

Power in Peru

The country's potential is far from being fulfilled

Although Peru has been one of the best-performing economies worldwide over the last decade, its energy sector is still small in absolute numbers. Consumption levels per capita are low, even by Latin American standards and demand growth is highly dependent on new mining investments. Successive governments have kept energy prices low to encourage the country's competitiveness; and regional interconnection, which could provide the industry with considerable export revenues, especially to Chile, is not under immediate discussion.

Yet investors continue to come. Generators continue developing new ventures, with the Peruvian state guaranteeing long-term pricing through power-purchase agreements (PPAs). Big international consulting and construction firms have found in Peru a key emerging market to offset the decline of projects in Europe. The fact that the figures for installed capacity and energy consumption remain very modest means that, at projected GDP growth rates of 3-6% annually over the next decade, there is nowhere to go but up.

Energy matrix - the hydro/gas balance

While electricity generation was dominated by hydro until recently, in 2004 the arrival of natural gas from the rich Camisea fields was a transformational moment. By 2013, thermal gas generation already accounted for over 40% of the energy matrix, while hydro represented just 53%. The rest was split between non-conventional renewables (2%) and some thermal generation using coal and liquid fuels.

Gas seems to have reached its peak, though. As critics voice their concerns that it is a finite resource and that it should anyway be used for more value-added processes (such as petro-

chemical plants), the government has announced its intention to give a new impulse to hydro generation.

The National Energy Plan 2014-2025 states that 60% of the matrix should come from renewable resources, including traditional hydro. "We do not intend to increase the participation of gas", said Eleodoro Mayorga, Minister of Energy and Mines, who pointed out that at 7% growth levels in energy demand, the installed capacity will need to double in ten years time (it currently stands at less than 8 GW).

According to data from the Ministry, the country is adding over 5 GW before 2021, consisting of 1.4 GW of thermal gas and diesel generation in the so-called 'Southern Energy Node'; 200 MW at the Quillabamba thermal gas plant; 2.4 GW of hydro projects under construction until 2018 and 1.2 GW of new hydro projects in a long-awaited tender process by ProInversión. Vice-Minister of Energy Edwin Quintanilla anticipates that, after a slower than expected 2014, growth will be strong for the period 2015-2017: "We can confirm that energy demand will increase by no less than 10% annually over the next three years because there are infrastructure projects underway and new mines are going to be built. In that respect, growth is assured".

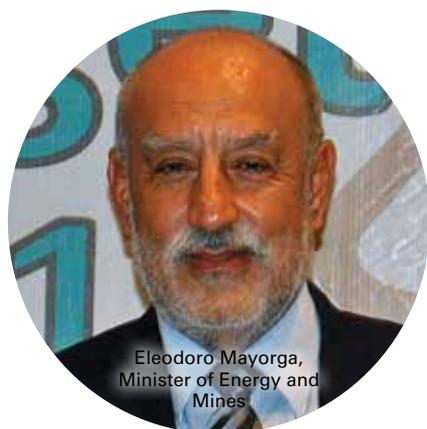
Peru's energy prices

Roberto Santiváñez, partner at local law firm Santiváñez Abogados, suggested that the tender system with a regulated price needs to change: "The State just guarantees that a price will be paid by the users through tariff increases, yet the demand cannot absorb cost overruns forever. At some point there will be a breaking point".

Carlos García, Peru managing director of IMAP, an investment



Photo courtesy of
Duke Energy.



Eleodoro Mayorga,
Minister of Energy and
Mines

bank, said: "Today there is no hydro project with costs below \$2 million per MW. How is it possible that we privatized Electrolima in 1994 with a price of \$32/MWh and today we are at just \$40/MWh? This variation does not match inflation rates and is not sustainable".

That view is challenged by the government. "In all our tender processes there is competition. Investors always look for higher profits but today's margins, sitting at around

12%, are reasonable", says Carlos Herrera, Executive Director of ProInversión.

As a result of low prices, the market for new hydro plants is increasingly populated by construction firms that can benefit from the synergies of building the projects themselves. Odebrecht Energía, for instance, is constructing the 456-MW Chaglla power plant. Another example is Isolux-Corsán of Spain, which won a contract to build the 302-MW Molloco hydro facility.

ICA of Mexico, which has extensive experience building hydro projects for the CFE in its home country, is also entering the market, both as a contractor and as an investor. "We compete against gas, which is far cheaper than clean energy, so we do not have a level-playing field. Besides, the operator assumes all risks: design, construction, and energy sale. All these risks push costs up," said Luis Flores Mancera, Regional Manager of ICA.

César Butrón, President of COES, the industry regulator, said: "Definitely, the price of \$45 per MWh cannot sustain the construction of hydro projects. Consumers,

either distributors or large clients such as mining companies, will have to accept long-term contracts of \$65-\$70. The price will have to increase little by little".

While this process is taking place, the current scenario of slower growth than expected in 2014 has pushed generators to search for increased efficiency. Duke Energy, for instance, decided to divest its Las Flores thermal gas plant, as it could not reach a deal for gas supply within the terms it had anticipated. The company is focusing on optimizing its two hydro plants, Carhuaque-ro and Cañón del Pato, and an integrated gas facility, Aguaytía, for a total of 550 MW. "Energy prices have decreased since the startup of Camisea, and the country has accumulated savings of \$20 billion. The challenge for generators like us is that we have to be more efficient," says Raúl Espinoza, general manager of Duke Energy in Peru.

Tatiana Alegre, general manager of Termochilca, which operates the Santo Domingo de los Olleros 209-MW thermal gas plant, explained that electricity demand was expected to expand by 12% in 2014, whereas it only grew by 5-6% in the end. "This has pushed marginal costs down, to around \$20/MWh. For 2015 the prospects are better, but the spot market will continue at the same levels because the country is incorporating 1,000 efficient MW, and the demand is not growing by more than 650 MW, even if we count the expansion of Cerro Verde's mining operation".

Alegre says power supply is guaranteed at least until 2022, and that the country needs to handle carefully the promotion of new power projects under regulated schemes, since a growth rate below 8% annually in energy demand will create an excess of supply.

Handling systemic risk

As demand has been consistently expanding over the last years, the system has suffered from a number of bottlenecks. Among the short-term, immediate risks the installed capacity has been relying heavily on the Mantaro 1-GW hydro complex, run by state company Electroperú, and more recently on the thermal gas plants located in Chilca, 60 km south of Lima.

Mantaro has been unable to stop the operation for tunnel maintenance for the last 40 years. Specialists assure there should be an inspection at least every 10 years, or

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tunnel failure could bring the plant to a halt. In Chilca, combining the output of the different plants by Kallpa (IC Power), Enersur (GDF Suez), Fenix Power (Ashmore Group) and Termochilca, there are around 2.5 GW that rely on one single pipeline that brings the gas from Camisea. The whole system is therefore fragile to breakdowns or terrorist attacks. "If the gas flow is interrupted for any reason, there would be a blackout for 20% of demand at peak hours," said César Butrón of COES.

Moving forward, the risk should be mitigated by the construction of the southern gas pipeline and the availability of thermal plants that can work with diesel in case of emergency.

Then, there is long-term risk. Gas, of course, is a non-renewable resource, and consumption has been expanding dramatically over the last decade. There are plans for a northern gas pipeline and the development of petrochemical plants. In this context, how long gas supplies will last can only be known in the years to come.

Finally, there is climate change, which could affect hydropower generation. In the words of Pablo Ferradas, managing director of Lahmeyer Agua y Energía, a consultancy specialized in hydropower projects: "Climate change is a fact. Glaciers have decreased by 40%. Moving forwards, we will need more reservoirs to regulate water flows. Rainy years will be rainier, and dry years will be drier. Unfortunately, reservoirs have impacts with the inundation of cultivable land and the relocation of communities"



Gas-fired generation represents over 40% of the energy matrix. Photo courtesy of Termochilca.

Carlos Herrera, Executive Director, ProInversión

What are ProInversión's main activities?

ProInversión is an investment promotion agency. We have four main areas of work: First, we look at promoting the country as an investment destination; second, we promote private investment in infrastructure and public services projects through public-private associations and thirdly, we provide information to investors on macro and microeconomic data. Lastly, we implement projects under the 'obras por impuestos' (projects for taxes) program.

What have been the latest developments in energy?

The latest projects have been the southern energy node, consisting of two 400 MW thermal plants awarded to IC Power and GDF Suez last year, and Molloco's hydroelectric plant. On the transmission side, we keep strengthening the grid with 500 kV lines. Additionally, a very important milestone is the 1,200 km southern gas pipeline, expected to be ready in 2017.

How do you expect the economy to perform in 2015?

It is true that growth has cooled down in 2014. In 2015 we must go back to growth rates of 5%, thanks to the commissioning of new mining projects that had been delayed, and the construction of sizeable infrastructure projects, such as the southern gas pipeline, the thermal plants in the south, the Chinchero airport, the Chavimochic irrigation project and the line 2 of Lima's Metro.

5% growth means injecting new generation capacity to the system every year. In Q2 2015, we plan to launch the tender for 1,200 MW of new hydro projects, for a total investment of \$3 billion. In parallel, we will be awarding the Quillabamba thermal gas plant for 200 MW.



Do you think Peru will export electricity at some point?

At some point there will be a surplus that could be exported. Only in hydro we have potential for 69,000 MW. Today, we are not even using 10% of that. Yet, the possibility of exporting needs to be balanced with Peru's local needs. For instance, Peru could develop its petrochemical industry to feed the expanding agro industry, since new irrigation projects will expand Peru's agricultural land by 200,000 hectares over the next five years.

How can you mitigate the risk of breakdown or sabotage in Camisea's gas pipeline?

For energy security we are promoting the construction of a reserve tank of 130,000 square meters of gas, which could feed the existing thermal plants for up to seven days.

Some investors complain energy prices are too low in Peru. What is your view?

In all of our tender processes there is competition. Investors always look for higher profits but today's margins, sitting at around 12%, are reasonable. Besides, we continue to see interest from new entrants from different countries.

What are Peru's advantages as an investment destination?

Our strengths are our economy, the stability and predictability of our investment policy, and the country's dynamism where there is a lot to be done. We use less energy than Chile, even if we have a much larger potential. The opportunities for business are very big.

Non-conventional renewables

Non-conventional renewables accounted for 3% of the energy matrix in 2014, a figure expected to reach 5% in 2015 (the figure does not include small hydro). Investors in wind and solar projects are anxiously waiting for the details of the next renewable energy auction ('RER') to be released. New projects should be awarded by the Government in mid-2015.

Juan Coronado, general manager of Auster Energía, was the first developer to obtain contracts for the construction of wind farms in Peru. He explained: "In order to reach the 5% required by law, the country will need about 1,600 GWh or 400 MW of new capacity to be distributed among wind, solar and biomass".

Auster is now partnering with Invenergy of the U.S. for the development of new power generation projects in the country.

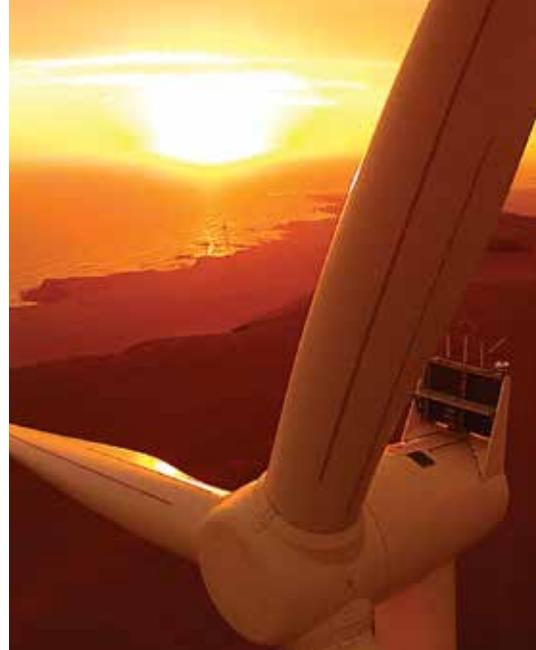
Daniella Rough, specialist for energy services at Golder Associates, an engineering and environmental consultancy, pointed out: "With the COP20 [Climate Change

Conference, held in Lima in December 2014] there are many expectations in terms of improvements to the government support for renewables, including removing the restriction on selling wind and solar energy privately via the national grid".

The latter point is significant since, according to the regulation, the firm capacity for wind and solar plants is zero. That means investors in these technologies can only enter the market via PPAs with the Government through the RER auctions.

Combining all of the RER auctions completed so far and excluding small hydros, the Government has signed PPAs for four wind farms (for a total of 232 MW), five solar plants (96 MW) and two biomass facilities (27 MW).

The main argument against new power generating technologies is their cost. Yet, as the industry develops, these should come down, thanks to innovative technologies and efficiencies obtained from economies of scale. Indeed, wind energy is offered in Peru at prices as low as \$50-65/MWh, which is already competitive with



Peru has very constant winds along its coast: Photo: Marcona wind farm, courtesy of Cobra.

hydro plants. Meanwhile, solar energy is already being offered at less than \$90/MWh under long-term contracts. "Technology and wind quality are helping us reduce costs. I do not think that the prices of the last auctions will be successful again, so it is very important to bring costs down," said Patricia Alarcón, country manager of ContourGlobal, a firm that operates the Talara and Cupisnique wind farms in the country. Cost is not the only concern for advocates of unconventional sources of energy. While there are records of comprehensive hydrological studies since the 1960s, not the same can be said about wind and solar. More years of data collection are needed to increase certainty over the performance of new energy sources. So far the figures are promising, with very high radiation levels in the south of the country (6-7 kWh per square meter) and very constant winds along the coast. "The wind in Marcona is exceptional," said María Sánchez-Mayendía, manager of Renewable Energies at Cobra, a Spanish group that put its Marcona wind farm (32 MW) into operation in 2014 and is currently building another one at Tres Hermanas (97 MW). "Our studies say that we have 4,600-4,800 hours of wind per year. In Spain you do not have plants with such wind quality. Moreover, wind is very stable, not turbulent. That means that the units can generate virtually all the time."

The results coming from solar are also very satisfactory, said Alfonso de Sas, country manager of Isolux-Corsán, a company that put two 22-MW solar plants in operation in 2012 in the region of Arequipa. "These

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plants are a source of pride, technologically speaking, because they are injecting into the grid 25% more energy than expected," he said.

Solar will play a key role in the Government's effort to increase rural electrification rates, an area where Peru has been lagging behind. In November 2014, Tozzi Group company Ergon Peru was awarded a contract to install up to 500,000 off-grid solar panels in isolated areas.

While technological innovation will bring the cost of renewable power generation down, the country's learning curve over the last years should also accelerate the development of this segment. Today companies awarded PPAs need to provide financial deposits of \$250,000 per MW, as explained by Jesús Tamayo, president of Osinergmin, the government body that handles the process. "Deposits have been increasing because we are trying to assure the outcome of the auction, with the companies winning contracts showing enough commitment and financial capacity to start the projects immediately."

Environmental regulations should also keep up with the country's latest developments. According to Gonzalo Morante, general manager of Walsh, a large environmental consultancy: "The power sector regulation in Peru is pretty old and is framed on a model that exclusively had hydroelectric and limited thermoelectric sources. It is therefore very difficult to apply it to wind, solar and geothermal projects where we have to look at the best practices around the world. Unfortunately, the regulators lack experience and the legal

framework does not allow them to be very flexible. Sometimes it is just a matter of knowledge. With Peru's economic growth there is a lot of rotation in the regulating entities. However I think that, in the end, we can work together with the regulator and come up with a system that actually focuses on what is important for each project."

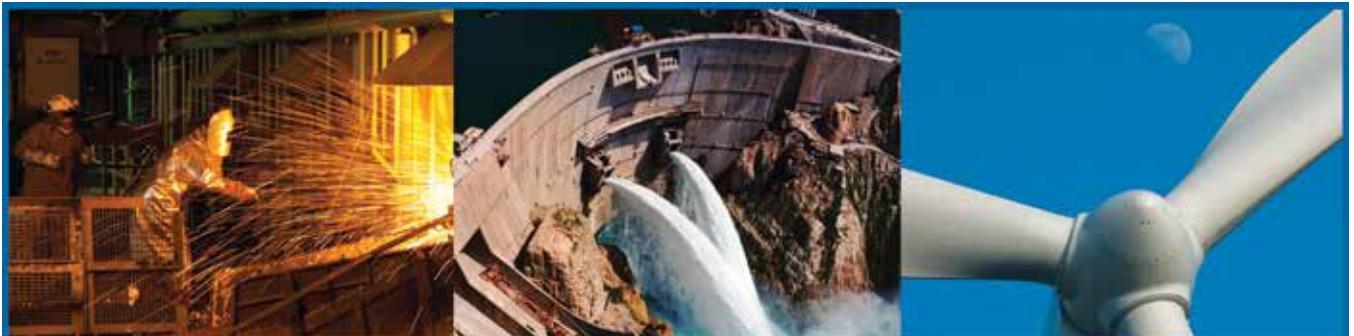
Hydro potential

Since the start of the RER model, the Government has also signed PPAs for 44 mini-hydro plants of less than 20 MW for a total of 391 MW. The players developing these small-scale projects include Latin America Power, Union Group, Alarde, Aluz Clean Energy, Rurelec, IBT and others.

Mini-hydros, although more expensive to build per MW than larger ventures, allow for lower-impact, more sustainable projects.

"The advantage of run-of-the-river projects with small reservoirs and lagoons is that they do not use a large amount of land and they can be used for irrigation projects in some cases. Also, a big part of the infrastructure can be built underground. Since these projects are medium-sized or small, they keep the natural flow of the water, so you can add more facilities along the river. Peru has ideal conditions for these type of schemes," affirmed Mario Marchese, general manager of Hatch, a consultancy increasingly active in energy projects in Peru.

Those who want to picture first hand the opportunities for hydro projects in Peru can just take the Carretera Central east-



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bound from Lima. In a matter of just 120 km, travelers go from sea level to nearly 5,000 meters in the Ticlio mountain pass. The topography on the eastern side of the mountain range is perhaps less abrupt, but rivers towards the jungle have richer water flows, and these are attracting interest as well. "In the future, big hydro projects will be developed on the eastern side of the Andes. Many clients are now looking at the Marañón river, which has a great potential. There are lower heads there, but a lot of water," explained Gunnar Frostberg, general manager of Norconsult, a Norwegian-based consultancy specialized in hydro projects, which has been working at the 168-MW Cheves project for Statkraft.

"There are many projects in the Marañón River with power potentials of 500 MW each or more. They will take some time to be built because it is a more remote area and there may be more environmental implications to be taken care of," Frostberg continued.

While hydropower projects in the jungle need to be very careful about environ-

mental aspects, these projects can be instrumental in bringing development to areas previously dominated by drug trafficking mafias. The Monzón valley, a no-go region just a few years ago, saw a successful coca eradication program by the government, and now private players are investing in the area, located at the edge of the jungle. "In 2011, there were no police stations in the region; today you have many, together with bank branches in all the villages. Schooling rates have increased significantly since kids are not forced to work in the coca fields," said Héctor Bonilla, CEO of Union Energy Group, a company building two hydro facilities for a total of 27 MW.

These plants were initially identified by Andes, a project promoter, who also did the initial work for Belo Horizonte, a 180-MW project now owned by Odebrecht in the same Monzón valley. Putting together the two plants by Union Energy Group, Odebrecht's Belo Horizonte and other small hydro facilities in the study phase, the region could see investments of over \$600



Gunnar Frostberg,
general manager,
Norconsult

million. "This is an unimaginable amount for the Monzón valley, and it is going to change the region's economy," said Juan Antonio Solidoro, executive partner of Andes.

In the end, it all comes down to sustainability. Hydro projects have certain environmental impacts and, while they generate many jobs during construction, they barely provide any employment after that. This is why generators need to incorporate sustainability initiatives from the beginning of projects to ensure that the overall effects will be positive for the surrounding environment. In the words of Ferradas of Lahmeyer Agua y Energía: "You need to worry about the communities, not just about the internal rate of return."

Transmission and distribution

With a large chunk of the generation capacity concentrated in the center of the country (either by the coast around Chilca or in the mountains), Peru has had to invest heavily on its transmission network over the last years. The first 500 kV lines were put to work in 2011, and the country continues its efforts to reach remote populated centers. Last year, the government awarded Spanish group Isolux-Corsán the concession to build and operate the 630-km, 220 kV line from Moyobamba to Iquitos, deep in the Amazon jungle.

Today, the main two players in transmission are ISA of Colombia, which controls around 75% of the infrastructure, and Abengoa of Spain, which recently completed the Carhuamayo-Carhuaquero 670-km 220-kV line and the 900-km 500-kV line between Chilca and Montalvo; an investment worth \$500 million.

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- Supervision of the Concession of Olmos Project
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Ignacio Baena, president of Abengoa Perú, explained that the main challenge was to manage the altitude, as 10% of the line was running at over 5,000 meters above sea level. "In both projects it was very hard to obtain the right of way, due to social problems and excessive expectations. As part of this process, very often we need to implement projects that get mixed up with corporate social responsibility, since these are initiatives that should be carried out by the State," he said.

The ISA Group currently operates 9,600 km of lines in Peru and is building the country's longest, the Mantaro-Montalvo 500 kV line that runs along 1,300 km. Its general manager, Carlos Mario Caro, explains that over the last 10 years Peru has doubled its transmission infrastructure, making the system far more reliable. "As ISA we have reliability rates of 99%," he said.

The State still plays an important role in the distribution segment. Outside of the capital, where the business is controlled by two private players, Luz del Sur and Edelnor, most of the companies are State-owned. One of these is Distriluz, which serves 2.2 million clients. The company was privatized in the 1990s but was returned to the State a few years later. Like Electroperú in power generation, Distriluz cannot obtain debt financing for a period of more than 12 months, which seriously limits its investment capacity to expand its infrastructure and maintain the right quality of service. A project by the government to partially privatize State-owned companies (up to a 40% stake) was recently rejected by Congress. "A transformer can be operational for 25-30 years, yet we need to pay for it in a year. We have good cash flow, but we cannot invest," laments Humberto Montes, president of Distriluz.

In this context, and provided that the political landscape allows for it, the modernization of State-owned electricity companies should be a priority for the authorities. The Colombian model could serve as a good example.

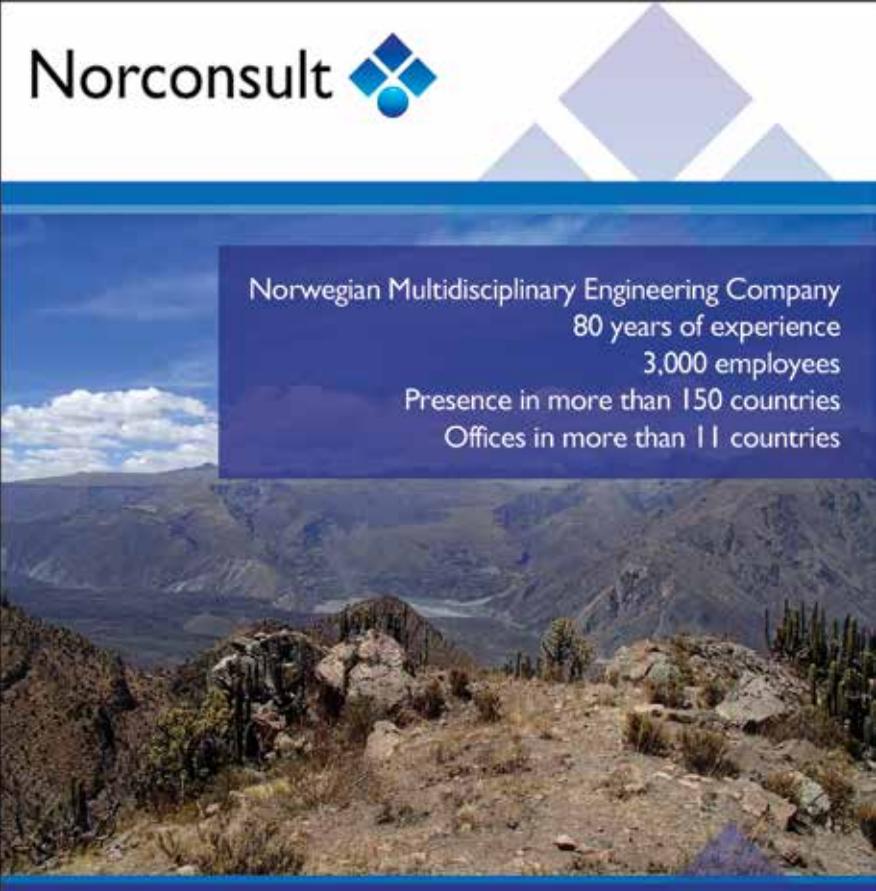
Regional interconnection - The export potential

The previous administration of President Alan García tried to promote the development of large hydropower projects in the Peruvian jungle, with the idea of exporting

electricity to Brazil for a number of years, until the local market grew in size. The emblematic project in this respect was Inambari, a 2.2 GW hydro complex that is currently on hold. Asked about Inambari, local expert in hydropower Julio Bustamante, general manager of JByA, said: "The area is occupied by informal miners and illegal loggers. There is also drug trafficking. These are the people that oppose Inambari

because the plant would bring governmental entities there. If you look at Itaipú, the results there have been fantastic. Although the model may not apply to other projects in the jungle, something like this could be achieved in Inambari."

The point is that not only social and environmental aspects are at stake; there is also politics, and public opinion does not seem in favor of exporting electricity to



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Brazil or Chile, which are the natural markets. "There is a perception that Peru suffers from an energy shortage. I have never read a line in the newspapers complaining about copper exports, but when you talk about exporting gas or electricity, many people are against it," said Erlon Arfelli, director of Odebrecht Energía.

For ISA of Colombia, that operates transmission infrastructure all around the region,

including some interconnection lines (between Colombia and Ecuador, for instance), making South America an integrated energy market makes total sense. "All Latin American countries should be connected as happens in Europe. When it rains in Peru, perhaps it is not raining in Colombia, and vice-versa. With total integration from Central to South America, you would have electricity dispatched by the country that

can offer the cheapest price at any given time. This is a dream for 2025," said Carlos Mario Caro of ISA.

Technology, services and financing

The growth of Peru's energy sector has been a magnet for international technology providers. Energy represents 60% of total turnover for Siemens in Peru, with an important presence in gas and windpower generation; Vestas supplied the turbines for ContourGlobal's two wind farms; Voith is expanding its Lima office to serve Peru's expanding hydro sector and Alstom, whose energy business was recently acquired by GE, is also present in the country with the Chaglla 456-MW hydro plant as one of its latest projects.

The same goes for consultants and engineering firms. Hatch is focusing on growing its Lima operation, putting emphasis on the mining and energy sectors. Besides traditional hydro projects, Pöyry has been successful in adapting to the more demanding cost structures of mini-hydros under 20 M, in order to win more work. Posco of Korea has had an office in Lima for several years now and Norconsult arrived in Peru with a project for Statkraft's Cheves plant, but it intends to capitalize upon its hydro and tunneling expertise to establish a permanent base in the country moving forwards. "Peru's growth can be compared to what happened in Chile in the 1990s, with a big momentum in mining, infrastructure and energy projects," explained Mario Marchese of Hatch.

Roland Schmidt, managing director of Pöyry in Peru, agreed: "After a big delay in development because of the terrorist times, the country's economy has shown impressive

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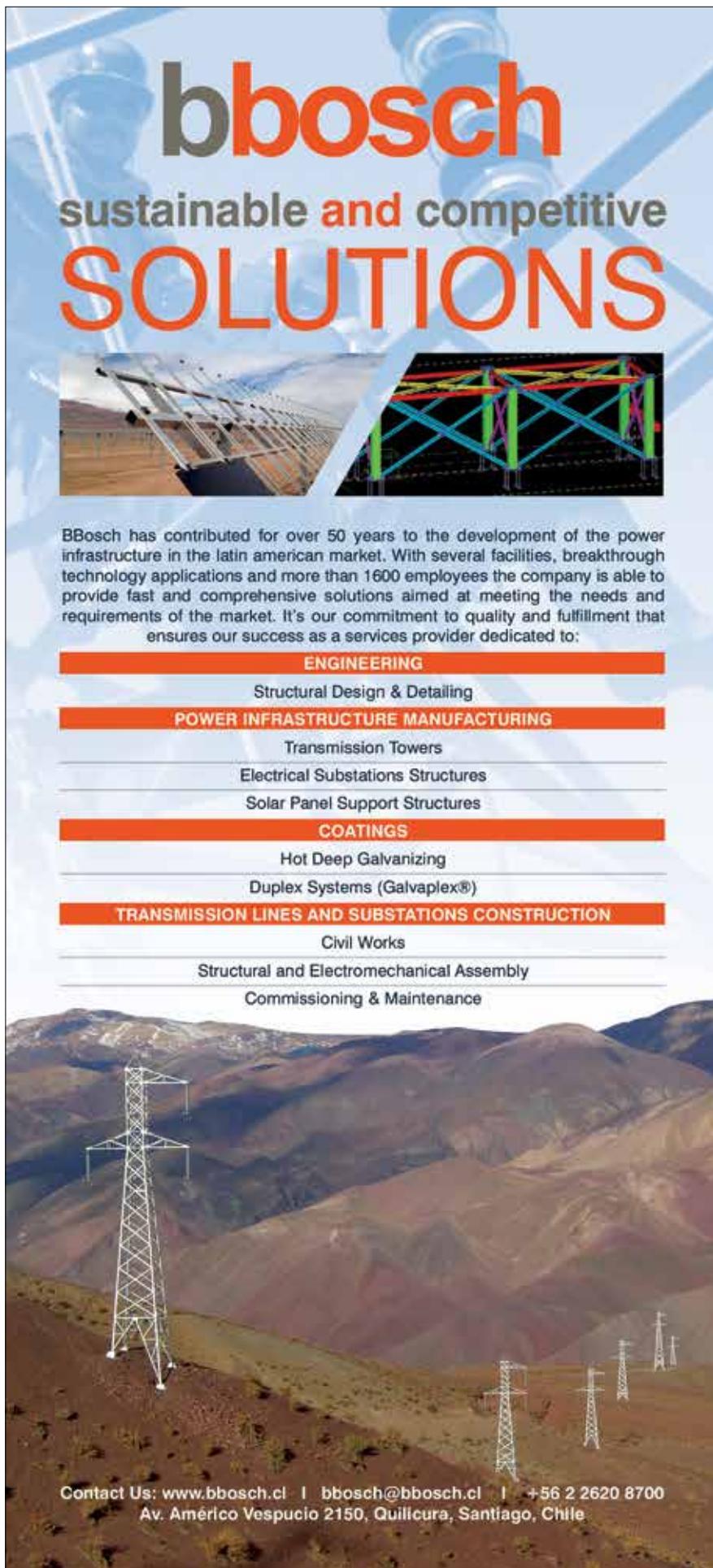
Erlon Arfelli, director, Odebrecht Energía

growth rates over the last decade, and Peru has one of the best investment ratings of all South America, similar to Chile. Nobody would have believed it 10 years ago."

The case is also made that Peru is actually in a better position than Chile to provide revenue to technology and services providers. B.Bosch, a large Chilean player in the manufacturing of structures for transmission lines, substations and more recently solar panels, has been serving the Peruvian market since the 1990s. The company has found a niche in providing turnkey solutions for generators and mining companies that have medium-sized and small investment projects. "A majority of Chile's industrial players already participate in the Peruvian market and many of them are setting up shops in Peru because in Chile the conditions for new investment projects are not met. There is an exodus of Chilean professionals and companies towards Peru. Chile is growing at 2% rates, whereas Peru has been growing by up to 8-9%. A bad year in Peru means 4% growth," said Ariel Burgos, commercial manager of B.Bosch Industrial.

Chilean players are not the only ones to arrive on the market. Chinese and Indian manufacturers are also trying to get a bigger slice of the pie with the support of Peruvian distributors. Local company Electrowerke, for instance, represents Crompton Greaves (CG) of India, a company that has become a leading player in Peru's market for 500 kV transformers. Another example is Ergon Power that represents equipment brands such as Harbin Electric Machinery (HEC) of China. "When we started working with Harbin in 2006 there was resistance to buy Chinese equipment, but Harbin is a well recognized brand that had an important participation in the Three Gorges Dam project in China. They can turn out 14,000 MW worth of equipment every year, and that translates into faster delivery times, so the client can put its plant into production earlier," said Ricardo Velasco, general manager of Ergon Power.

Ergon Power also represents Chinese EPC companies, including Gezhouba Group (CGGC) and Sepco III. "The advantage of working with large Chinese EPC players is that we can provide both the EPC project as well as the project financing through Chinese banks," Velasco added.



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Financing

Financing power projects is a key part of the equation as payback periods can be long in a context of tight power pricing models. Large project developers may find it easier to obtain financing on the global markets, but the RER auctions have also brought a new set of players to Peru as some industry leaders complain that the local banks are not ready to help them yet. "The processes with local banks are very slow. Foreign financing entities show very strict evaluation processes, but their processes are much more agile. It is not reasonable to lose 10-12 months and then receive a negative answer," said Héctor Bonilla of Union Energy Group.

Yet, as the sector grows and becomes more sophisticated, it should be easier to raise the necessary funds, from both local and international sources. According to Luis Alfonso Carrera, deputy CEO and country head for Peru at Credicorp Capital: "There are several types of institutions very interested in funding energy projects in the country. First, the ECAs (Export Credit Agencies); second, multilateral institutions like CAF and IFC; third, international commercial banks, which are very interested in long-term infrastructure projects. Finally, we have access to the international capital market, more commonly the North American one".

Peru's growth expectations and macroeconomic stability seem to justify all this interest. Over the next few years the expansion of



Growth will be mainly supported by hydro projects over the next decade. Photo: Cañón del Pato plant, courtesy of Duke Energy.

the power generation capacity will be based on internal growth, but the possibility of exporting to countries like Chile, which pay much higher prices for electricity, should become a reality at some point. From hydro to natural gas and non-conventional renewables like wind and solar, Peru is blessed with abundant energy resources. It is natural to think that the country will capitalize on this potential in the years to come. •



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