people has been extraordinary. Now more than

ever, participation has become central to WOM's activities. Of course, in the long term, we are creating loyalty in the people we help when they are most in need.

How important is innovation to WOM?

WOM was the first company in Latin America to do a 5G pilot, which stems from our culture of innovation and learning. In our view, it's much better to work with partners. That's why we teamed up with Chile's Production Development Corporation to launch a Startup Challenge online during the pandemic. We provided mentoring and real-life 5G use cases from around the world, and had three winners that immediately received funding and international attention, which included using drones in mines and high-definition cameras at airports to detect COVID or movement.

This year, we announced a partnership with Universidad de Concepción to create a 5G lab there, a talent program to link students with the business community and a research-paper initiative. It's important to diversify where opportunities are available, so that they aren't all centered in Santiago. Through our alliance with the University of Concepción, we are getting much more connected to other communities and untapped talent. Over time, we intend to develop a lot of talent regionally.

When it comes to innovation, the model I like uses a trend wheel when doing a pilot to discover what areas are furthest away from our core services. If something emerges that seems promising, we then evaluate if we will build it out ourselves, recruit more competency to take it on internally or outsource it to startups to build up. It's a model that helps us to prioritize and keeps us lean.

**WOM adds value to telco services**

- Plans to invest **\$500m** in Chile over 3 years
- Building **7,000km** of fiber-optic backbone
- Fastest-growing** mobile operator in Latin America
- The only Chilean operator with **4 bands of 5G spectrum**



# Regional approach to bridging the digital divide

By focusing on connecting neglected communities to ultra-fast broadband, Mundo has become Chile's second-largest fiber-optic network operator

Established 27 years ago in the city of Concepción, Mundo started life as a small, provincial cable television company. Today, it operates Chile's second-biggest and fastest-growing fiber-optic network, and currently supplies over 600,000 households and 10,000 businesses around the country with ultra-fast broadband internet, plus additional pay-TV and telephony services.

Mundo's rapid transformation started in 2015, when a new CEO, Enrique Coulembier, arrived from Spain with decades of cutting-edge telecoms experience. "Most technology was then concentrated in Chile's big cities. I saw a company with the potential to change this—we started deploying fiber optics to neglected rural areas to bridge the digital divide with excellent, high-capacity services that everyone can afford," he reveals. Relying on its own capital for growth, Mundo has built a network that represents 50 percent of Chile's recent fiber-optic deployment and provides the country's best broadband per-



Mundo has built 50 percent of Chile's recent fiber-optic deployment

formance. By the end of 2021, it will provide connectivity to 3 million homes in about 50 percent of the country's communities, says Coulembier. "Unlike others, we do everything ourselves, thus deploying our ultra-fast network rapidly while saving costs." Those savings are passed on to the customer, which helps explain why Mundo saw its client numbers grow by 77 percent last year to make it Chile's third-largest residential internet provider.

Focused on becoming Chile's number-one telco, Mundo will continue to take its services to parts of the country that remain unconnected. It is also widening its portfolio: in 2020, for instance, it launched a nationwide mobile virtual network operator in collaboration with Suma Móvil and Movistar. According to Coulembier, "With such a large client base, it's easy to plug in more services and we are also increasing our share among enterprises of all sizes. In terms of technology and future growth, we are extremely well situated."



## WE WORK EVERYDAY FOR DIGITAL INCLUSION IN CHILE

- Mundo is present in 8 regions, more than 160 communes, from Region Valparaiso, to Region Los Rios.
- More than 2,800,000 potential homes with optical fiber.
- The first to offer 1,000 Megabytes, the fastest speed in Chile.
- More than 40,000 km of optical fiber along Chile: 6,000 km of backbone networks and 34,000 capillarity networks (last mile).
- Recognized by nPerf for the second consecutive year in 2020 as the company with the best internet service in Chile.
- Second optical fiber operator in Chile.
- 76.7% growth rate in home internet clients.

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# Rapid deployment of fiber optics to isolated areas

Enrique Coulembier, CEO, Mundo, explains how the company is able to deploy its high-quality network and services faster than others in the industry



Mundo operates Chile's second-most extensive fiber-optic network. How has that network and your business model developed since you joined the company in 2015?

At that time, coaxial cables were reigning, the market was wary about adopting fiber optics in rural regions of Chile and no one could work with us to deploy networks to unconnected communities that had been neglected. As a result, we used our own resources to go to places where connectivity was a true challenge.

Our model is to have a massive capillarity of fiber optics, not only deployed in 100 percent of the homes in areas we cover, but also laying down fiber-optic infrastructure everywhere possible in a process we have made efficient in both cost and deployment capacity. To reach outlying areas and create total interconnection between regions, our network routes also go through trade epicenters, such as Santiago. Before we knew it, we had developed a fiber-optic backbone of 6,000 kilometers that serves eight regions along Chile, despite its complex geography.

**"We already have more than 600,000 connected customers, making us the third-biggest home internet operator in Chile."**

Enrique Coulembier, CEO, Mundo

By the end of 2021, we will have installed more than 3 million homepasses and we already have more than 600,000 connected customers, making us the third-biggest home internet operator in Chile. We are deploying fiber optics to an additional 120,000 residencies per month at the moment and will continue to go to isolated areas to connect all Chileans to our network. Our plan is to reach 4,000,000 homepasses and have more than 1,000,000 connected clients by 2023.

One advantage of our services is that our prices are much lower than other suppliers. However, this does not mean the quality of our service is worse: we are currently offering the best internet service in Chile in terms of capacity and our minimum service is 500 symmetric megabytes per second, which has been recognized by the independent French testing company nPerf as the fastest speed in Chile.

How is Mundo managing to grow its network so quickly while also providing its increasing customer base with excellent services at a rea-

sonable price without calling on external public or private investment?





We have kept costs and tariffs down by avoiding big-name over-priced equipment suppliers and by generating our own know-how in fiber optics: as technological developers and integration visionaries, we have made efficient use of open-source solutions and innovative technologies. We also employ a large team of highly skilled technicians who are constantly coming up with new deployment ideas to connect hard to reach places. In summary, Mundo has created a well-oiled machine for both building fiber-optic networks and capturing clients, and our growth has always been organic.

Is Mundo supporting the introduction of 5G services in Chile?

5G deployment will cause another industrial revolution for Chile and the world, and Mundo will be a part of that: our fiber-optic network is available for future third-party providers to set up their 5G services and many telecommunications companies have already come to us for interconnection deployments.

It should be noted that the transformation to 5G means more than just changing equipment in existing cell towers. In large urban areas, it will require a massive infrastructure rollout to situate antennas every 200 meters and mini data centers to store data as technology expands in each industry. All of this infrastructure needs to be supported with something that offers exceptionally low latency and a great deal of capacity and, thus far, that is fiber optics. From day one, Mundo has possessed the perfect solution for these requirements.

## Mundo: Connecting Chile's regions

 <b>2nd-biggest</b> fiber-optic network operator	 <b>Fastest growth</b> in Chile for connections and customers
 <b>3rd-largest</b> home internet operator	 <b>Quickest internet</b> speeds in Chile

# Distrupting the market for mobile services

A new operator in Chile's mobile sector has found success by lowering costs and adding transparent value for its customers

Owned by U.K.-based investment fund Novator Partners, WOM entered the Chilean mobile telecommunications market in 2015 after acquiring an existing operator, Nextel.

There are a number of reasons Chile was picked, says CEO Christopher Laska. "Novator is a strategic, longer-term investor that had been successful in telecoms in several markets, including Poland. It chooses locations based on the economy and its development prospects, as well as the rule of law. Another important factor in Chile was that the other players' policies were not transparent and prices were astronomical."

Within six years, WOM has lowered data prices by almost 95 percent per gigabyte, decreased voice-call costs by 70 percent, become the fastest-growing mobile operator in Latin America, and the biggest winner in Chile's recent tenders for 5G spectrum and fiber-optic network development.



WOM was the big winner in Chile's 2021 5G-spectrum tenders

"Our differentiation is value for money, we have continually created value and communicated it to our customers. As a disruptor or an 'un-carrier', like T-Mobile in the U.S., there's no fine print. What you see is what you get. By investing in what matters to customers, you avoid superfluous items. This is translated into profit and is what has put us at the top of the telco rankings in Chile for efficiency," he states. Laska is convinced that development of Chile's 5G and fiber-optic capacities is opening opportunities in numerous industries. "In sectors such as healthcare, forestry, mining and wineries, there are many real-time monitoring applications for 5G. To take advantage of some of those opportunities, WOM partners with public agencies, universities, startups and other companies on innovative projects, he notes. "If we build a bigger pie together and contribute our own expertise where it's needed, rather than trying to do everything on our own, we will get where we want to be sooner."

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**9 DATA CENTERS** in Chile Peru and Colombia

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# Realizing the potential of new technologies

Fernando Gana, CEO, Grupo GTD, describes how the entrepreneurial and innovative regional telecommunications group is expanding its international footprint



Founded in 1980, Grupo GTD is now a leading multinational provider of internet, telecommunications, data, cloud and digital transformation services. It has always been a pioneer and developed Chile's first fiber-optic network in 1991. Today, GTD's fiber-optic network extends to over 50,000 kilometers and it has become a major player in data centers, with nine facilities in Chile, Peru and Colombia plus unique connection nodes in Brazil and the U.S. How has GTD evolved over the years?

Our core business is centered on connectivity and IT services for corporations and businesses, and we've grown up alongside Chilean industries, accompanying them in the digital transformation, and now we are doing the same in countries like Peru, Colombia, Ecuador and Spain. The installation of mega data centers opens up a Spanish-speaking world centered on the cloud in Chile, linking up Miami, Los Angeles and Mexico City to Latin America. As Chile is becoming a regional digital hub, mining, agriculture, retail and

toward transforming the group into a Latin American technology company. This requires setting up centers of excellence in each of the countries in which we are located. Secure Soft contributed superior knowhow from its vast experience in banking and retail, which we were able to apply to Chile. The synergy also opened the door to Ecuador and prepared us well for North America, Mexico and to expand further in Latin America.

We face geographical expansion in two ways. If there are new territories into which our clients are expanding; we follow them, exploring and uncovering business cases. We usually look for targets that allow us to diversify our income streams. In Spain, for example, the opportunity has until now been more focused on core infrastructure. The fact that countries in Europe are asking us, a Latin American company, for service delivery is incredible, but we are known for taking care of our clients and having their interests above our own.

Where do you see GTD in five years' time?

I see GTD as a strong player in Latin America and other geographies, including Europe and the U.S., with a clear aim of establishing ourselves in the most important global development epicenters for the good of our clients. As an entrepreneurial company, the primary challenge we face is to continue developing projects that put us to the test and make us better engineers and service providers. In the end, innovation is the ability to change the form in which companies operate or even to revolutionize an entire industry. Realizing the potential of AI, big data, machine learning, the Internet of Things and 5G requires a company like GTD, with a long-term vision that adds innovation and entrepreneurship to investigation.

**"Innovation is the ability to change the form in which companies operate or even to revolutionize an entire industry."**

Fernando Gana, CEO, Grupo GTD

services in general have great potential to create digital transformations in their ecosystems. GTD's proximity to our clients allows us to explore new business models with them. One example is the deep digital transformation we have developed in the salmon industry. Together with allies throughout our technological ecosystem, we have deployed fiber optics into fish cages, and integrated cameras with artificial intelligence (AI) and blockchain to track the fish and ensure that our client's salmon reaches Japan, the U.S. or Europe with digital traceability certifications. Our efficacy in these types of activities combines the use of cutting-edge technology with our 40-year investment in infrastructure.

GTD has a history of successful expansion through acquisition. In 2020, for example, it acquired Peru's Secure Soft, a leader in cybersecurity services with additional operations in Colombia and Ecuador. What does Secure Soft bring to GTD and what is your model for future expansion?

When evaluating a prospective partner or company to acquire, a key element is their dedication to clients. After exploring several options, we found that type of culture and the required specialization in Secure Soft. From a strategic perspective, it was important that they be outside of Chile in our march

**Chile's connectivity in numbers**

**1st** in Latin America to issue 5G licenses

**1st** in Latin America in the Digital Readiness Index

Fiber-optic backbone doubling to **36,000km**

**60%** increase in fiber-optic cabling during the pandemic

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#UnboxingChile

**Alexis Sánchez**  
Chilean international football player



Chile  
Creating Future

