

LatAm Utilities

What Is Behind the Uber-Competitive LatAm Power Bids?

OUR TAKE: The shocking 2017 LatAm power auctions season is over, with the most competitive solar and wind bids ranging from ~US\$20 to US\$30/MWh. To better understand the fundamentals behind the "maddeningly low" outcomes, we tweaked our VBA-automated [power price calculator](#), incorporating financing scheme nuances and baking in expected lower building costs and capacity factor improvements. Our read? These prices may be aggressive/optimistic, but they are not irrational. We maintain our general dislike of gencos (with EGIE3 being the relative exception) and prefer exposure to ENIA.

KEY POINTS

Can we reconcile our *levelized costs* (estimated US\$/MWh that makes a project NPV equal to zero) with the Q4/17 LatAm bids? The short answer is yes, but only after the use of extensive leverage, cheap funding, and factoring in technical improvements for solar and wind units expected post-2020. Levered, real IRRs in the high-single-digits can still be reaped, but leave very little room for negative regulatory surprises.

- **Argentina.** We believe that the highest LatAm auction prices (~US\$45/MWh for both solar and wind) are explained by the relative financing difficulties and to a lesser degree by project size limitations (<100MW). During 2019 we should see a new mid-sized auction for projects starting 2021-2022 and prices could drop.
- **Brazil.** Solar at ~US\$40/MWh remains expensive in comparison with Chile or Mexico (US\$20-US\$25/MWh), mainly due to lower resource. In terms of wind, the US\$30/MWh outcome was surprisingly low enough, but could have been lower after considering capacity factors at ~55%. However, the relatively higher tax pressure and the relative difficulties in funding non-dollarized PPAs beg for more generous prices. As the balance of forces between hydrology, system reserve margin, and renewables penetration finds a balance, unregulated 5-year PPAs (now at ~R\$160/MWh) could drop to R\$150/MWh (in real terms).
- **Mexico.** Likely the friendliest place for renewables: 20-year dollarized PPAs, accelerated tax-depreciation schemes, feed-in tariffs, reduced country risk, and world-class locations for solar and wind. The result? The lowest regional prices, with some wind and solar bids going below US\$20/MWh.
- **Chile.** To us, the US\$33/MWh average outcome disclosed in November remains the most powerful warning signal regarding wholesale pricing. The rest of the LatAm auctions feature PPAs for renewables that do not involve a 24-hour solution (in more technical terms, absence of spot market risk or "feed in" tariffs). However, the Chile auction mechanism ensures that awarded blocks do carry spot risk and that renewables face demand at hourly intervals during day and night. Yet, bidders seem to be quite relaxed about eventual spot purchases and their offers remain quite low. [Complacency, or are we missing something?](#) Probably the hardest question in the sector at the moment...

You can download our new LatAm power prices calculator (which features a higher focus on [levered](#) IRRs and financing conditions) using this [link](#).

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COVERAGE SUMMARY

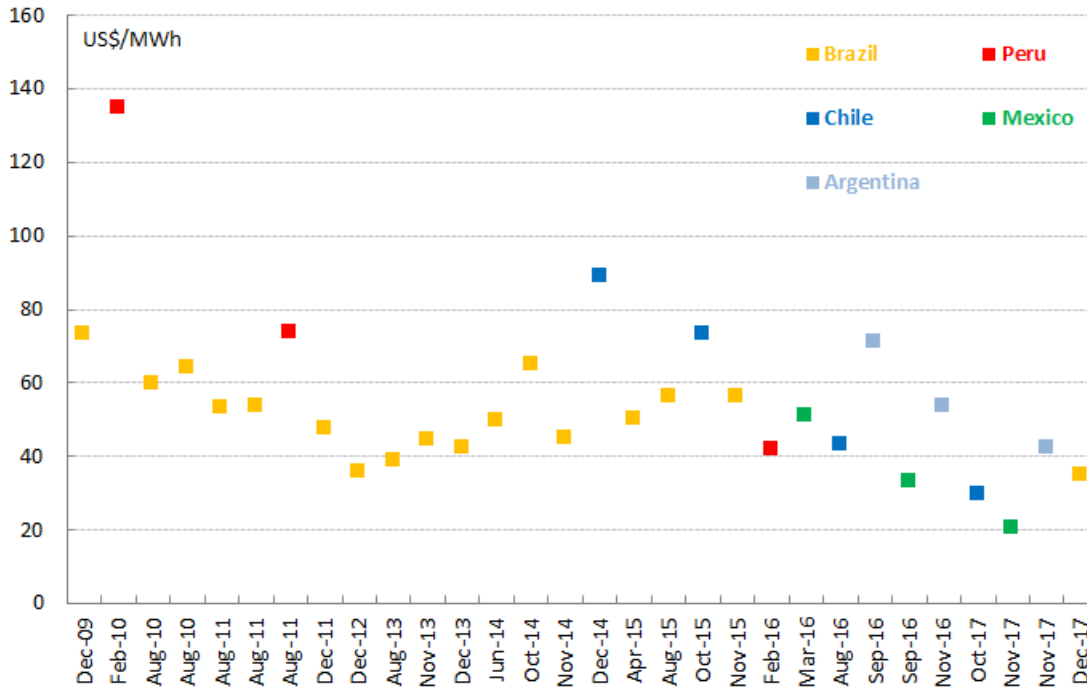
| | Rating | 1-Yr. Target | Return |
|-------------|--------|--------------|--------|
| AESGENER-SN | SU | CLP 200.00 | 8.9% |
| COLBUN-SN | SU | CLP 140.00 | 4.7% |
| ECL-SN | SP | CLP 1,270 | -2.2% |
| EGIE3-SA | SO | BRL 38.00 | 14.1% |
| ENIA-N | SO | US\$10.90 | 2.5% |
| ENIC-N | SU | US\$5.40 | -2.1% |
| EOCC-N | SP | US\$26.70 | 5.8% |
| IENOVA *-MX | SP | MXN 98.00 | 1.5% |
| TIET11-SA | SP | BRL 13.00 | 8.8% |

Exhibit 1: Levelized Costs Per Technology for Chile and Brazil

| | CHILE | | | | | BRAZIL | | | | |
|--------------------------------------|-------------|--------------|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|
| | Hydro | Coal | Gas CCGT | Wind | Solar | Hydro | Coal | Gas CCGT | Wind | Solar |
| Levelized Cost, US\$/MWh | 64.1 | 103.5 | 65.8 | 25.7 | 24.0 | 75.4 | 111.2 | 67.4 | 30.5 | 41.9 |
| Reg. Capacity Payment, US\$/MWh | 11.0 | 11.0 | 11.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Auction Bid, US\$/MWh | 53.1 | 92.5 | 54.8 | 25.7 | 24.0 | 75.4 | 111.2 | 67.4 | 30.5 | 41.9 |
| Capital Cost, US\$/MWh | 48.8 | 53.9 | 10.0 | 16.9 | 18.5 | 53.8 | 55.5 | 12.9 | 20.1 | 31.0 |
| Fuel, US\$/MWh | 0.0 | 28.0 | 42.0 | 0.0 | 0.0 | 0.0 | 28.0 | 36.0 | 0.0 | 0.0 |
| Variable Opex, US\$/MWh | 5.0 | 8.0 | 5.0 | 4.0 | 1.0 | 13.0 | 14.1 | 9.7 | 6.0 | 5.2 |
| Fixed Opex, US\$/MWh | 10.3 | 13.6 | 8.7 | 4.8 | 4.5 | 8.6 | 13.6 | 8.7 | 4.4 | 5.7 |
| Lev. Cost, Local Currency/MWh | - | - | - | - | - | 249 | 367 | 222 | 101 | 138 |
| Building Cost, US\$/MWh | 3.00 | 3.00 | 1.10 | 1.30 | 0.80 | 2.50 | 2.50 | 1.00 | 1.30 | 0.80 |
| Capacity Factor | 50.0% | 80.0% | 85.0% | 50.0% | 28.0% | 60.0% | 80.0% | 85.0% | 55.0% | 22.0% |
| Indirect Taxes (VAT excluded) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% |
| Fuel, US\$/tonne-mmBTU | 0.0 | 80 | 7.0 | 0.0 | 0.0 | 0.0 | 80 | 6.0 | 0.0 | 0.0 |
| Heat Rate | 0.0 | 0.35 | 6.0 | 0.0 | 0.0 | 0.0 | 0.35 | 6.0 | 0.0 | 0.0 |
| Fuel Marginal Cost, US\$/MWh | 0.0 | 28.0 | 42.0 | 0.0 | 0.0 | 0.0 | 28.0 | 36 | 0 | 0.0 |
| Opex, US\$/MWh | 35.0 | 65.0 | 50.0 | 15.0 | 7.0 | 35.0 | 65.0 | 50.0 | 15.0 | 7.0 |
| Tx Cost, US\$/MWh | 5.0 | 3.0 | 3.0 | 4.0 | 1.0 | 4.0 | 3.0 | 3.0 | 3.0 | 1.0 |
| Tech Tax, US\$/MWh | 0.0 | 5.0 | 2.0 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Asset Life (book basis) | 50 | 40 | 40 | 20 | 20 | 50 | 40 | 40 | 20 | 20 |
| Ongoing Capex, US\$/MWh | 10.0 | 30.0 | 15.0 | 6.0 | 4.0 | 10.0 | 30.0 | 15.0 | 6.0 | 4.0 |
| Real Levered IRR Requirement, USD | 10.0% | 11.0% | 9.0% | 9.0% | 9.0% | 11.0% | 12.0% | 10.0% | 10.0% | 10.0% |
| Real Cost Of Debt (20yr), USD | 2.5% | 2.5% | 2.5% | 2.5% | 2.5% | 3.5% | 3.5% | 3.5% | 3.5% | 3.5% |
| Debt Mix | 70% | 50% | 70% | 80% | 80% | 60% | 50% | 60% | 70% | 70% |
| Debt Amortized Capital/Year | 0.0% | 5.0% | 0.0% | 0.0% | 0.0% | 2.5% | 5.0% | 0.0% | 0.0% | 0.0% |
| Real Unlevered IRR, USD | 5.1% | 8.4% | 5.0% | 2.0% | 2.0% | 7.1% | 9.3% | 6.4% | 3.6% | 3.6% |
| Corporate Tax Rate | 27% | 27% | 27% | 27% | 27% | 34% | 34% | 34% | 34% | 34% |
| FX | | | | | | 3.30 | 3.30 | 3.30 | 3.30 | 3.30 |

Source: Scotiabank GBM estimates.

Exhibit 2: LatAm Renewable Auctions (Clean Price*)



* Price adjusted for capacity payments, estimated transmission costs, and indirect taxes.

Source: Company reports; CNE; Cammesa; CCEE; Osinergmin; CENACE; Scotiabank GBM estimates.

Pertinent Data

| | Price | Rating | 1-Yr. Target | 1-Yr. Return |
|-------------|------------|--------|--------------|--------------|
| AESGENER-SN | CLP 202.07 | SU | CLP 200.00 | 8.9% |
| COLBUN-SN | CLP 136.65 | SU | CLP 140.00 | 4.7% |
| ECL-SN | CLP 1,356 | SP | CLP 1,270 | -2.2% |
| EGIE3-SA | BRL 35.50 | SO | BRL 38.00 | 14.1% |
| ENIA-N | US\$10.87 | SO | US\$10.90 | 2.5% |
| ENIC-N | US\$5.71 | SU | US\$5.40 | -2.1% |
| EOCC-N | US\$26.46 | SP | US\$26.70 | 5.8% |
| IENOVA *-MX | MXN 96.66 | SP | MXN 98.00 | 1.5% |
| TIET11-SA | BRL 12.83 | SP | BRL 13.00 | 8.8% |

Enel Americas (ENIA-N;US\$10.87)

Valuation: SOTP DCF Model

Key Risks: Regulation, hydrology, Argentina, M&A

Engie Brasil Energia (EGIE3-SA;BRL 35.50)

Valuation: DCF Model

Key Risks: Hydrology, regulation, Jirau transfer, Brazil macroeconomics

Appendix A: Important Disclosures

| Company | Disclosures (see legend below)* |
|-----------------------|--|
| AES Gener | M8, VS0211, VS0355 |
| AES Tietê | M8 |
| Colbun | G, M8, U |
| Enel Americas | M8 |
| Enel Chile | M8 |
| Enel Generacion Chile | M8 |
| Engie Brasil Energia | M8 |
| Engie Energia Chile | M8 |
| IEnova | M8 |

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***Legend**

- | | |
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Engie Brasil Energia (EGIE3-SA) as of December 26, 2017 (in BRL)

| | | | | |
|---|---|--|--|--|
| 05-02-2016 Price: 37.80 Rating: SU Target: 38.00 | 11-16-2016 Price: 36.10 Rating: SP* Target: 39.00* | 04-10-2017 Price: 35.01 Rating: SP Target: 37.00* | 10-03-2017 Price: 36.72 Rating: SP Target: 38.00* | 12-20-2017 Price: 35.47 Rating: SO* Target: 38.00 |
|---|---|--|--|--|



*Represents the value(s) that changed. Powered by: BlueMatrix
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 Source: Scotiabank GBM estimates/Scotia Howard Weil estimates; FactSet.

Enel Americas (ENIA-N) as of December 26, 2017 (in USD)

| | | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|---|--|
| 07-09-2015 Price: 8.23 Rating: SP Target: 200.00 | 01-28-2016 Price: 6.12 Rating: SO* Target: 200.00 | 04-21-2016 Price: 7.45 Rating: SO Target: 110.00* | 05-02-2016 Price: 8.61 Rating: SP* Target: 110.00 | 07-28-2016 Price: 8.64 Rating: SP Target: 120.00* | 01-16-2017 Price: 8.65 Rating: SP Target: 8.89* | 01-30-2017 Price: 8.84 Rating: SP Target: 8.90* | 02-27-2017 Price: 9.66 Rating: SP Target: 9.30* | 05-08-2017 Price: 9.84 Rating: SP Target: 9.70* | 06-08-2017 Price: 9.45 Rating: SP Target: 10.10* | 07-26-2017 Price: 10.58 Rating: SP Target: 10.90* |
|---|--|--|--|--|--|--|--|--|---|--|



| |
|--|
| 11-01-2017 Price: 10.64 Rating: SO* Target: 10.90 |
|--|

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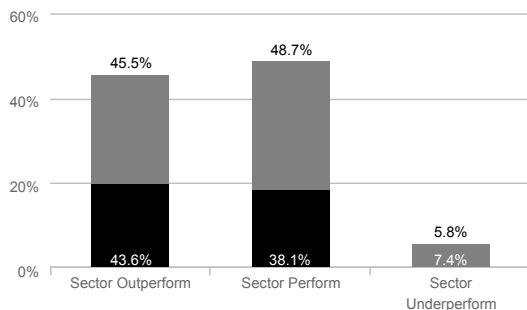
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