Truths about Wind Projects in Brazil

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A Little Background Information

- PACIFIC HYDRO IS AN AUSTRALIAN RENEWABLE ENERGY COMPANY WORKING WITH RUN OF THE RIVER HYDROS AND WIND ENERGY IN AUSTRALIA, CHILE, BRAZIL, PHILIPPINES AND FIJI
- PHB HAS TWO OPERATING WIND FARMS IN BRAZIL, BOTH OF WHICH ARE IN PARAIBA. WE ARE THE LARGEST ELECTRICITY GENERATOR IN THE STATE OF PARAIBA WITH 58MW OF INSTALLED CAPACITY
- BOTH PARKS WERE DEVELOPED BY BIOENERGY AND BOUGHT BY PACIFIC HYDRO THROUGH ACQUISITION OF SES. PACIFIC HYDRO THEN FINANCED, RE-DEVELOPED AND CONSTRUCTED THE PARKS WITH THE COLLABORATION OF LOCAL CONTRACTORS – WOBBEN ENERCON, ARTECHE AND DOIS A.

Investing in Brazil

- Not a small decision for an Australian company!
- Proinfa and a strong counterparty – Eletrobras
- Positive public image
- World class wind sites – Capacity Factors, site access, available areas
- Investment climate quite different from Australia and Chile but similar to the Philippines
- Complex tax structures and rulings leading to uncertainty
- Moving deadlines leads to uncertainty and poor image for investors
- Rules tend to have less clarity, open to interpretation

Key Issues Affecting Projects

<u>Environmental Permitting</u>

- Solid regulations, transparency in audit and issuance of licenses
- A bit more prescriptive than Australia or Chile – a matter of experience and time
- Involvement by other agencies is a concern – who should the investor believe?

<u>Land Issues</u>

- Land title clarity- state or national database,
- Strength of contracts – large investments held to ransom
- Escalating land lease costs making projects unviable
- Expertise / Experience in completing projects
- Access to <u>real</u> project finance in BRL

Financial Viability

- Taxes and Hidden Costs quickly damage project viability
- Tolling (TSUD/T) and connection fees in some states are high
- But infrastructure is not strong nor supportive to wind energy
- Interest rates for project financing is above average for Australia and Chile
- BNDES & BNB are important supporters of the sector and an important factor in working in Brazil
- Overall cost per MW installed is higher than Australia
- Developing local capability and lowering turbine costs is important to long term success
- Land lease costs reaching the maximum given the tariff and alternate use (i.e. sugar cane)

Wind in the Brazilian Energy Matrix

- Lower cost per MW/Hr for fixed and variable costs over the long run against thermal plants, without much less environmental impact
- Not subject to variable input/consumption costs
- Not subject to alternative market pricing
- Unlikely to be cheaper than Hydros unless water becomes a scarce resource
- Complementary to Hydros – countercyclical
- A perfect partner for a clean Brazilian Energy Matrix
- Needs to have a space greater than 5GW by 2030
- Investors are ready to kick off a new era of clean energy in Brazil

Vision of the Future

- Projects will get built with or without auctions
- Price / Cost misunderstanding will be clarified
- Pressure to move from auctions to a feed in tariff or REC mechanism with firm renewable energy targets and meaningful penalties for non-compliance
- Expecting positive impact from “Copenhagen Protocol”
- Strengthening of institutions involved in the sector
- Greater competition amongst turbine suppliers as the

<u>THANK YOU VERY MUCH</u>