

# Power and Renewables Mexico: Into the light

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## **As wind power moves into the Mexican mainstream, solar and hydro projects prep for their moment in the sun**

At the tip of the Baja California Sur peninsular, La Paz is one of the sunniest spots in Mexico. It is also a location that calls out for a large-scale solar power operation.

Aura Solar is set to be just that: Mexico's biggest ever photovoltaic plant. It will produce 30 megawatts – enough to supply 164,000 residents, or roughly two-thirds of the town.

In May, local developer Gauss Energía booked the necessary \$75 million financing to get the Aura Solar power generation project started on the site: Nacional Financiera chipped in \$50 million and the International Finance Corporation, \$25 million.

“The Aura Solar project is in a privileged position to tear down barriers and myths around solar development in Mexico,” says the company's CEO and president Héctor Olea.

Regulations are in place to facilitate solar energy growth, and the projects have a short development cycle, giving them an edge over wind counterparts. “This is a win-win situation for sponsor and private energy off-takers, so new options are developed in the country and thus more competition is introduced in the sector,” he says.

Wind projects are increasingly commonplace, with a number under construction, in operation and more in the pipeline. Competition can even be fierce under the new self-supply regime, where manufacturers sell directly to private companies and transmission can be tough.

Today, wind is a known quantity, Olea says. Plain vanilla deals are usually structured with equity of 25% to 30%, and the rest senior or mezzanine debt.

Normally, sponsors contribute with the full equity at the start, and then at the end of

the construction phase or start of operation seek to restructure, he says. Now, with changes to the investment rules for pension funds, these institutional accounts are being considered as a potential source of equity or long term funding.

But as interest in renewable energy continues to grow and laws are put in place to expand its reach, interest is growing around hydro and solar power.

There is considerable potential for the sector to expand. Mexico's government energy agency, Secretaría de Energía (SENER), and PwC, calculate that much of the country's renewable resources, including rivers, wind, and geothermal, are underused.

Mexico aims to have 35% of its electricity come from renewables by 2024. Geothermal is most successfully exploited: the two agencies reckon the country is generating today around 10% of the 10,000 megawatts they believe it will have the capacity to generate in 2020. Wind is generating 5% of its 2020 potential, mini-hydro 2%, biomass 1%, and solar photovoltaic, nothing.

Getting the financing in place for these new, often expensive, technologies can be cumbersome. An example is the Piedra Larga wind project. Discussions are understood to have started as early as 2006, although it took until 2008 for off-taker Grupo Bimbo to sign an 18-year power purchase agreement (PPA) with Renovalia Energy, which developed and owns the wind farm.

Mexican institutions Bancomext, Fondo Nacional de Infraestructura and Nacional Financiera financed the project alongside commercial banks La Caixa, Espírito Santo and Santander.

"Commercial banks tend to be prudent in looking into bankable projects," says Olea. "However, we see commercial banks moving very rapidly into solar development in the next couple years, once projects like Aura start making inroads in the sector. We have seen this picture before, with wind power development eight years ago."

## **Energy for sale**

Off-takers, who buy the energy, come in two types. One is the Mexican state-owned utility Comisión Federal de Electricidad (CFE), which, under the country's "small production" regime, buys up to 30 megawatts of electricity under 20-year power purchase agreements (PPA). It can also buy energy and capacity under a competitive bid-

ding process, which allows for a 25-year PPA.

Private sector companies comprise the second buyer group. They must be similarly financially strong to bring certainty to expensive renewable projects. Firms such as Walmart, Bimbo, Volkswagen and Ford, have signed such deals.

For now, the cost of solar power is high, which makes it difficult to compete on price against other forms of production. As gas prices rise, which Olea expects in a few years' time, CFE's energy prices will also edge up and it will become easier to offer attractively priced solar energy.

But crucially, he says, the price of solar technology must fall in order to make it more viable.

"Although Aura Solar has been developed under a small production regulatory regime, we see the self supply approach more sustainable in the future," Olea says.

"However, the levelized cost of energy (LCOE) for solar energy needs to come down in order to compete with wind and mini-hydro technologies. We expect that solar power will be ready as a mainstream alternative in two to three years. Meanwhile, we have to work with out-of-the-box innovative solutions such as Aura Solar I."

Investors look favorably on the combination of elements in hydro and wind, including the rate of return, stable long term cash flows and quality off-takers, and the stable regulatory and legal environment, says Kai Buntrock, CFO of the German renewable energy developer Sowitec, which operates wind farms in LatAm.

"Given Mexico's mature administrative and legislative environment and the financial sector's growing familiarity with the specifics of new renewables in Latin America and the Caribbean, plus the given resource base and economic stability and sustained growth, this will no longer be considered a trend but rather investment mainstream in the very near future."

Wind energy continues to become more competitive, says Miguel Ángel Alonso, director of Acciona Energía México. Multinational companies are piling in.

He points to the 556.5 megawatts the company has installed and operated on the Isthmus of Tehuantepec, and the company's interest in also having a presence in the northern part of the country, where developing wind power is becoming increasingly

popular.

“Acciona aims to continue to be a major player in this development with a view to achieving a market share of around 15%, either operating its own facilities or for other companies in this period,” he says. Financing will come mainly from commercial banks, investment funds, insurance companies and private sector entities, he says. Capital markets are also an option: Acciona placed \$298 million of project bonds in August 2012 to finance two wind farms in the Oaxaca province.

The government is also pushing renewable energy. In 2008, it introduced a bill to promote renewable energy that added transparency to pricing and equalized the cost to send it anywhere in the country. By 2009, the first wind farms became operational under the new legislation. Further regulation allows surplus wind energy to be banked with the CFE for credits when the wind is not blowing.

### **A bright future**

Investors from Brazil, Italy, Portugal, Spain, the US, and the UK are showing interest in financing renewable projects. Where previously largely strategic investors and utilities dominated, today more financial and local investors are getting involved, Sowitec’s Buntrock says.

Investors look for grid access, PPAs and underlying economics which can include currency, ratings and political, regulatory and technological risks.

Italian renewable energy specialist Enel Green Power has a growing footprint in Mexico. As a large emerging market with strong renewable prospects, Mexico’s stable democracy makes investment attractive, says Nicola Melchiotti, head of in the company’s Mexico and Central America operations.

“It has good prospects to sustain economic growth, and therefore demand for electricity and infrastructure.”

Enel Green Power has a 102 megawatt wind farm called Sureste under construction in Oaxaca. It adds to the Stipa Nayaa project, which has 74 megawatts of installed capacity, and Zopiloapan, which has 70 megawatts.

“The scenario in Mexico for the renewable sector is very dynamic,” says Melchiotti.

“You can find renewable projects developed by small and agile companies, both Mexican and not, by large utilities, by local industrial groups, by banks and by other players. It is a diverse and thriving landscape.”

Demand for energy in Mexico continues to grow rapidly, with manufacturing in auto, steel and refining looking for increasing amounts of power. Energy is a major component in their operating costs, and volatility a major issue.

Large companies have addressed the issue with long-term PPAs. This kind of hedging provides energy price security for companies – the price moves, but only via inflation. And in some cases, they won't start building infrastructure until they find good terms for filling their energy needs.

### **Bringing the banks**

To finance renewable projects, major operators with global footprints are bringing their relationship banks with them as they move into the region. And while Europe has been in crisis, Mexico has gotten more involved as well. With PPAs in local currency, state development banks and national banks have entered the sector.

The 2010 Eurus wind farm project developed by Acciona shows the breadth of lenders willing to get involved. The IFC participated with ten other lenders in the \$600 million wind farm project, with Acciona providing the majority of the \$225 million equity investment and the rest debt financed.

The IFC contributed \$71 million in senior debt and a mezzanine tranche with a 15-year term and, together with the IDB as co-arranger, syndicated \$62 million of senior debt to BBVA Bancomer and Banco Espírito Santo.

A further \$242 million of senior debt came from Banco Interamericano de Comercio Exterior, Instituto de Crédito Oficial of Spain, DEG (the private sector financing arm of German development bank KfW), Nacional Financiera, and French development finance institution Proparco.

Enrique Nieto Ituarte, director of sustainable projects at Nacional Financiera, says the institution has been involved with renewable energy for the past four years, starting with wind and now moving into hydro and solar. Wind is popular because the technology is well-developed, he says, and the know-how behind the project financing

established.

“The funding, too, has been developing,” he says. “We have first the development banks, then we have foreign banks, now we have a combination of Mexican foreign banks and development banks together financing different projects.” Commercial banks have been participating via club deals and syndications for the most part, he says.

## Solar soon

Despite progress on developing solar generation capacity, Mexico still lacks projects that internationally would be considered large-scale, says Mark Ramsey, senior managing director and head of Latin America for Macquarie Capital, says. “As the cost of photovoltaic cells falls, it will probably be a bigger part of the conversation in years to come,” he says. “There are very good sources of sun in Mexico, should it become viable.”

He says he is optimistic about alternative energy and its prospects. “It’s really just at the beginning,” he says.

The Inter-American Development Bank (IDB) sponsors five wind projects in Mexico, having first become involved in 2009, says Jeff Easum, lead investment officer in structured and corporate finance. It is now seeing solar projects at the door.

“We definitely expect 2013 to be a good year for getting mandates for solar projects,” he says. Easum estimates that the IDB has been approached on some 50 solar and wind projects over the last year, as well with respect to a few hydros.

“Generally, in order to start evaluating a project, we need to know that the structure is sound, that the players are strong both financially and with respect to experience, and that there are no environmental and social issues,” he says. The participation of strategic investors is critical, he adds.

“With solar, there’s an element we hadn’t seen so much with wind: there are so many players in a turbulent market, you have to make sure the tech provider is going to be able to honor its guarantees if you need to call on them,” he says. **LF**