

## INTERVIEW: DECLINING MARGINAL PRICES IN CHILE ARE “PUTTING A BRAKE” ON DEVELOPMENT

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**The declining marginal price of energy in the spot market in Chile, driven by bottlenecks in the central grid, is “putting a brake on market development”, according to Joost Samsom, Co-founder and Partner at Netherlands-based financial advisory firm Voltiq.**

“Ninety percent of off-take in the north of Chile is in the mining community,” Samsom said. “Developers need to be more mindful of energy costs. Solar income is decreasing as commodity prices are decreasing.

“What you see is large amounts of renewables entering certain parts of the grid. The more renewables enter, the higher the chance is that the marginal price of energy approaches zero, as it will always be dispatched. That leads to a situation where, if you have only renewables to cover demand at certain times, then those marginal costs will be zero. Developers need to be thinking: how do we avert that and create revenues?”

The Chilean market, like the Brazilian market, offers the potential for renewables to grow beyond current volumes if transmission capacity is expanded. However, the downside of Chile’s free market when it comes to energy production is that developers are finding it increasingly difficult to recover their costs.

Banks are hesitant to provide merchant finance to renewable energy projects in Chile because of the risk that the marginal price will decline on days when high volumes of renewable energy is fed into the grid on the spot market.

“If too many merchant projects are in the market, the market would destroy itself,” said Samsom. “It is putting a brake on market development.

“Now projects need more sophisticated off-take solutions to be realized.”

The appetite to finance merchant projects is relatively limited in Chile and multilaterals have already pulled out of the market, leaving it to the commercial banks to take the market forward, according to Samsom.

“The market for merchant renewables has stalled,” he said.

Chile has a backlog of approximately 15 GW of projects in development, including nearly 4 GW of late-stage projects that could only be realised if the grid is extended. There are large bottlenecks, particularly in the northern part of the country in areas such as Atacama, which has a high concentration of solar power development.

“The main marginal price goes to zero as the cost of solar and wind [generation] is zero,” Samsom said. “You see that phenomenon in certain parts of the northern part of the central grid. There, a lot of renewables enter the grid. Of course this is not a reflection of the real cost of renewables, including its cost of capital. The question is how to make [renewable energy] projects bankable and viable.”

Power purchase agreements are a relatively simple solution to this problem. For example, Pattern Energy recently secured \$205 million of debt finance for a 122 MW solar photovoltaic project in Chile, enabling it to progress to construction. The project had a 22-year power PPA in place with Minera Los Pelambres. The widespread adoption of battery technology could also help offset the problem of high volumes of electricity being sold into the market at times of peak generation.

An expansion of the existing transmission system in Chile is also expected to help develop a deeper and more liquid market, and result in sophisticated finance structures similar to contracts for difference or structured PPAs.

“Developers cannot finance projects like this [using] a merchant model,” Samsom said. “The connection between the northern and central system, by E-CL (ENGIE group), creates a bigger, deeper and more liquid market.

“We might see the market slowing down. Once there is an interconnection between the grids, we will see this market accelerate; without PPAs, but with certain structures to sustain revenues.”

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